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ABSTRACT

We study how territorial control by criminal organizations affects economic development. We exploit a natural experiment in El Salvador, where the emergence of these criminal organizations was the consequence of an exogenous shift in American immigration policy that led to the deportation of gang leaders from the United States to El Salvador. Upon arrival, the gangs gained control over many urban areas and re-created a system of borders to protect their territory from outsiders. Using a spatial regression discontinuity design, we find that individuals in gang-controlled neighborhoods have less material well-being, income, and education than individuals living only 50 meters away but outside of gang territory. None of these discontinuities existed before the arrival of the gangs. A key mechanism behind the results is that gangs restrict individuals' mobility, affecting their labor market options by preventing them from commuting to other parts of the city. The results are not determined by selective migration, differential exposure to extortion and violence, or differences in public goods provision.

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1. INTRODUCTION

How does territorial control by non-state armed actors affect economic growth? In developed societies, the effect is likely to be negative as they can impede the government from providing public goods, enforcing property rights and contracts, and preventing violence (Acemoglu *et al.*, 2001; Michalopoulos and Papaioannou, 2013). On the other hand, if the government is weak and unable to control parts of its territory, non-state armed actors may take the role of the state and fulfill essential institutional functions, potentially enabling economic growth (Tilly, 1985; Olson, 1993; Bates *et al.*, 2002; Ibáñez *et al.*, 2019; De la Sierra, 2020).[1] Non-state actors may also invest in their communities by providing public goods or transfers to compete for the hearts and minds of civilians (Ibáñez *et al.*, 2019; De la Sierra, 2020; Blattman *et al.*, 2022). Overall, the question of how and why territorial control by non-state armed actors affects development remains an open one.

In this paper, we study how territorial control by a specific type of non-state armed actors—namely, criminal organizations—affects socioeconomic development. In the developing world, millions of people live under some form of criminal governance (Lessing, 2021; Blattman *et al.*, 2022). Criminal organizations mainly function in urban centers, often controlling certain parts of the city, while other parts are controlled by the state. In particular, this paper analyzes how territorial control by two of the world's most infamous gangs—MS-13 (*Mara Salvatrucha*) and 18th Street (*Barrio 18*)— affects socioeconomic development in El Salvador.[2]

We exploit a natural experiment that took place in El Salvador. Before 1996, El Salvador did not have any significant criminal organizations. However, in 1996, after a shift in American immigration policy, which made it easier to deport individuals with criminal backgrounds back to their country of origin, many Salvadoran migrants, who were members of California-based gangs (i.e., MS-13 and 18th Street), were deported back to El Salvador, where they re-established these gangs and quickly gained control over certain parts of the country. In order to protect their territory from outsiders, the gangs also re-created a system of borders and checkpoints that they used to establish territorial dominance in California (Nuño and Maguire, 2021), resulting in the division of urban areas between the gangs and the state.

To estimate the effects of gangs' territorial control, we use the boundaries of gang-controlled

[1] The origins of gangs in California and the Italian Mafia are also related to the inability of the state to regulate illegal activities and protect landowners' property rights (Gambetta, 1996; Bandiera, 2003; Skarbek, 2011; Acemoglu *et al.*, 2019).

[2] Both MS-13 and 18th Street also have a major presence in Honduras, Guatemala, and parts of Italy, Mexico, Spain, and the United States. Moreover, similar criminal organizations are also present in many other countries (e.g., Brazil, Colombia, Jamaica, South Africa, etc.).

neighborhoods in El Salvador's capital, San Salvador, to perform a spatial regression discontinuity design. These territorial demarcations formed soon after the arrival of the gang leaders in 1996 and roughly coincide with natural barriers, such as major roads and boulevards that were present at the time of the gangs' arrival. The outcome variables are measured using the 2007 census and our own geocoded survey, which we conducted in both gang and non-gang neighborhoods in 2019.

The results from the spatial regression discontinuity design indicate that residents of gang-controlled neighborhoods in San Salvador have worse dwelling conditions, less income, and a lower probability of owning durable goods compared to individuals living just 50 meters away but outside of gang territory. They are also less likely to work in large firms. For instance, we find that residents of gang areas have $350 lower income (with the sample mean of $625) compared to individuals living in neighboring non-gang locations and have a 12 percentage points lower probability of working in a firm with at least 100 employees.

These differences in living standards did not exist before the arrival of the gang leaders from the United States. In particular, we replicate the regression discontinuity design with data from the 1992 census, showing that, prior to the emergence of the gangs, neighborhoods on both sides of the boundary of gang territory had similar socioeconomic and geographic characteristics, as well as similar levels of crime (and crime enforcement). In addition, we validate these results through a difference-in-differences analysis that uses data on nighttime light density growth between 1992 and 2013 for the entire country. We find that after the arrival of the gang leaders from the United States, areas with gang presence experienced lower growth in nighttime light density compared to places without gang presence, while before the deportations, both types of locations experienced similar rates of growth.

An important mechanism through which gangs affect socioeconomic development in the neighborhoods they control is related to restrictions on individuals' mobility. In order to maintain control over their territory and prevent the police and members of rival gangs from entering it, both MS-13 and 18th Street have instituted a system of checkpoints, not allowing individuals to freely enter or leave their neighborhoods (ICG, 2018).

Using the data from our geocoded survey, we perform a spatial regression discontinuity design to document the presence of these restrictions on individuals' mobility. We show that residents of gang areas are 50 percentage points more likely to work in gang territory compared to individuals living only 50 meters away but on the other side of the boundary. They are also less likely to say that there is freedom of movement in the neighborhood where they live or to have

been to places outside of San Salvador. These mobility restrictions affect labor market outcomes: residents of gang territory end up working in smaller firms and earning lower wages because they cannot commute to the areas where the largest and best-paying firms are located. Notably, *local* labor market conditions do not change at the boundaries of gang territory (i.e., there is no change in firm size, wages, profitability, or the number business establishments). However, residents of non-gang neighborhoods close to the boundaries are able to commute to parts of the city where the largest firms are located.

Another important factor limiting socioeconomic development in gang-controlled neighborhoods is related to educational attainment. Using school census data, we show that the annual school dropout rate is 2 percentage points higher in gang territory than in non-gang areas. Notably, the dropout rate is higher not only for school-age children but also for adults, many of whom have been participating in the Program for Adult Literacy and Education (*Programa de Alfabetización y Educación Básica de Adultos*, PAEBA), which the government created after the end of the civil war to provide school-level education for adults without a school degree (nearly 70% of the population). The resulting differences in educational attainment contribute to further widening the income gap between gang and non-gang areas.

We also examine other potential determinants of lower socioeconomic development in gang-controlled neighborhoods but find that, in this context, they cannot explain the results. In particular, we demonstrate that individuals and firms on both sides of the boundary are equally exposed to extortion and other violent crimes. This result is explained by the fact that gang members are not subject to the same mobility restrictions as the other people living on their territory. As a result, they are able to extort individuals and businesses not only in the areas they control, but also in neighborhoods outside their immediate control. This result reaffirms the importance of labor mobility in urban areas: while there is no change in firm size, wages, profits, or the number of business establishments at the boundaries of gang territory, residents of non-gang neighborhoods have better labor market outcomes because they are able to commute to other parts of the city where the largest and best-paying firms are located.

Similarly, we find no differences in the availability and quality of public goods provision (i.e., schools, hospitals, etc.), which is consistent with the qualitative evidence suggesting that the government has been willing to provide public goods in gang areas in order not to ostracize the residents of those locations.[3] In turn, because the gangs benefit from public goods provision in their

[3]In addition, the government and other political actors are motivated by electoral considerations: without providing

neighborhoods, they have been willing to allow the government to provide (non-police-related) services in the areas they control.[4] Finally, we also show that lower socioeconomic development of gang-controlled neighborhoods cannot be fully explained by selective migration of individuals across the boundary of gang territory or higher levels of unemployment (or informal employment) in gang-controlled neighborhoods.[5]

Our paper is related to several strands of the existing literature. First, it contributes to the literature studying the origins and consequences of organized crime and other non-state armed actors (Gambetta, 1996; Frye and Zhuravskaya, 2000; Skaperdas, 2001; Bates *et al.*, 2002; Bandiera, 2003; Daniele and Marani, 2011; Acemoglu *et al.*, 2013; Buonanno *et al.*, 2015; Daniele and Geys, 2015; Buonanno *et al.*, 2016; Dell, 2015; Pinotti, 2015; Daniele and Dipoppa, 2017; De Feo and De Luca, 2017; Acemoglu *et al.*, 2019; Alesina *et al.*, 2019; De la Sierra, 2020; Murphy and Rossi, 2020; Clemens, 2021; Khanna *et al.*, 2021; Mirenda *et al.*, 2022; Sviatschi, 2022a,b). Most of this literature has focused on violence (or the potential for violence) as the channel behind the effects of organized crime on politics, investment, migration, and other aspects of socioeconomic development. We complement the literature by presenting novel evidence on one specific aspect of criminal organizations that is increasingly prevalent in the developing world: territorial control in urban settings. By looking at urban areas where the territory is divided between the state and the gangs, we document a previously ignored mechanism through which criminal organizations affect development of urban communities: restrictions to mobility. As Glaeser and Sims (2015) point out, little is known about the consequences of crime in the urbanized, developing world. In these contexts, because criminal organizations constantly face the potential for territorial challenges from both rival criminal groups and the state, it becomes necessary to implement stringent security measures to protect the borders of the neighborhoods they control (e.g., impose restrictions on individuals' mobility). As a result, residents of these neighborhoods end up having significantly worse labor market outcomes because of their inability to work in other parts of the city.

public goods in gang-controlled neighborhoods, political parties would likely have been unable to campaign in those areas (e.g., see Córdova, 2019). This stems from the client-broker relationship between the political parties and the gangs, particularly during elections. In order to campaign in gang-controlled neighborhoods, political parties need to provide public goods in those areas.

[4]We also find that the gangs themselves provide a very limited amount of public services, the probability of which does not change at the boundaries of gang territory. This result may be different in other settings where non-state actors have the resources and incentives to co-opt the population under their control (e.g., Magaloni *et al.*, 2020b; Blattman *et al.*, 2022). In particular, in San Salvador, the gangs might not provide more public services in their territories because the government has been willing to provide them. Salvadoran gangs are also very limited in their financial resources (Martínez *et al.*, 2016), making it difficult for them to compete for hearts and minds. However, in settings where the government is not present (e.g., in rural areas) and criminal organizations have the resources to provide services to the public (e.g., drug cartels), territorial control by non-state actors may result in more public goods provision.

[5]Most of the migration occurs in disputed areas where violent crime is higher (Sviatschi, 2022b).

Second, our paper is related to the literature on criminal governance and the organizational structure of criminal enterprises (Levitt and Venkatesh, 2000; Skarbek, 2011; Carvalho and Soares, 2016; Ibáñez *et al.*, 2019; Lessing and Willis, 2019; Magaloni *et al.*, 2020a; Lessing, 2021; Blattman *et al.*, 2022). A large part of the existing literature has shown how non-state armed actors emerge to fill the void left by the state and provide security and other public goods to the local population in exchange for political influence (e.g., Blattman and Miguel, 2010), taxation (e.g., Olson, 1993; De la Sierra, 2020), and the opportunity to conduct their illegal activities. Our paper analyzes how these relationships are altered in an urban context, where the proximity of the state, on the one hand, poses a threat to the gangs' territorial control but, on the other hand, allows the gangs to rely on the provision of most public goods by the government.[6] In addition, most of the armed actors literature has focused on politically-motivated insurgency movements (e.g., Blattman and Miguel, 2010), whereas Salvadoran gangs have avoided direct involvement in politics.

Third, our paper contributes to the literature studying the causes and consequences of the formation of extractive institutions, which can have a long-lasting impact on socioeconomic development (e.g., Acemoglu *et al.*, 2001, 2002; Dell, 2010; Michalopoulos and Papaioannou, 2013; Dell *et al.*, 2018; Dell and Olken, 2020; Lowes and Montero, 2021). Specifically, it shows how the deportation of criminal leaders from the United States to El Salvador has resulted in them establishing two extortionary gangs that significantly limit socioeconomic development in the country. It also contributes to a long-standing debate on whether individual leaders—in this case, gang leaders—affect economic growth in developing countries (Jones and Olken, 2005).

Finally, our work is related to the literature analyzing the economic effects of barriers to geographical mobility, such as international borders (e.g., Clemons *et al.*, 2008; McKenzie *et al.*, 2010; Mergo, 2016; Calì and Miaari, 2018; Alsawady *et al.*, 2022) and the absence of transportation infrastructure (e.g., Donaldson, 2018; Asher and Novosad, 2020). We complement this literature by showing how gang-imposed restrictions on individuals' freedom of movement can significantly affect socioeconomic development, even in the context of one city and in the absence of direct transportation costs and legal borders. Given the global prevalence of similar intracountry barriers to mobility, our results provide important policy implications for many developing countries. In particular, non-state armed actors restrict individuals' freedom of movement in Brazil, Colom-

[6] In particular, while the literature on stationary bandits would imply that armed actors have incentives in maximizing residents' incomes—including filling the voids of the state through some public goods provision—in order to maximize extortion rents in the territory they control (e.g., Olson, 1993; De la Sierra, 2020), we provide novel evidence that this incentive can be undermined in an urban context where labor market mobility is needed to maximize income.

bia, Guatemala, and Honduras (e.g., Ibáñez *et al.*, 2019; Magaloni *et al.*, 2020a), and many other countries experience alternative forms of mobility restrictions (e.g., see Walther *et al.*, 2020).

The rest of this paper is structured as follows. Section 2 describes the rise of criminal groups in El Salvador and their organization. Section 3 describes the main data sources. Section 4 presents the regression discontinuity design. Section 5 analyzes the mechanisms driving the results. Section 6 concludes.

2. Historical Background

In this section, we present an overview of how MS-13 and 18th Street developed in Salvadoran migrant communities in the United States and how criminal capital was exported from these communities to El Salvador following a shift in American immigration policy in 1996. We then describe how, once in El Salvador, the gangs quickly established their criminal structures, began recruiting, and gained territorial control over certain neighborhoods, particularly in urban centers such as the capital, San Salvador. In particular, we provide qualitative evidence on how the boundaries of gang territory were formed soon after the arrival of the criminal deportees, based on the system of territorial control that the gangs had in the United States.

2.1. The origins of MS-13 and 18th Street

Southern California, and especially Los Angeles, became home for thousands of Salvadorans fleeing the country's descent into civil war in the 1980s (Stanley, 1987). Lacking established network support, Salvadoran migrants lived in poor and overcrowded neighborhoods, often facing discrimination from other migrant groups (Brettell, 2011). In a typical family, both parents worked, often leaving the children without supervision (Savenije, 2009).

Left on their own and facing prejudice from other migrant groups and their gangs, some Salvadoran youth formed the precursors to MS-13, self-defense groups that were initially better known for petty crime, affinity to cannabis, and heavy metal rather than brutal violence, while others joined an existing Mexican gang, 18th Street (Dunn, 2007; Cruz, 2010; Martínez and Martínez, 2018). As membership grew across Salvadoran migrant communities, MS-13 and 18th Street became known to the local authorities, and some of their members were sent to prison, where they gained criminal capital and social connections that helped them solidify their structures (Womer and Bunker, 2010; Martínez and Martínez, 2018). By the mid-1980s, both MS-13 and 18th Street

had developed independent identities, organizational structures revolving around territory-based cliques (*clicas*), and a fierce rivalry that continues to date (Ward, 2013).

One important characteristic of many gangs in Los Angeles in the 1980s has been the precise demarcation of their territory, which greatly contributed to their identity and development (Coughlin and Venkatesh, 2003). For example, during that time, graffiti became a popular way for the gangs to demarcate the territories under their control and to project authority over their rivals and the local population (Artsy, 2018; Tita *et al.*, 2005). This demarcation had profound impacts on the mobility and decisions of individuals living in gang territories: "If I'm a young person growing up in a particular neighborhood [in Los Angeles] and the closest movie theater or the closest shopping mall is claimed by a rival gang, whether I'm a gang member or not, I'm not going to feel comfortable, I'm going to have to spend more time on a bus, put more gas in my car, to travel to other areas" (Artsy, 2018).

In an observational study of incarcerated MS-13 gang members in Los Angeles County, Nuño and Maguire (2021) highlight how "most MS-13 members are involved in cliques that claim certain turf or territory (96.3%) and would be willing to use violence to defend it against others (92.6%)," relying on graffiti and outposts to mark and control their territories.[7] This facet of gang culture became the basis for the development and expansion of MS-13 and 18th Street structures once in El Salvador.

2.2. American immigration policy and the emergence of gangs in El Salvador

In 1996, in an effort to reduce crime in urban areas and deeming Central America "safe" after the end of the region's civil conflicts, the United States passed the Illegal Immigration Reform and Immigration Responsibility Act (IIRIRA) (Chacón, 2009; Abrego *et al.*, 2017). IIRIRA drastically increased immigration enforcement, creating expedited removal procedures, adding new grounds for deportation, and increasing the number of border patrol agents. In practice, for El Salvador, this shift in American immigration policy had a profound impact on the number of forced removals of its citizens from the United States, significantly increasing the number of repatriations following IIRIRA's passage in 1996. During the first wave of deportations, over 500 Salvadoran gang members were deported from the United States (Sviatschi, 2022b), leading to profound changes in

[7]The territorial identity is so important that, when MS-13 and 18th Street expanded to El Salvador, many of the cliques there adopted names that alluded to the locations where their gang leader—now repatriated to El Salvador—commenced their illicit careers in the United States (e.g., *Hollywood Locos Salvatruchos* for the Hollywood area in Los Angeles).

Salvadoran communities as they arrived.

Given that they did not have criminal records in El Salvador, the repatriated gang members—many of whom were serving or had previously served sentences in the United States—gained their freedom after returning to their home country (Ward, 2013). In 1996, El Salvador was still recovering from the consequences of the civil war which ended in 1992, and the Salvadoran state did not have sufficient resources to prevent the gangs from expanding. The 1992 Peace Accords mandated the creation of a new police force—the National Civil Police (*Policía Nacional Civil*, PNC)—and at the time of the repatriations, the structure of the PNC was still being defined (e.g., there were no rural police units until 2004). As a result, the repatriated gang leaders exploited the low level of state capacity in El Salvador and expanded their operations to many urban areas.

Back in El Salvador, as the vast majority of the repatriated MS-13 and 18th Street gang members had lived in the United States since a young age and lacked knowledge on their home country, most of them returned to their birth municipalities, relying on their family networks (DeCesare, 1998; Sviatschi, 2022b). Seeking social acceptance and status, the gang deportees banded together and tapped into local youth groups to replicate the gang structures they had in California. Even though only a few hundred gang members were repatriated from the United States in 1996, they quickly recruited new members from the local population. Many individuals where attracted by the sense of camaraderie and respect that the gangs offered, others sought more tangible material gains such as money and drugs (Cruz and Portillo Peña, 1998; Martínez and Martínez, 2018). Sviatschi (2022b), in particular, shows how, after the arrival of the gang deportees in 1996, El Salvador experienced an immediate increase in gang-related activities as MS-13 and 18th Street recruited adolescents to join their structures. According to the local authorities, by the end of 1996, at least 20 thousand people had joined the two gangs (Cruz and Portillo Peña, 1998).

2.3. The formation of gang territory in El Salvador

Our conversations with the police and individuals living in gang areas suggest that, in San Salvador, the boundaries of gang territory were formed soon after the arrival of the deportees and have been stable since then.[8] The rapid formation and enforcement of boundaries was mainly possible due to three factors: i) the fact that gang deportees knew that territorial control was im-

[8]In Subsection 4.3 and Appendix Section C.1, we test the assumption that the boundaries have remained stable and discuss the empirical implications of potential inaccuracies in the maps of gang territory. In Subsection 4.4, we also show that the empirical results are robust to excluding observations close to the boundary, ruling out that effects could be driven by potential inaccuracies in the maps or outlier observations close to the boundary.

portant for their survival and identity as they had also implemented borders demarcations of their territory back in Los Angeles in the 1980s, ii) their ability to recruit new members from El Salvador, and iii) the country's low level of state capacity at the time of their arrival from the US.[9] To this day, the state is still unable to regain control over the neighborhoods controlled by the gangs.[10] There have been attempts by the police to regain control over those locations, but they have been unsuccessful.[11] In part, those efforts have failed because the gangs have formed ties with the local population, cultivating a network of informants that allows them to elude capture (Cruz, 2010; Ward, 2013; Boerman and Golob, 2020).

The importance of the boundaries of gang territory has been widely documented. International Crisis Group (ICG) describes the situation as follows: "In some areas, gangs have accumulated so much power that they have become de facto custodians of these localities, setting up road-blocks, supervising everyday life and imposing their own law" (ICG, 2017). In another interview, a resident of San Salvador is even more direct: "Do you see that place across the road? I could never get in there since it's the 18th Street gang's territory. If they see me in there, they might think I'm a spy [...] and I could easily get killed" (ICG, 2018).

How were the boundaries of gang territory formed? Upon their arrival, the gangs started recruiting new members and quickly expanded their territorial control. According to qualitative evidence, gangs defined many boundaries based on natural barriers, such as main roads and boulevards (Vega, 2015; Tenorio, 2002). Three such examples are *Bulevar Venezuela*, *49 Avenida Sur*, and *Autopista Comalapa*, which already existed in 1996 and which are wide multi-lane roads that make it difficult for the gangs to exert control over neighborhoods on both of their sides. Thus, such geographical barriers constitute the "natural boundaries" of gang territory. We take advantage of their presence and, in areas where they exist, verify that the results of the regression discontinuity analysis do not change if we use the "natural boundaries" of gang territory instead of the true ones. Moreover, in Subsection 4.3, we show that locations across the boundary did not have any pre-existing differences before 1996 in socioeconomic conditions (e.g., quality of housing, the pop-

[9] Although there have been turf wars between MS-13 and 18th Street, they have focused on the original territories seized in the late 1990s. Outside San Salvador, certain municipalities did experience expansions of gangs' territorial control, especially in less urban areas that were not the focus of the first wave of the gangs' territorial expansion.

[10] In Subsection 4.4, we address the potential concern that, in order to prevent the gangs from expanding, the government has accumulated resources close to the boundary of gang territory. In particular, we show that the results are very similar if we exclude locations close to the boundary (see Table A20). We also check whether the government has been placing police stations close to the boundary of gang territory and find no evidence for this.

[11] In June 2019, the government launched the operation "Plan Territorial Control" (*Plan Control Territorial*), which seeks to regain control over gang territory. The launch of this plan and its name allude to the gravity of the situation and to the strength of the gangs: La Prensa Gráfica (accessed on October 5, 2019).

ulation's level of education, etc.), or crime, regardless of which side of the boundary they were on. This result allows us to conclude that, for places close to the boundaries of gang territory, treatment status was as good as random.

2.4. Gang activity, restrictions on mobility, and public goods provision

Once the gangs assert control over a particular neighborhood, they zealously protect it from outside influence. The main threat to the gangs' security comes from police informants or rival gang members entering their territory and killing or arresting them. For this reason, both MS-13 and 18th Street introduced a system of checkpoints, requiring individuals attempting to enter or exit the area to show their identification cards, which have the residential address printed on them (ICG, 2018). To implement this policy, the gangs have junior gang members and collaborators (*banderas*) patrolling the boundaries of their territory (ICG, 2018; Boerman and Golob, 2020).[12,13] This system of territorial control has existed in its current form since at least 1999 (Palma, 1999), supported by the gangs' ability to entice and coerce new *banderas* to join their criminal structures.

These restrictions on individuals' mobility are essential for the gangs' long-term survival. Without them, the gangs would not be able to prevent rival gang members and police informants from entering their territory, which would, in turn, make gang members vulnerable to arrest or assassination. Another related threat to the gangs' security comes from residents of their territory defecting and providing information about the gangs´ whereabouts and activities to the police or the rival gang. For this reason, both MS-13 and 18th Street use sophisticated techniques to track down potential defectors; many end up killed.[14] Overall, mobility restrictions are such a prominent issue in El Salvador that in 2016 the criminal code was reformed to introduce the crime of "illegal restriction of freedom of movement", which penalizes "any person who, by violence, intimidation or threat to persons or property, prevents another from freely moving, entering, remaining or leaving any place in the territory of the Republic".

In addition to improving security, the presence of checkpoints also allows the gangs to collect extortion payments from those individuals and businesses that have been allowed to enter or exit their territory (e.g., distribution and transportation companies). Martínez (2016) describes

[12]Often the *banderas* are barely 8 years old, which protects them from being arrested (ICG, 2018).

[13]Both MS-13 and 18th Street also sometimes stop public buses and check the identity cards of the people inside. If a passenger lives in a neighborhood controlled by a rival gang, they need to leave immediately, or face the risk of being killed. For instance, see this report by the BBC (accessed on October 6, 2019).

[14]As a result, unless a resident of gang territory is confident that they will be able to avoid detection by the gangs, it would not be optimal for them to move to a different location. We provide a detailed discussion of the reasons preventing people from migrating out of gang territory in Section C.2 of the Appendix.

the situation in the following way: "One of the great advantages of having borders between rival gangs is imposing taxes. Everyone pays: companies that install cable television, the women that sell in the central markets, taxi drivers." The fee is at least one to three dollars, a non-trivial expense for individuals whose average monthly income is approximately $300, and needs to be paid to a *bandera*, who is monitoring the boundary of gang territory (ICG, 2018). More generally, both MS-13 and 18th Street rely on extortion as their main source of revenue and collect regular payments from individuals and businesses throughout San Salvador, including non-gang parts of the city (InSight Crime and CLALS, 2018).[15]

As a result of restrictions on their mobility, many residents of gang-controlled neighborhoods have poor labor market outcomes, being unable to work in locations outside of gang territory. However, as we show in Subsection 5.1, this does not happen due to a change in *local* labor market conditions at the boundaries of gang territory. Instead, people living in non-gang areas close to the boundary have better jobs due to their ability to commute to other parts of the city, where the largest and best-paying firms are located. The reason for the absence of a change in local labor market conditions is that, when it comes to collecting extortion payments (and other gang-related activities), gang members and their collaborators do not face restrictions on their mobility. As a result, as we show in Section 5.4, individuals and businesses in non-gang areas close to the boundary of gang territory have the same exposure to extortion and other gang-related crimes as residents of gang neighborhoods. Thus, another advantage of having territorial control over certain areas is that they provide a "bridgehead" from which the gangs can extort nearby locations that are not under their control. Then, after completing their mission, gang members can retreat back to the safety of their territory.

As the de facto authorities in their territories, gangs claim to be "providing a 'community service' by protecting locals from other criminals and corrupt police" (ICG, 2018). In reality, while such claims are not totally misleading, we find that, for two reasons, the gangs provide only a very limited amount of public services. First, unlike many other criminal organizations, such as drug cartels or the Italian Mafia, Salvadoran gangs are quite poor, with a rank-and-file gang member earning, at most, $15 a week, half the minimum wage of an agricultural day laborer (Martínez *et al.*, 2016). Therefore, the gangs do not have sufficient resources to invest in improving economic conditions in the neighborhoods they control. The second reason why the gangs provide few

[15] According to the Salvadoran National Council of Small Businesses, 79% of businesses pay extortion to the gangs, including expensive restaurants and shopping malls (e.g., see this article by the Economist, accessed on May 8, 2020).

public services is related to one of the peculiarities of the urban context in which the gangs and the state coexist. Given the government's proximity to gang territory, in the absence of mobility restrictions, government workers have the capacity to provide public goods in the entire city and not only in areas controlled by the state. Moreover, the government has had at least two reasons to continue investing in infrastructure and social and educational programs in gang-controlled neighborhoods. First, if the government were to stop providing public goods in gang territory, its legitimacy in the eyes of the local population would likely be undermined, increasing support for the gangs (Zoethout, 2015). Second, such a move could be costly for incumbent politicians: "gangs serve as intermediaries between political parties and residents in controlled neighborhoods [...] offer[ing] political candidates what no other broker or intermediary can provide—the use of coercive violence to sway elections in their favor" (Córdova, 2019). Thus, not providing social programs in gang areas could significantly reduce politicians' reelection prospects, in addition to potentially endangering their lives.[16]

In turn, the gangs have been willing to allow non-police-related government workers to enter their territory and provide public services, both because gang members directly benefit from their availability and because government investment indirectly contributes to higher revenues from extortion. For example, the construction and repair of roads in gang-controlled neighborhoods has allowed the gangs to collect more extortion payments from trucks and transportation companies passing through their territory (ICG, 2017).

3. DATA

In this section, we document the primary sources of data drawn upon in this study. Further clarifications about the data, as well as a description of the ancillary data sources, can be found in Section A of the Appendix. Table A1 in the Appendix presents the summary statistics of the outcome variables used in the analysis.

Gang boundaries.—In 2015, a local newspaper—*El Diario de Hoy* (EDH)—published the map that is utilized in this study (see Figure 1), which delimited the locations controlled by MS-13 and 18th Street in San Salvador. EDH based its report on information and cartography from the Ministry of Justice and Public Security and the PNC. The newspaper further validated the map of gang boundaries by confirming that the gang-controlled neighborhoods on the map are also the places where its distribution network had periodic encounters with gang members. We have also

[16]For an in-depth look at how gangs use their political power, see El Faro (accessed on October 6, 2019).

independently verified the accuracy of the map published by EDH.[17] Moreover, in Subsection C.1 of the Appendix, we present evidence on how the boundaries of gang territory had remained stable between the time they were formed soon after the emergence of the gangs and 2015 when EDH published the map of gang areas.

1992 and 2007 population and household censuses.—The General Directorate of Statistics and Censuses (*Dirección General de Estadísticas y Censos*, DIGESTYC) provided us with anonymous microdata for the 1992 and 2007 censuses. The data cover the socioeconomic characteristics of all the country's households and individuals, including—but not limited to—educational attainment and material ownership (e.g., having a car, a TV, etc.). Both censuses also recorded the characteristics of all the dwellings in El Salvador.[18] For most outcome variables, both censuses had the exact same wording of the questions. Hence, the data are directly comparable across censal exercises.[19]

1992 and 2007 censal cartography.—DIGESTYC also provided us with maps of the census tracts (*segmentos censales*) for both the 1992 and the 2007 censuses. Each census tract represents a very small area with a fixed geographic perimeter. In 2007, the average census tract in our sample included 131 households and 473 individuals. The fact that the census tracts are quite small allows us to accurately measure their location, which we estimate by using the geographic coordinates of their centroids. In addition, because of the difficulty with attributing treatment status, we exclude 27 census tracts (4% of the census tracts in San Salvador), which have the centroid outside of gang neighborhoods, but at least 25% of their territory is controlled by the gangs. Finally, we limit our analysis to census tracts located within 420 meters of the boundary of gang territory because after that, there are gaps in the distribution of observations both inside and outside of gang-controlled areas.[20]

2019 survey.—To document the mechanisms through which gangs affect socioeconomic development, in 2019, we conducted our own geocoded survey in San Salvador. To be consistent with the census data, the survey was conducted in areas within 420 meters of the boundary of gang territory. The survey was designed to be representative by 30-meters bins, denoting the dis-

[17] In particular, we contacted the PNC and were confidentially shown their 2018 map of gang-controlled areas, which was almost exactly the same as the map published by EDH. For confidentiality reasons, we are not able to use or present the 2018 map in the paper.

[18] Notably, the data for these variables were not self-reported by the respondents but recorded by the enumerators based on their observations.

[19] The notable exception are questions related to technologies that were not widely available in 1992 (e.g., access to the internet). These questions were only asked in the 2007 census.

[20] For instance, in the 1992 data, there are no census tracts that are located 430 meters away from the boundary outside of gang territory (i.e., such census tracts do not exist). We have verified that the results are fully robust to not limiting the sample to observations within 420 meters of the boundary.

tance to the boundary of gang territory (separately for each side of the boundary).[21] It consisted of in-person interviews and contained questions related to individuals' mobility, employment, income, satisfaction with the quality and availability of public goods, and the role of formal (i.e., government) and informal institutions in resolving problems in the neighborhood. However, it should be noted that, for security reasons, we were unable to ask individuals questions related to gang activity.

Extortion.—The data on the extortion of firms and individuals in San Salvador come from the following three sources. First, the data on whether firms have experienced extortion come from a survey of small and medium-sized enterprises conducted by the Salvadoran Foundation for Economic and Social Development (*Fundación Salvadoreña para el Desarrollo Económico y Social*, FUSADES). The survey also asked whether the firm has witnessed gang activity in the location where it operates. The survey took place in 2015 and includes data on 512 firms in San Salvador.

Second, the data on the amount of extortion paid to the gangs come from confidential internal records on all the extortion payments that a large Salvadoran distribution firm has made to the gangs between 2012 and 2019.[22] The firm operates throughout San Salvador municipality and has had to pay extortion in all parts of the municipality. The data consist of 4,120 observations representing the amount of money paid to the gangs and the exact geocoordinates of the location where the payment was made. All the payments are relatively small in size, ranging between $1 and $100 with the mean of $6, and are paid on a day-to-day basis. Almost 97% of the payments fall into the range from $1 to $20.

Finally, the data on instances and the amount of extortion paid by individuals come from our own geocoded survey that we conducted in San Salvador in 2020. Specifically, we asked the respondents whether they had ever been extorted and the amount of extortion they had to pay.[23] The design of the 2020 survey was exactly the same as the one for the 2019 survey, except that it was conducted over the telephone, which happened for two reasons.[24] First, we would not have been able to ask questions about extortion in in-person interviews because that would have posed

[21] The choice to make the survey representative by 30-meters bins was made because, as described in Subsection 4.1, 30 meters is the average value of the optimal bandwidth for the variables from the 2007 census, which is estimated using the procedures suggested in Imbens and Kalyanaraman (2012) and Calonico *et al.* (2014, 2018, 2020). The full details of the survey's sampling procedure can be found in the Appendix.

[22] These data were shared with us as part of a confidentiality agreement with the firm. We do not name the firm because of security concerns. For further details, see Brown *et al.* (2020).

[23] More specifically, to account for the possibility of multiple payments, the respondents were asked to name the amount of money paid to the gangs during the month when they faced extortion. We then divide this number by 30 to make it correspond to day-to-day payments.

[24] Before conducting the survey, we verified the respondent's address to ensure that the observations are correctly geocoded. Further details about the survey can be found in the Appendix.

a significant risk to the safety of the enumerators. Second, the lockdown restrictions due to the COVID-19 pandemic made it very difficult to conduct in-person interviews.

Annual school censuses.—The annual school census data were obtained from the Ministry of Education and cover the period from 2005 to 2017. These censuses include annual information on the number of students enrolled in each grade at the beginning of the year and the number of students that graduated from each grade, allowing us to calculate the dropout rate for each school-year in our sample. Some of the schools also participated in the Program for Adult Literacy and Education, the purpose of which was to provide school-level education for adults without a school degree. For these schools, we additionally calculate the dropout rate among adults.

Homicides and robberies.—The data on gang-related homicides come from the PNC and cover the period from 2003 to 2014. For each observation, we obtained information about the time and day it occurred, whether the perpetrator was a member of a gang, and the address of occurrence. Using these addresses, we manually geocoded the data to obtain the latitude and longitude of the homicides carried out by gang members. The PNC also shared with us the data on gang-related homicides in 2000, but these data are available only at the municipality level.

The data on robberies come from the Metropolitan Planning Office for San Salvador (*Oficina de Planficación del Área Metropolitana de San Salvador*, OPAMSS). They cover the period from 2014 to 2015 and contain information on the time, date, and location of all robberies, including their latitude and longitude.

Incarceration data.—The data on incarcerations come from the General Directorate of Prisons (*Dirección General de Centros Penales*, DGCP) and represent the universe of all individuals who have been incarcerated in the country since the mid-1980s. The records contain information about the crimes the individual has committed, the date of incarceration, the municipality and department of birth, and the latest known address. For inmates who entered prison before 1997 and whose latest known address is in San Salvador municipality (4,726 individuals), we manually geocoded the residential addresses to obtain the precise geocoordinates used in the analyses. Given that geocoded crime data prior to 2003 are unavailable, the inmates' residential addresses represent the best measure of criminal activity in the pre-treatment period.

4. GANG CONTROL AND SOCIOECONOMIC DEVELOPMENT

To estimate the effects of gangs' territorial control on socioeconomic development, we begin with performing a spatial regression discontinuity design, focusing on San Salvador municipality for which we have data on the boundaries of the locations controlled by the gangs.

4.1. Empirical strategy: Regression discontinuity

We estimate the effect that gangs have on socioeconomic development in the neighborhoods they control. The main outcome variables come from the 2007 census. For each census tract, we calculate the distance from its centroid to the boundary of gang territory (in tens of meters) and perform a spatial regression discontinuity design, using this distance as the forcing variable (Specification 1):

$$y_{ic} = \alpha_0 + \alpha_1 \, distance_c + \alpha_2 \, gang \; territory_c distance_c + \alpha_3 \, gang \; territory_c + \varepsilon_{ic}, \tag{1}$$

where, depending on the specification, i denotes individuals, dwellings, or households, and c denotes census tracts. *gang territory* is a dummy variable for whether the location is controlled by the gangs, *distance* represents the distance to the boundary of gang territory, and y—the outcome variable of interest. As a baseline, standard errors in parentheses are clustered by 30-meter bins denoting the distance to the boundary of gang territory, separately for locations inside and outside of gang territory. This size of the bins comes from estimating the optimal bandwidth for each of the outcome variables from the 2007 census, following Imbens and Kalyanaraman (2012) and Calonico *et al.* (2014, 2018, 2020): 30 meters is the average value of the optimal bandwidth for the variables from the 2007 census.[25] The assumption behind this way of clustering the standard errors is that the correlation between the error terms primarily depends on the distance to the boundary of gang territory (e.g., because of differential spillovers of gang activity). The alternative possibility is that the error terms are correlated only within neighboring areas. Therefore, in the main regression tables, when it is possible, we also report Conley standard errors (in brackets), which

[25] We have verified that the results are fully robust to using smaller or larger distance bins to cluster the standard errors, and we illustrate this fact for the main outcome variables in Figures A13 and A14. In Table A8 in the Appendix, we also show that the estimates do not change if we divide the map of San Salvador into 300×300 meter grid cells and include fixed effects for each of the grid cells in the regression specification. Thus, the results are not driven by the comparison of gang and non-gang areas in different parts of the city. The results are also robust to performing a two-dimensional regression discontinuity design in latitude and longitude instead of distance to the boundary of gang territory (Table A9 in the Appendix).

allow for spatial correlation within a 100 meter radius.[26] Throughout the paper, the significance of the results remains the same regardless of which standard errors are used.

The coefficient of interest is α_3, which represents the effect of living in a gang-controlled neighborhood. The two assumptions for interpreting this effect as causal are as follows. First, non-gang areas close to the boundary of gang territory should provide the appropriate counterfactual for socioeconomic development in the absence of gang control. In Subsection 4.3, we validate this assumption by showing that, before the arrival of the gangs, locations on both sides of the current boundary of gang territory had similar geographic and socioeconomic characteristics as well as the same number of incarcerated individuals. The second assumption is that residents of gang territory did not selectively migrate from those areas to neighboring locations in the control group. Subsection 4.3 provides a detailed discussion of this assumption, showing that no more than 14.2% of the results can be driven by selective migration.

4.2. Main results

Table 1 presents the results of estimating Specification (1) using the data from the 2007 census. It shows that, after experiencing gang rule, individuals living in gang-controlled neighborhoods have significantly worse dwelling conditions, lower levels of education, and are less wealthy than their peers on the other side of the boundary. For instance, residents of gang territory are estimated to have 21 percentage points lower probability of owning a car, 15 percentage points lower probability of having a high school degree, and 5 percentage points lower probability of their houses' walls being made of concrete than individuals living less than 50 meters away but not under the control of gangs.[27] The results for the other measures of socioeconomic development present the same pattern.

Figure 2 illustrates the findings from Table 1 for the first principal components of the dwelling, household, and individual characteristics. The vertical axis represents the average value of the outcomes variables; the horizontal axis—distance (in meters) to the boundary of gang territory. Areas to the left of the dashed line are located outside of gang territory; areas to the right are controlled

[26] It is not possible to report Conley standard errors for certain outcome variables. For instance, in some regressions, the unit of observation is a 10-meter bin, denoting the distance to the boundary of gang territory (e.g., the number of schools per square kilometer). In these cases, by definition, each unit of observation consists of locations in different parts of San Salvador. Moreover, because the 10-meter bins are visually represented by concentric curves around the boundary of gang territory, each unit of observation has the same centroid.

[27] In the individual-level regressions, the sample consists of the entire population. The results are very similar if, instead, we perform the analysis for the adult population.

by the gangs. For all the outcome variables, there is a clear discontinuity at the boundary of gang-controlled neighborhoods.[28]

Overall, the results suggest that gangs have had a significant negative effect on socioeconomic development in the neighborhoods they control. To estimate the total monetary cost of this effect, we consider a variable that potentially aggregates all the effects of living under gang control into one—household income, the data for which come from the 2019 survey. Figure 3 presents the regression discontinuity plot for this variable. The results suggest that residents of gang neighborhoods earn approximately $350 less each month compared to residents of non-gang areas. Given that the average income in our sample is $625, this discontinuity implies a reduction in income of more than 50%. Table A5 in the Appendix presents the regression estimates for household income and the other socioeconomic characteristics from the 2019 survey.

4.3. Addressing identification challenges

In this subsection, we analyze the assumptions that need to be satisfied for the estimates in Table 1 to represent the causal effect of gang control on socioeconomic development. In particular, we show that, before the arrival of the gangs, areas on both sides of the boundary of gang territory had similar geographic and socioeconomic characteristics as well as the same number of incarcerated individuals. We also show that the results are not driven by selective migration across the boundaries of gang territory.

Conditions before the arrival of the gangs.—To ensure that non-gang areas close to the boundary of gang territory are the appropriate counterfactual for gang-controlled neighborhoods, we check that, before the arrival of the gangs, those locations did not have any pre-existing differences in geography, socioeconomic development, or crime.

First, we estimate Specification (1) for potentially important neighborhood characteristics (e.g., elevation, access to the waterways, road density, etc.) and the socioeconomic characteristics from the 1992 census (e.g., dwelling conditions, having a TV, etc.).[29] Columns 1-24 of Table 2 present the results. There are no discontinuities in any of the variables, confirming the notion

[28] In the Appendix, we illustrate the results for all the other outcome variables from Table 1. Figure A1 presents the results for the dwelling characteristics, Figure A2—for the household characteristics, and Figure A3—for the individual characteristics.

[29] Some neighborhood characteristics (e.g., elevation or access to the waterways) are time-invariant. Other neighborhood characteristics potentially change in time. For all the variables except for road density, we use the data either from before the arrival of the gangs or soon after their arrival. For road density, the data reflect 2020 infrastructure, making the pre-treatment balance test for this variable valid only under the assumption that road density is practically time-invariant. However, given the difficulty of constructing new roads in the center of a large city, this assumption is likely to be satisfied. A detailed description of the data is available in the Appendix.

that, initially, the locations on opposite sides of the boundary were not different from one another. Figures A5-A8 in the Appendix illustrate the results for the neighborhood, dwelling, household, and individual characteristics, respectively.

Next, we estimate Specification (1) for the level of crime (and crime enforcement) prior to the arrival of the gangs, measured by the number of people incarcerated in different parts of the city. We use incarceration records from San Salvador's prisons and geocode the residential addresses of the 4,726 individuals who have been incarcerated prior to 1997.[30] Then, we calculate the number of incarcerations per square kilometer for each 10-meter bin, denoting the distance to the boundary of gang territory (separately for each side of the boundary).[31] Columns 25-30 of Table 2 present the results of estimating Specification (1) for different types of crimes, showing that locations on both sides of the boundary had similar levels of crime prior to the arrival of the gangs.

Boundaries of gang territory from geographical barriers.—Before 1996, gang and non-gang locations had similar levels of socioeconomic development, crime, as well as the same rates of economic growth. These results allow us to conclude that the exact locations of the boundaries of gang territory were as good as random and that non-gang areas close to the boundary are the appropriate counterfactual for gang neighborhoods in the absence of the gangs.

To address any remaining concerns regarding the potential endogeneity of the boundaries, we perform the following analysis. We take advantage of the fact that, in certain cases, the borders of gang territory were determined by the presence of major geographical barriers, such as multi-lane roads and boulevards, which prevented the gangs from extending their control. Specifically, we consider *Bulevar Venezuela*, *49 Avenida Sur*, and *Autopista Comalapa*, which together created more than 45 kilometers of "natural barriers" that largely determined the North-Western boundaries of gang territory.

Table 3 reports the results of estimating Specification (1) that, instead of the actual boundaries of gang territory, uses *Bulevar Venezuela*, *49 Avenida Sur*, and *Autopista Comalapa* to predict the location of the boundaries. The results remain highly significant, demonstrating that they are not

[30] Given that geocoded crime data are unavailable prior to 2003, incarceration records provide the best measure of criminal activity in the pre-treatment period. In addition, the fact that incarceration records contain the exact last residence address for each individual allows us to analyze whether there were more criminals in gang-controlled neighborhoods relative to non-gang neighborhoods.

[31] We perform the calculation in the following way. First, we divide the map of San Salvador into zones, denoting every 10 meters of distance from the boundary of gang territory, separately for gang and non-gang areas (e.g., all non-gang locations that are within 10 meters of the boundary of gang territory, all non-gang locations that are 10-20 meters away from gang territory, etc.). Then, for each of the zones, we calculate the number of geocoded addresses located in it and divide that number by the area of the zone. The same procedure is used for other outcome variables with the same unit of analysis.

driven by the potential endogeneity of some of the boundaries of gang territory.

We also perform a placebo analysis, in which we use major roads that did not contribute to the formation of the boundaries of gang territory, to ensure that these geographical barriers did not affect socioeconomic development through factors unrelated to the gang boundaries. The analysis focuses on a series of consecutive roads, ranging from *Paseo General Escalon* in the West to *Avenida Independencia* in the East, that split San Salvador into two similarly-sized parts (see Appendix Figure A9). We then estimate whether the level of socioeconomic development changes at the placebo boundary.[32] Appendix Table A4 presents the results, confirming the notion that major roads do not affect development outcomes through factors unrelated to the gang boundaries.

Stability of the boundaries of gang territory.—A potential concern is that the boundaries of gang territory may not have remained stable between the time they were formed soon after the emergence of the gangs and 2015, when EDH published the map of gang territory. If the EDH map does not accurately reflect which neighborhoods were controlled by the gangs in 2007, the estimates in Table 1 would be biased towards zero (i.e., against finding an effect).[33] Thus, the results in Table 1 should be interpreted as the lower bound of the effects of gang control.

Nevertheless, in Subsection C.1 of the Appendix, we demonstrate that the boundaries of gang territory have remained stable since the time they were formed soon after the arrival of the gangs. Specifically, we exploit the fact that most gang-related homicides take place precisely at the boundaries of gang territory because of people attempting to enter or leave gang-controlled neighborhoods without permission.[34] As a result, by showing that, throughout the years, gang-

[32]Specifically, we estimate the regression specification defined below, where *north* is a dummy variable for a census tract being to the north of the placebo boundary. We allow the overall level of socioeconomic development as well as the effect of distance to the placebo boundary to be different in gang and non-gang areas, but we have verified that the results are similar (although less precise) if we consider a regression specification that does not allow this. The coefficient of interest is ψ_6, which estimates the change in socioeconomic conditions at the placebo boundary. Since there are relatively more gang-controlled census tracts close to the placebo boundary, we expand the sample to include census tracts that are located within 1500 meters of the placebo boundary. Thus, we ensure that the results are not driven only by gang-controlled neighborhoods.

$$y_{ic} = \psi_0 + \psi_1\, dist._c + \psi_2\, dist._c north_c + \psi_3\, gang\ ter._c + \psi_4\, gang\ ter._c dist._c + \psi_5\, gang\ ter._c dist._c north_c + \psi_6 north_c + \varepsilon_{ic}, \quad (2)$$

[33]For instance, if, in reality, the gangs controlled more neighborhoods than suggested by the map, then, under the assumption that the gangs have a homogeneous effect on socioeconomic development in all the areas they control, that would underestimate the living conditions in the control group. That would lead to the difference in living conditions between the gang and non-gang areas being underestimated. Similarly, if the gangs actually controlled fewer neighborhoods than suggested by the map, then the living conditions in the treatment group would be overestimated, which would also lead to a smaller difference between the treatment and control groups. Thus, the estimates presented in Table 1 should be interpreted as the lower bound of the effect of gang control.

[34]This phenomenon has also been documented in gang neighborhoods in Los Angeles in the 1970s-1990s, where most of the violence took place right at the entrance to these neighborhoods (Artsy, 2018).

related homicides consistently take place right at the boundaries from the EDH map, we are able to confirm the validity of that map and to demonstrate the stability of those boundaries.

The fact that the boundaries of gang territory have remained stable since the arrival of the gangs has also allowed us to address the concern that over the years the government had managed to selectively regain control over the wealthiest gang-controlled neighborhoods, generating the observed discontinuities in socioeconomic development. If this had been the case, we would have observed more gang-related homicides outside of the current boundaries of gang territory in earlier years, which Appendix Subsection C.1 demonstrates to be not the case.

Selective migration: In-sample migration.—Another assumption that needs to be satisfied for our estimates to be interpreted as causal is that there has been no selective migration of individuals across the regression discontinuity threshold. Selective migration can affect our results in two ways. The first one is what we will refer to as in-sample migration: individuals moving from a neighborhood on one side of the boundary to an area on the other side of the boundary, while remaining in the municipality of San Salvador and, consequently, in our sample. This type of migration would be a direct threat to identification because it would imply that individuals can manipulate their treatment status. The second one is what we will refer to as out-of-sample migration: individuals moving from a location in San Salvador to a different municipality in El Salvador or abroad. This type of migration does not invalidate the identification strategy, but it changes the interpretation of the mechanism through which the gangs affect local socioeconomic conditions (i.e., that gang control makes wealthy educated individuals leave San Salvador).

In this subsection, we consider the direct threat to identification that comes from in-sample migration. We provide a detailed discussion of the extent of out-of-sample migration in Subsection 5.3, where we analyze the mechanisms behind the main results.

To show that in-sample migration is not driving our findings, we take advantage of the 2019 survey, where, among other questions, we asked individuals whether they have lived in the same neighborhood their entire life. 77% of respondents answered in the affirmative. This information allows us to compare the results for the full sample and for the subsample of respondents for whom we know the *ex-ante* treatment status (i.e., that they lived in the location before the arrival of the gangs). In the absence of in-sample migration, the two sets of results would be quite similar, whereas, if the results are determined by in-sample migration, the discontinuities would only appear in the full sample.

Notably, this exercise also allows us to determine that the results are not driven by selective

in-migration: wealthy and educated newcomers choosing to settle in non-gang parts of San Salvador. By restricting the sample to individuals who have lived in the same neighborhood their entire life, by definition, we exclude all newcomers.

When the sample is limited to individuals who have always lived in the same neighborhood, the results of the regression discontinuity analysis practically do not change. Figure 4 illustrates this fact by showing the two regression discontinuity plots for household income. The left-hand side of the figure presents the results for the full sample, the right-hand side—for the subsample of never-movers. The two plots are quite similar, suggesting that the results are not driven by selective in-sample migration. Table A5 in the Appendix presents the regression estimates for the socioeconomic characteristics from the 2019 survey, both for the full sample and for the sample of never-movers, and Figure A11 illustrates these results.[35]

Difference-in-differences analysis using nighttime light density.—We also demonstrate the absence of pre-trends in socioeconomic development between gang and non-gang areas. Specifically, to show that the two types of locations did not experience different rates of economic growth before the arrival of the gangs, we perform a difference-in-differences analysis using nighttime light density (or luminosity)—which recent studies have found to be a good proxy for development at the local level (Chen and Nordhaus, 2011; Henderson *et al.*, 2012)—as the outcome variable.[36] We exploit two sources of variation: the timing of the deportation of the gang leaders from the United States—which led to the emergence of the gangs in El Salvador—and the geographic differences in exposure to organised crime.[37] Our hypothesis is that prior to 1996—the year of the first wave of deportations from the United States—locations that would later have different levels of gang activity experienced similar rates of economic development. At the same time, after 1996, we expect to see higher rates of growth in areas with no gang presence. Further details and the exact

[35]In the 2007 census, individuals were also asked whether they have lived in the same municipality their entire life. Since individuals who answered in the affirmative could still have moved within the municipality, this question is less precise at determining the *ex-ante* treatment status of the respondents. However, coincidentally, the share of population that has always lived in San Salvador municipality is equal to 77%, the same number as the share of population that has always lived in the same neighborhood according to the 2019 survey. Thus, it appears that, in this context, individuals primarily move across municipalities and not within the same municipality. Under this assumption, we estimate Specification (1) for the variables from the 2007 census for the subsample individuals who have always lived in the same municipality. Appendix Table A6 presents the results, which are very similar to those presented in Table 1, confirming that in-sample migration is not likely to be driving the results.

[36]The additional benefit of using nighttime light density data is that, since they are collected via satellite from space, unlike survey data, they cannot be selectively under-reported or misreported.

[37]The nighttime light density data have the resolution of approximately 1km$\times$1km, which is not sufficiently precise to perform the analysis using the boundaries of gang neighborhoods in San Salvador. Instead, the analysis is performed for all of El Salvador, with gang presence being measured based on the availability of gang-related homicides. Further details are presented in Appendix B.

regression specifications are provided in Appendix B.

The results of the difference-in-differences analysis are summarized in Figure A10.[38] It shows that, before 1996, places with and without future gang presence experienced the same growth in nighttime light density, confirming the absence of pre-trends between the two areas. However, after the emergence of the gangs in 1996-1997, areas with gang presence experienced significantly lower luminosity growth.

4.4. Robustness checks

Excluding areas close to the boundary of gang territory.—Appendix Table A7 presents the results of "doughnut hole" regression discontinuity design in which we estimate Specification (1), excluding observations within 100 meters of the regression discontinuity cutoff.[39] This analysis serves the following three purposes. First, it demonstrates that our results are robust to potential inaccuracies in the location of the boundaries of gang territory and are not driven by outlier areas near the boundary. Second, given that most gang-related homicides take place close to the boundaries of gang territory because of people attempting to enter or leave those neighborhoods without permission, the "doughnut hole" regression discontinuity design allows us to verify that the results in Table 1 are not driven by high levels of violence close to the boundary. Third, this analysis addresses the potential concern that, in an attempt to prevent the gangs from expanding their territorial control, the government has been investing resources in non-gang areas close to the boundary.[40] The results in Appendix Table A7 are very similar to those in Table 1.

Controlling for 300×300 meter fixed effects.—A potential concern is that the results in Table 1 might be driven by the comparison of gang-controlled locations in one part of San Salvador to non-gang areas in a different part of the city. To ensure that the identifying variation comes from comparing neighboring census tracts, we perform the following analysis. We divide the map of San Salvador municipality into 300×300 meter grid cells and record the grid cell corresponding to each census tract.[41] On average, each grid cell contains 1.5 census tracts. We then estimate Specification (1), including fixed effects for each of the grid cells. Thus, we rely on the within-grid-cell variation in treatment status to measure the effect of gang control on socioeconomic development.

[38] The regression estimates can be found in Tables A2 and A3.

[39] The results are robust to the choice of alternate "doughnut hole" cutoff. For instance, the results are very similar if we exclude observations within 50 meters or 150 meters of the boundary of gang territory.

[40] We analyze this concern in more details in Subsections 5.1 and 5.5, where we show that local labor market conditions and public goods provision does not change at the boundary of gang territory.

[41] We use the coordinates of the census tracts' centroids to assign the census tracts to the grid cells.

Table A8 presents the results, which are very similar to those in Table 1.

Regression discontinuity using latitude and longitude.—We show that the results are robust to using a two-dimensional regression discontinuity design with latitude and longitude as the forcing variables. Specifically, we estimate Specification (1), replacing distance to the boundary of gang territory with latitude and longitude, normalized to have the mean of zero. The results are presented in Table A9 in the Appendix.

Excluding 10% of the top observations from non-gang areas.—We show that the results are not driven by a small number of wealthy individuals living outside of gang territory. In particular, we exclude 10% of the observations from non-gang areas that have the highest values of the first principal component of the dwelling, household, and individual characteristics.[42] As reported in Appendix Table A10, the estimates remain statistically significant.

Different bandwidth.—We also show that our findings are robust to alternative choices of bandwidth by presenting the regression discontinuity plots for larger and smaller distance bins than in the baseline specification. Figure A13 in the Appendix illustrates the results for the first principal components of the dwelling, household, and individual characteristics, using 60 meter distance bins; Figure A14 illustrates the same results using 20 meter bins.[43]

Under-reporting of wealth.—A potential concern is that residents of gang-controlled neighborhoods might be more likely to under-report their wealth compared to residents of non-gang areas (e.g., to evade taxation by the gangs). We address this concern in the following three ways, showing that the results are not driven by selective under-reporting of wealth.

First, as the census data on the dwelling characteristics were recorded by the enumerators based on what they observed and not self-reported by the respondents, the discontinuities in the dwelling characteristics cannot be determined by selective under-reporting of wealth.

Second, we consider a non-self-reported measure of individuals' wealth: rent paid for housing. Specifically, we analyze the data on the housing offers in various parts of San Salvador, which provides us with the landlords' assessment of individuals' ability to pay.[44] We then estimate Speci-

[42]To implement this analysis, we rank households and individuals according to the first principal components of the household and individual characteristics, respectively. We then exclude 10% of the observations with the highest values of the first principal component. When more than 10% of the observations had the values of the first principal component higher or equal to the value of the 90th percentile, we exclude a random subset of observations for which the first principal component is exactly equal to the 90th percentile (all observations with higher values are always excluded). The estimates do not depend on the subsample of observations that are excluded. In particular, we perform 1,000 iterations of this procedure and for each variable report the most conservative results, i.e., when they are least significant.

[43]For brevity, we only report the results for the first principal components of the dwelling, household, and individual characteristics. The results for the other variables from Table 1 are similar.

[44]The data were scraped from OLX (accessed on April 8, 2020). It should be noted that we cannot observe whether

fication (1) with monthly housing rent as the outcome variable, additionally controlling for observable housing characteristics (i.e., the number of rooms, the number of bathrooms, square meters, etc.). Table A11 and Figure A15 in the Appendix present the results. They suggest that housing rent is approximately $200 lower in gang-controlled locations, confirming the notion that residents of those areas are poorer than residents of non-gang neighborhoods.

Finally, in Appendix Section B, we validate the results of the regression discontinuity design by performing a difference-in-differences analysis using nighttime light density data, which are collected via satellite from space and cannot be under-reported. We show that, after 1996, areas that became exposed to gang activity experienced significantly lower growth in luminosity, confirming the notion that the gangs have had a negative effect on socioeconomic development.

Estimating the effects separately for MS-13 and 18th Street.—We show that MS-13 and 18th Street have had similar effects on socioeconomic development in the neighborhoods they control. In particular, we estimate Specification (1), replacing the dummy for gang territory with dummies for the areas controlled by MS-13 and for the areas controlled by 18th Street. The results are presented in Table A12 in the Appendix and are very similar for both gangs.

Excluding gang areas within 150 meters of the rival gang.—To show that the negative effects on socioeconomic development are present not only in areas where the two gangs, which have an adversarial relationship, are particularly close to each other, we estimate Specification (1), excluding gang-controlled neighborhoods that are located within 150 meters of the rival gang's territory.[45] The results are presented in Table A13 in the Appendix.

"Islands" of gang territory.—As shown in Figure 1, most gang-controlled neighborhoods are located close to each other in the east of the city. However, there are also smaller "islands" of gang territory in other parts of San Salvador. We check whether those "islands" have been affected in the same way as the main gang areas. Specifically, we estimate Specification (1), replacing the dummy for gang territory with dummies for the "islands" and for the rest of gang territory. The results are presented in Appendix Table A14 and suggest that both types of gangs territory are similarly affected.

Estimating the effects separately for men and women.—We verify that both male and female residents of gang territory have been affected by estimating Specification (1) for the individual char-

a particular property was rented out or not. However, after two months, the vast majority of the offers were no longer available. It should also be noted that some of the cheapest properties may be rented out on the informal market and not appear on OLX. If there are more such properties in gang-controlled neighborhoods, our estimates provide a lower bound on the actual effects of gang control.

[45]The results are robust to changing this cutoff.

acteristics from the 2007 census separately for women and men. The results are presented in Table A15 in the Appendix.

5. MECHANISMS

In this section, we explore the mechanisms behind the negative effects of gangs' territorial control on development outcomes. In particular, we provide novel evidence on how gang-imposed mobility restrictions affect individuals' labor market choices by preventing them from commuting to areas outside of gang territory, where the largest and best-paying firms are located. We also show that the differences in educational attainment between gang and non-gang areas can be explained by higher dropout rates in gang-controlled neighborhoods. Finally, we find that the regression discontinuity results cannot be explained by differences in crime (including homicides, extortion, and robberies), the composition of firms at the boundary of gang territory, public goods provision, or selective migration.

In Appendix Subsection C.4, we also show that the gaps in socioeconomic development between gang and non-gang areas cannot be explained by differences in the occupational structure, such as unemployment, informal employment, hours worked, and willingness to work.

5.1. Restrictions on mobility

The presence of mobility restrictions.—To document the presence of restrictions on individuals' mobility, we estimate Specification (1) for the mobility questions from the 2019 survey. Table 4 presents the results. The estimates in Column 1 suggest that the share of population working in gang-controlled neighborhoods dramatically increases by almost 50 percentage points (from 5.7% to 55.2%) at the boundary of gang territory. Residents of gang territory are also more likely to work in the same neighborhood where they live and are less likely to have been to places outside of San Salvador: the share of individuals who have ever been to the beach or visited Santa Ana department, which are both 30-60 kilometers away, discontinuously decreases at the boundary of gang territory.[46] Finally, residents of gang areas acknowledge that there are restrictions on their mobility, as evidenced by them being significantly less likely to say that there is freedom of movement

[46] In Appendix Table A16, we demonstrate that the results in Table 4 are not driven by the fact that poorer and less educated individuals have lower levels of mobility. In particular, for the questions in Columns 3-6 of Table 4, we show that the results are robust to controlling for individuals' income and education. We do not perform the same analysis for the questions in Columns 1 and 2 of Table 4 because the individuals' work location directly affects their income, meaning that those regressions would be affected by reverse causality.

in the location where they live.[47]

Figure 5 presents the regression discontinuity plots for the two most important variables in Table 4: the share of people working in gang territory and the share of people who think there is freedom of movement in the area where they live.

Labor market consequences.—The consequence of these mobility restrictions is that residents of gang neighborhoods often cannot work outside of gang territory, being forced to accept low-paying jobs in small firms because of their inability to commute to other parts of the city, where the largest firms are located.[48] To demonstrate these negative effects of restrictions on individuals' mobility, we compare the labor market outcomes for residents of gang areas who are able to work outside of gang territory and those who are not. Table 5 presents the results, showing that, while, on average, residents of gang-controlled neighborhoods earn less income and work in smaller firms than individuals from non-gang locations, these gaps are significantly smaller for residents of gang territory who are able to work outside gang areas.[49] In particular, we find that the latter are as likely to work in firms with 100 or more employees as individuals living outside of gang locations. They also have a 40% smaller gap in household income compared to other residents of gang territory.[50]

It should be noted that, since the fact of working outside of gang territory is not likely to be entirely random, the results from Table 5 should be interpreted with caution. For instance,

[47] This last result is likely to underestimate the share of residents of gang territory who experience mobility restrictions for two reasons. First, some of the respondents may have interpreted the question in the narrow sense of whether they are free to move within their neighborhood of residence (i.e., within gang territory), not as the ability to freely go to any part of the city. Second, the team that administered the survey reported that residents of gang areas were sometimes wary of admitting to experiencing restrictions on their mobility out of fear of retaliation from the gangs.

[48] This fact is confirmed by anecdotal evidence from the field. For instance, while we were conducting the survey in San Salvador, one of the respondents from a gang neighborhood told us how he used to have a good job at a gas station but had to give it up because the gas station was located close to the territory of a rival gang. The gang that controls his neighborhood told the man that he should find a different job or "face the consequences".

[49] The estimates in Table 5 present the direct effect of mobility restrictions on individuals' labor market outcomes. It should also be noted that the fact that some residents of gang territory are able to work outside of gang neighborhoods may potentially have positive spillover effects on other residents of gang territory. For instance, when some individuals manage to work outside of gang territory, the labor supply inside gang territory decreases, potentially increasing the wages of all individuals working in gang-controlled neighborhoods. It is beyond the scope of the paper to assess the importance of these spillover effects because we do not know the counterfactual labor market outcomes for the case when no residents of gang territory would be able to work in non-gang neighborhoods. However, in the presence of such spillover effects, the results in Table 5 would be the lower bound of the effect of mobility restrictions on individuals' labor market outcomes.

[50] Note that household income is defined at the level of the household, whereas the individuals' work locations are defined at the individual level. Thus, if multiple people in the household work outside of gang territory, the effect on income is likely to be larger. For instance, if two people in the household work in non-gang areas, the gap in income would be $2 \times 167.64/430 \approx 80\%$ smaller, which is close to the results for the probability of working in a firm with 100 or more employees. Another potential reason why working outside of gang territory does not fully explain the gap in earnings is that income today depends on past work experience, and residents of gang territory are less likely to have had good jobs in the past.

one potential concern is that if better-educated residents of gang-controlled neighborhoods are more likely to get permission to work in non-gang areas, that could result in an overestimation of the premium of working outside of gang territory. However, the data suggest that there is considerable variation in the probability of working outside of gang territory across education levels, which is consistent with the notion that luck plays an important role in determining whether a resident of gang territory is allowed to work in a non-gang location (e.g., gang leaders in certain neighborhoods may be less willing than others to enforce restrictions on mobility; individuals might find ways to circumvent the gangs' restrictions). Moreover, as shown in Table 5, the results are robust to controlling for individuals' level of education, suggesting that they are not driven by more educated residents of gang-controlled neighborhoods being more likely to work in non-gang locations.[51]

Another potential concern is that instead of reflecting the costs of restrictions on individuals' mobility, the results in Table 5 represent the unwillingness of large firms to hire residents of gang-controlled areas out of fear that they might be affiliated with the gangs. We address this concern in the following two ways. First, we note that, as shown in Column 6 of Table 4, residents of gang territory acknowledge that they do not have freedom of movement. Second, we exploit the fact that men are significantly more likely than women to be affiliated with the gangs. As a result, if the differences in employment outcomes between residents of gang and non-gang areas are driven by discrimination and not restrictions on mobility, then the gaps in labor market performance should be smaller for women living in gang-controlled neighborhoods than for men. The results in Appendix Table A17 show that this is not the case. Thus, even if some employers discriminate against job applicants from gang neighborhoods, that effect is not the main determinant of the differences in employment outcomes between gang and non-gang areas. Overall, our findings suggest that gang-imposed restrictions on mobility are a major factor affecting individuals' labor market outcomes.

Connection to local labor market conditions.—Importantly, the differences in labor market outcomes are not the product of differences in *local* labor market conditions across the boundary. To analyze this question, we use data from the 2005 economic census, which reported the location, revenue, costs, and profits of all (formal and informal) business establishments in El Salvador. Us-

[51] The results are also robust to including dummies for all the years of education. In all the specifications in Table 5, we also control for whether an individual is currently employed. In the survey, unemployed individuals were asked to describe their most recent work experience. Thus, some unemployed respondents said that their most recent job was in a gang-controlled neighborhood, while others previously worked outside of gang territory.

ing these data, we estimate Specification (1) to analyze whether there is a change in these variables at the boundary of gang territory. Columns 1-3 of Appendix Table A18 report the results, showing that the firms' profits, revenue, and costs are the same on both sides of the boundary. In Columns 4 and 5, we also demonstrate that the number of business establishments per square kilometer similarly does not change at the boundary of gang territory. This result is further verified in Columns 6-9, using data from Google Maps instead of the 2005 economic census.

How can the absence of a change in local labor market conditions be consistent with the result that residents of gang neighborhoods have significantly lower income than people living only 50 meters away but outside of gang territory? The answer lies in the fact that the largest and most profitable firms have chosen to locate themselves further away from gang-controlled areas. Thus, while the size and profitability of business establishments does not change at the boundary of gang territory, there is a gradual increase in these variables for firms further away from gang neighborhoods. For instance, if one considers business establishments located within 50 meters of the boundary, the average profits of firms from non-gang areas are 7.8% lower than the average profits of firms from gang territory (the difference is not statistically significant). However, business establishments that are located more than 500 meters outside of gang neighborhoods have profits that are 90.3% higher than those in gang areas close to the boundary.

This result has two important implications. First, it highlights the importance of gang-imposed restrictions on individuals' mobility. Since non-gang neighborhoods close to the boundary do not have large, well-paying firms, residents of those areas have higher incomes not because of the differences in local labor market conditions but because of their ability to commute to other parts of the city where the largest firms are located. Second, it suggests that non-gang areas close to the boundary might still be partially affected by the proximity of the gangs (Subsection 5.4 provides a detailed analysis of this result). In this case, the regression discontinuity estimates would represent the lower bound for the effects of gangs on development outcomes.

Why do mobility restrictions exist?—If mobility restrictions have such a negative effect on the incomes of people living in gang neighborhoods, why do the gangs continue to impose them? For instance, could the gangs benefit from loosening these restrictions and then "taxing" the additional income that residents of their territory would earn from working in other parts of the city? The main obstacle in the way of such a scheme is security. Without mobility restrictions, members of rival gangs and police informants would easily infiltrate gang neighborhoods, threatening the gangs' long-term survival.

The second obstacle is that the enforcement of such a tax system would require much more capacity than the existing one. The gangs would need to monitor individuals' income and make sure each person pays the amount they are due—things that even national governments of many countries are unable to enforce. Furthermore, if the residents of gang territory had full freedom of movement, they may not choose to live in gang neighborhoods, which would further complicate tax collection. In contrast, in the existing system, the gangs only need to monitor the boundaries of their territory and collect payments from individuals whom they allow to cross the boundary, a task that can be performed by junior gang members or collaborators.[52]

Finally, the enforcement of the boundaries of gang territory ensures that the gangs have not only a safe haven where they can hide but also a bridgehead from which they can conduct extortion raids into neighboring government-controlled areas. We provide a detailed discussion of this phenomenon in Subsection 5.4.

5.2. School dropout

While restrictions on individuals' mobility can account for a large part of the gap in labor market outcomes between gang and non-gang neighborhoods, they are less likely to be driving the differences in educational attainment. Instead, these differences are likely to be explained by higher dropout rates and lower participation in educational programs in gang-controlled neighborhoods due to recruitment by the gangs. To determine whether the gap in schooling can, indeed, be driven by higher dropout rates in gang territory, we perform the following analysis. We use administrative data from the 2005-2017 annual censuses of schools, in which the schools report the number of students that were enrolled at the beginning of the year and the number of students that dropped out without completing their grade. Using these data, we estimate Specification (1) with the outcome variable being the school's dropout rate, and the unit of observation—a school in a year.

Table 6 presents the results of the estimation. Column 1 shows that, on average, the annual dropout rate in schools from gang territory was 2 percentage points higher than in schools outside of gang territory. The magnitude of the effect is almost the same both before and after 2007 (Columns 2 and 3) and for male and female students (Columns 4 and 5).[53] Using the result from

[52]Notably, Salvadoran gangs are not the only ones to use restrictions on individuals' mobility as a tool of control and revenue extraction. For instance, the same techniques are used by gangs in Brazil and non-state armed actors in Colombia (Ibáñez *et al.*, 2019; Magaloni *et al.*, 2020a). Moreover, similar mobility restrictions existed in the past during feudalism and serfdom (Bloch, 2015; Dennison, 2011; Markevich and Zhuravskaya, 2018).

[53]Table A19 in the Appendix also presents the effect on the schools' average of the high school exit exam scores

Column 2 of Table 6 as the baseline (i.e., the difference in dropout rates before 2007), one can estimate that, during the period from 1997 to 2007, gang control resulted in a $2.1 \times 10 = 21$ percentage point gap in school completion between students from gang and non-gang areas. This estimate is fully consistent with the 14.6 percentage point difference in school completion for the entire population reported in Table 1.

It should be noted that, although school education is usually associated with children, during the period under consideration, gang control also affected the educational attainment of many adult Salvadorans. From 1980 to 1992, El Salvador was in a state of civil war. Therefore, during that period, a large part of the population was unable to get proper education: in 1992, only 31.4% of individuals in San Salvador had a high school degree (see Table 2). For this reason, it is not surprising that after the end of the civil war, the education of adults became an important priority for the government and was even explicitly mentioned in the Constitution, as well as in the General Law of Education (chapter VII, articles 28 to 33). In 1994-1997, the government launched the Program for Adult Literacy and Education, a policy designed to provide school-level education for the adult population. The program was very popular, and in 2000-2007 alone, 726,000 people (approximately 12% of El Salvador's population) enrolled in PAEBA (Libreros *et al.*, 2010). Comparing the levels of educational attainment in 1992 and 2007 in gang and non-gang areas (Figures A3 and A7 in the Appendix), one can see that the share of population with a high school degree increased throughout San Salvador, but it increased much more in areas outside of gang territory. In addition to being driven by higher dropout rates among school-age children, this difference likely reflects differential enrollment in PAEBA among adults in gang and non-gang neighborhoods. We are unable to test this hypothesis directly because the implementation of PAEBA was largely community-based and was not centrally administered by any government agency. For instance, approximately 64% of classes were held in private houses, the locations of which are unknown, making it impossible to compare enrollment in gang and non-gang areas (Libreros *et al.*, 2010). However, PAEBA was also partly implemented by the schools, which reported the completion rate of the program to the central government. We take advantage of this fact and use administrative data from the 2005-2017 annual school censuses to compare the dropout rates among adults in gang and non-gang areas. Column 6 of Table 6 presents the results, showing that adults from

(PAES) in math, natural sciences, social sciences, and Spanish language and literature. The results suggest that students in gang neighborhoods have lower test scores in all the subjects. Thus, not only do more students drop out of school in gang territory, but the remaining students also perform worse in class than their peers from non-gang areas, potentially increasing the probability that they decide not to pursue further education.

gang territory were significantly more likely to drop out of the program. Moreover, on average, the difference in the dropout rate between gang and non-gang neighborhoods was twice as large for adults than for school-age children, although the difference is not statistically significant.

Overall, the results presented in this subsection suggest that the differences in educational attainment between gang territory and non-gang areas are likely to be driven by differential rates of school completion in those locations. These results do not undermine the importance of the restrictions on individuals' mobility for labor market outcomes (as shown in Columns 3, 6, and 9 of Table 5, residents of gang neighborhoods have better labor market outcomes if they are able to work outside of gang territory even after controlling for the level of education), but they do indicate that even if those restrictions were to be eliminated, the gap in labor market outcomes would not fully disappear because of the differences in the levels of education.

5.3. Selective migration: Out-of-sample migration

In Subsection 4.3, we demonstrated that the results in Table 1 are not driven by selective in-sample migration: individuals moving to or from gang-controlled neighborhoods, while remaining in San Salvador municipality. Another type of selective migration that can potentially affect the interpretation of our results is out-of-sample migration: individuals moving from San Salvador to a different municipality or abroad. In particular, if rich, educated individuals who initially lived in gang-controlled neighborhoods were more likely to move out of San Salvador than poor and uneducated individuals from the same areas, it could imply that the results in Table 1 are partly determined by this change in the composition of the population. We analyze this mechanism in the following ways.

First, we calculate the rates of selective out-of-sample migration from gang-controlled neighborhoods that would be required to generate the discontinuities from Table 1. For each of the binary household-level characteristics, we define a household to be "rich" if it has that characteristic (e.g., a phone, a computer, etc.) and "poor" if it does not.[54] Similarly, for each of the individual-level characteristics, we define an individual to be "educated" if they have that characteristic (e.g., a high school degree, a university degree, etc.) and "uneducated" if they do not. We make the conservative assumption that outside of gang territory, the probability of moving out of San Salvador is the same for all individuals and that in gang neighborhoods, poor and uneducated individu-

[54]The only exception is the variable for not having a bathroom, which is defined in the opposite way.

als migrate out of sample with probability β.[55] Then, for a given β, we calculate the share of rich households and educated individuals from gang territory that needed to move out of San Salvador to generate the discontinuities for each of the outcome variables.[56] Appendix Table A20 presents the results of these calculations for β equal to 0%, 10%, and 20%. Even if we unrealistically assume $\beta = 0\%$ (i.e., that poor and uneducated individuals from gang areas do not have a chance to move out of San Salvador), on average, the rate of out-of-sample migration for rich, educated individuals would have to be as high as 51.7% to generate the discontinuities from Table 1. For higher values of β, this rate is even higher.

Can the rate of out-of-sample migration for rich individuals be that high? To address this question, we take advantage of the fact that, until the mid-2010s, international migration of entire families had been very rare.[57] International migration is expensive: e.g., the costs of migrating from El Salvador to the United States—the most popular destination among Salvadoran migrants—are approximately $12,500 (Kulish, 2018). In turn, the average monthly household income in gang territory is only $300. Thus, even to send one family member abroad, Salvadoran households have to save up for a very long time, and migration of entire families is incredibly rare. This fact allows us to estimate the rate of out-of-sample migration by considering whether a household has a family member who moved abroad in 1997-2007 (the 2007 census contains this information). In addition, by looking at the correlation between the probability of a family member moving abroad and the first principal component of the household characteristics, we are able to estimate the extent to which individuals from rich households were more likely to migrate out of San Salvador.

Appendix Table A21 presents the results of estimating Specification (1) for the probability of a household having a family member who moved abroad in 1997-2007. On average, only 6% of the households have a family member who moved abroad, and this rate does not change at the boundary of gang territory. We also find that rich households both inside and outside of gang territory are more likely to have a family member living abroad. However, the correlation between wealth and out-of-sample migration in gang and non-gang areas are not statistically different from one another. Moreover, although rich households are more likely to have a family member who

[55] If rich, educated individuals from non-gang areas are more likely to migrate out of sample, that would make the required rates of selective out-of-sample migration from gang territory even higher.

[56] In Appendix Subsection C.3, we provide more details on how the calculations were performed.

[57] For instance, according to United States Customs and Border Protection, in 2012, the number of apprehensions of individuals in family units constituted less than 3% of all apprehensions of Salvadoran citizens at the Southwest border of the United States. In previous years, that number was even smaller.

moved abroad, the magnitude of that effect is much smaller than the rates of selective out-of-sample migration from Appendix Table A20 that are required to generate the discontinuities. In gang territory, an increase in the first principal component of the household characteristics from zero to one (i.e., the difference between the poorest and richest household) increases the probability of the household having a family member move abroad by only 7.1%, whereas the estimates from Table A20 suggest that, even under the unrealistic assumption of $\beta = 0\%$, the rate of out-of-sample migration for rich households needs to be at least 51.7% to explain the discontinuities. Therefore, out-of-sample migration can account for no more than $100 \times 7.1/51.7 = 13.7$ percent of the effects in Table 1.[58,59]

Appendix Section C.2 provides a detailed discussion of the reasons preventing people from migrating out of gang-controlled neighborhoods in San Salvador, and the ways in which gangs track down and punish defectors.

5.4. Extortion and other violent crimes

Next, we consider whether lower socioeconomic development in gang areas can be explained by higher levels of extortion or other violent crimes in gang territory. To address this question, first, we use geocoded data from the 2015 survey of firms conducted by the Salvadoran Foundation for Economic and Social Development to analyze whether firms in different parts of San Salvador are differentially exposed to extortion and other types of gang activity. Specifically, we estimate Specification (1) for the probabilities that a firm has been extorted and that the firm has witnessed gang activity in the area where it is situated. Table 7 presents the results, showing that firms inside and outside of gang territory are equally likely to be extorted (Column 1) or witness

[58] 13.7% should be interpreted as the upper bound for the share of the results that can be explained by out-of-sample migration for the following reasons. First, the 7.1% number assumes that there is no selective out-of-sample migration outside of gang territory. If there is selective out-of-sample migration from non-gang areas, as suggested by the results in Table A21, then this number should be lower. Second, it is possible that some households with a family member abroad have increased their wealth because of that fact (e.g., because of receiving remittances). If that is the case, the results from Table A21 would overestimate the probability of individuals from rich households migrating out of sample. Finally, the 50% number required to generate the discontinuities in Table 1 is calculated under the assumption that poor individuals are unable to migrate out of sample at all. If poor individuals also have a chance of migrating out of sample, this number should be higher.

[59] We also perform a test in the spirit of McCrary (2008) to check whether, at the boundary of gang territory, there is a discontinuous change in population density for various groups of the population. If individuals from gang-controlled neighborhoods were more likely to move from San Salvador to a different municipality or abroad, we would expect to see a decrease in population density at the boundary of gang territory. The results in Table A22 demonstrate that there are no discontinuous changes in household and population density at the boundary of gang territory. We also find no heterogeneity by age and gender. Moreover, the signs of all the coefficients are positive (albeit not statistically significant), which is consistent with the notion that the gangs restrict individuals' mobility, making it difficult for them to change their place of residence.

gang activity (Column 2).

Second, we address the possibility that, although firms on each side of the boundary of gang territory have the same probability of being extorted, the amount of money that they have to pay to the gangs might be different. To analyze this question, we obtained confidential internal records on all the extortion payments that a large Salvadoran distribution firm, which operates in all parts of San Salvador municipality, has made to the gangs in 2012-2019. Column 3 of Table 7 presents the results of estimating Specification (1) for the size of the extortion payments, showing that they are the same in gang and non-gang areas.[60]

Third, we consider the possibility that, while firms on each side of the boundary of gang territory are equally extorted, individuals may be extorted more in gang-controlled neighborhoods. We use the data from our 2020 telephone survey in which we asked the respondents if they had ever had to pay extortion to the gangs and how much they had to pay. Columns 4 and 5 of Table 7 present the results of estimating Specification (1) for the probability that an individual has been extorted and for the amount of money paid in extortion, respectively. In both cases, there is no difference between gang and non-gang areas.

Finally, we analyze whether neighborhoods on both sides of the boundary of gang territory have similar levels of gang-related homicides and robberies. Columns 6-8 of Table 7 present the results of estimating Specification (1) for the number of gang-related homicides and robberies per square kilometer as the outcome variables, showing that there are no differences in these crimes across the boundary of gang territory.[61]

The results in Table 7 are not surprising and confirm the notion that both MS-13 and 18th Street operate not only in the areas they control but also in neighboring locations. Their territory is their "stronghold", a place where they do not need to hide and that, for this reason, needs to be protected from police informants and rival gang members. However, gang-controlled areas also serve as a bridgehead from which gang members and their collaborators—who are not subject to the same mobility restrictions as other people living in their territory, especially when it comes to extortion and other gang-related activities—can conduct regular raids into neighboring areas.[62]

[60] We have also verified that the frequency of these payments is the same across the boundary of gang territory, confirming the results from Column 1 of Table 7.

[61] The unit of observation is a 10 meter bin, denoting the distance to the boundaries of gang territory, separately for gang and non-gang areas. The results are robust to changing the size of the bins.

[62] Notably, for areas outside of gang territory, exposure to gang activities decreases with distance to the boundary of gang territory, suggesting that, because of security concerns, gang members prefer to conduct their business close to the neighborhoods they control, which allows them to quickly hide from the police in case of an emergency. This fact confirms the notion that the gangs' ability to extort individuals and businesses outside of their territory is largely determined by them being able to hide from the law in neighboring areas they control.

The gang only needs to send a messenger (often children, who cannot be arrested) to contact the individual or firm. The victims then have to comply with the extortion demands or risk being hurt or killed by the gang.

The results in Table 7 have two important implications. First, they demonstrate that, since the gangs operate both in areas they control and in neighboring non-gang areas, the results in Table 1 cannot be driven by extortion or other violent crimes. These results are fully consistent with those reported in Appendix Table A18, which show that the number of business establishments—as well as their revenue, costs, and profits—does not change at boundary of gang territory, confirming the notion that businesses in gang neighborhoods do not have higher costs or lower profits because of extortion or other gang activities.

The second implication is that, since the gangs are active both in the treatment and the control group, the regression discontinuity results in Table 1 should not be interpreted to represent the overall effects of gang presence. Instead, they should be interpreted to denote the effects of gangs' territorial control and accompanying restrictions on mobility, which is likely to be the lower bound for the gangs' negative effects on socioeconomic development. This latter conjecture is supported by the results in Appendix Table 3, where the locations of the boundaries are predicted based on the presence of major geographical barriers. In Appendix Table 3 the magnitudes of the regression estimates are significantly larger than in Table 1, which may reflect the fact that the geographical barriers prevent the gangs from conducting raids into neighboring government-controlled areas.

5.5. Public goods provision

Another potential determinant of lower socioeconomic development in gang neighborhoods is related to public goods provision. If neither the government nor the gangs are able and willing to provide public goods in those locations, it could have a significant impact on individuals' living conditions. To assess whether this mechanism is driving the results, we perform the following analysis. First, we use data from Google Maps on the geolocation of schools and hospitals to estimate Specification (1) using the number of schools and hospitals per square kilometer as the outcome variables.[63] Second, we use data from the 2019 survey, where individuals were asked to rate on a scale from 1 = "extremely unsatisfied" to 7 = "extremely satisfied" their satisfaction with

[63]Google Maps has the most reliable and up-to-date geocoded data on the schools, hospitals, and other establishments in San Salvador. Administrative records are not always up to date and sometimes do not have the correct geolocation of the observations (e.g., some of them are outside of El Salvador). However, if we use the data from administrative records, the results are very similar.

the availability and quality of health services, education centers, roads, and electricity service. Table 8 presents both sets of results, showing that there are no discontinuities in any of these variables.[64] In addition, as was presented in Table 2, we also find no differences in road density and in the share of urban territory. Thus, the low levels of socioeconomic development in gang areas are unlikely to be driven by differences in public goods provision.

The results in Table 8 can be explained by the fact that the government has been willing to invest in social, educational, and job training programs in gang neighborhoods, partly in order to uphold its legitimacy in the eyes of the local population (Zoethout, 2016) and partly because defunding these programs could have been costly for incumbent politicians, reducing their reelection prospects and potentially endangering their lives (Córdova, 2019).

We also analyze whether the gangs provide public goods and financial and security assistance to individuals living in their territory. Using data from the 2019 survey, we test this hypothesis by analyzing whether residents of gang neighborhoods are more likely to seek help from the gangs when they have a problem with public goods provision, a financial issue, or a security, civic, or legal dispute.[65] Appendix Table A23 presents the results, showing that respondents from gang areas are not more likely to seek help from the gangs than residents of non-gang neighborhoods. However, they are more likely not to seek help from anyone, possibly out of fear that the gangs might punish them for complaining about their problems.

6. Concluding remarks

In this paper, we exploit a natural experiment that took place in El Salvador in the 1990s when, after a shift in American immigration policy, many Salvadorans with criminal records were deported from the United States. We show that today, the gangs established by those individuals significantly limit socioeconomic development in El Salvador. Residents of gang territory have worse dwelling conditions, a lower probability of owning durables, and earn significantly less income than individuals living just 50 meters away but outside gang control. These differences did not exist before the arrival of the gang leaders from the United States.

We document a novel mechanism through which gangs affect economic development. For

[64] In the Appendix, Figure A16 illustrates the results for the number of schools and hospitals per square kilometer; Figure A17 visualizes the results for individuals' satisfaction with the availability and quality of public goods.

[65] The survey could not explicitly ask about the gangs because that could have potentially endangered both the enumerators and the respondents. Therefore, we use the term "informal leader of the community" as a proxy for the gangs. When conducting the pilot of the survey, we have verified that all the pilot respondents associated the term "informal leader of the community" with the gangs.

security reasons, the gangs created a system of borders to protect their territory from outsiders, limiting the mobility of the individuals living on their territory. As a result of these mobility restrictions, residents of gang-controlled areas are often induced to accept low-paying jobs in small firms because of their inability to work outside of gang territory. Similar problems are likely to exist in Colombia, Brazil, Honduras, Guatemala, the US and other countries where gangs, cartels, or other non-state armed actors control parts of the country.

Our results have broad policy implications. First, they highlight the magnitude of the effect of territorial control of non-state actors on socioeconomic development in developing countries, suggesting that improvements in the capacity of those states to recover their monopoly of violence can significantly improve economic growth. Second, our results emphasize the importance of freedom of movement for socioeconomic development. Notably, these findings are likely to be relevant not only to other situations where non-state actors limit individuals' mobility, but also to mobility across country borders. Finally, our findings inform about the consequences of deporting individuals with criminal records to a country with low state capacity.

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Figure 1: Gang territory in San Salvador

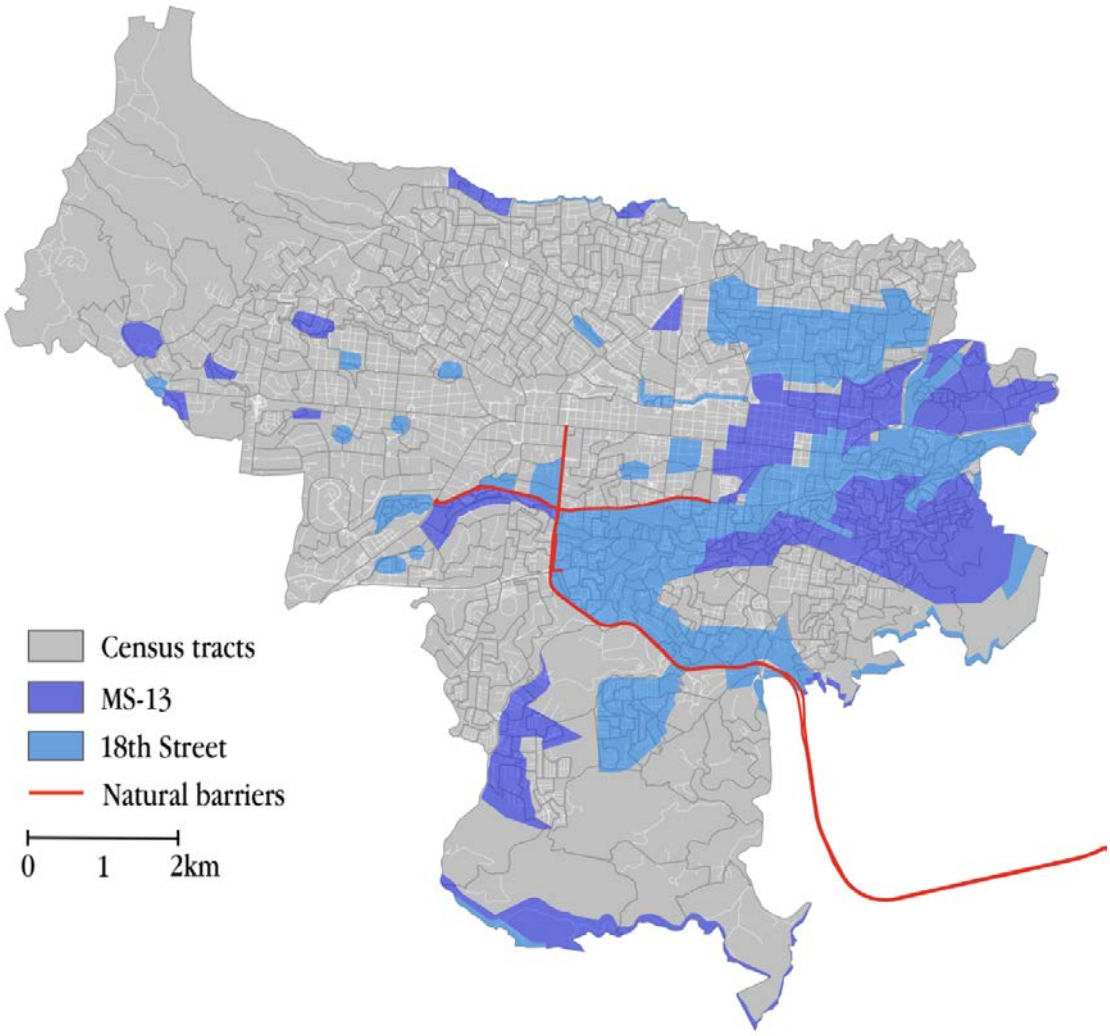
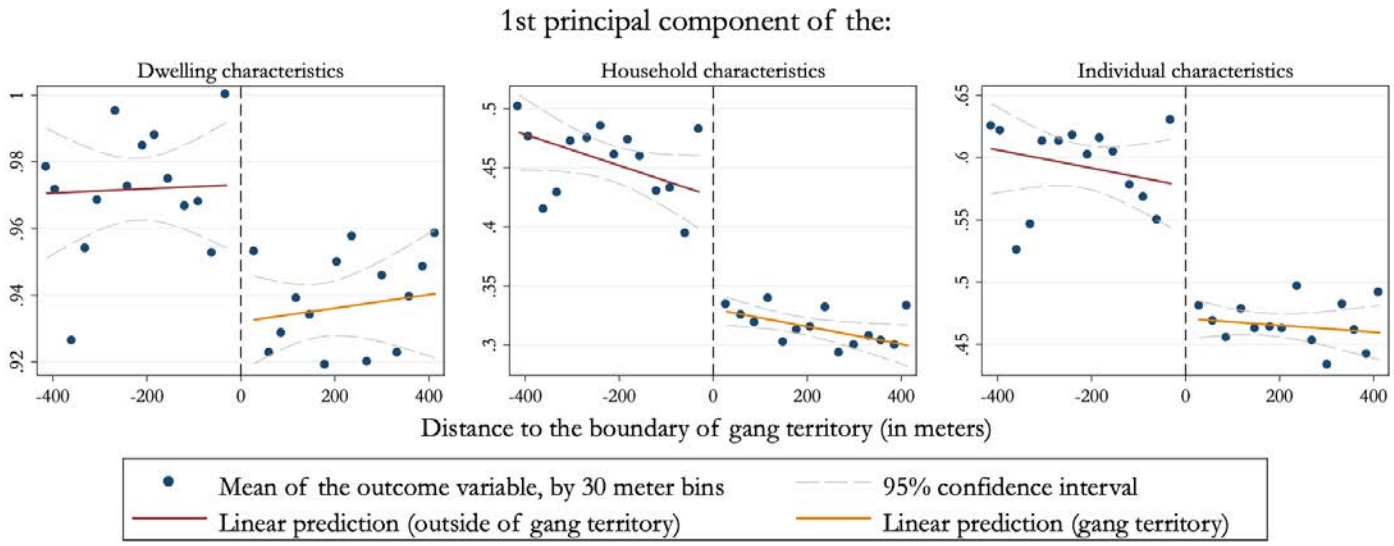
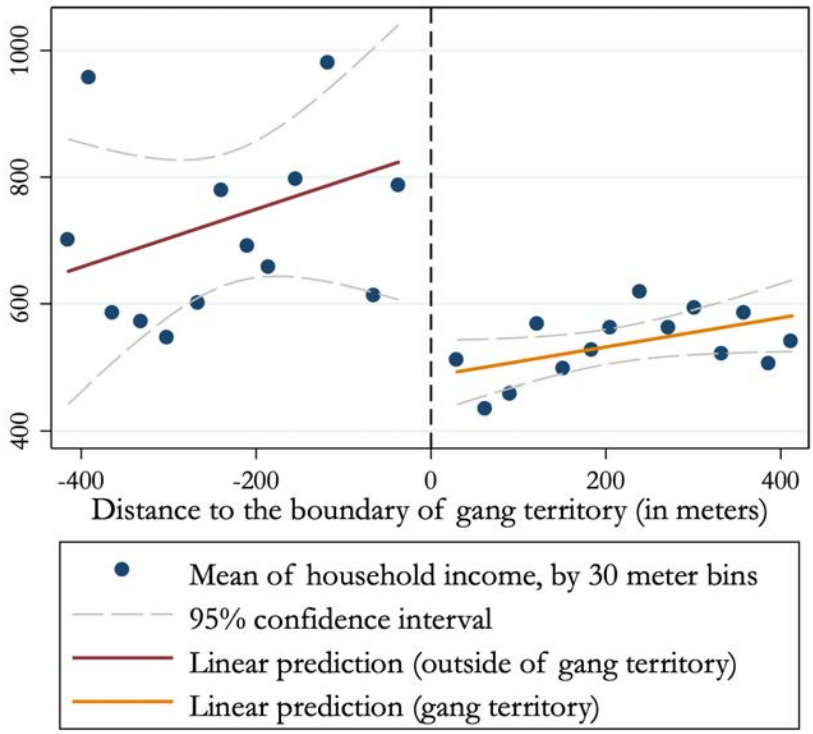


Figure 2: Socioeconomic conditions after 10 years of gang control



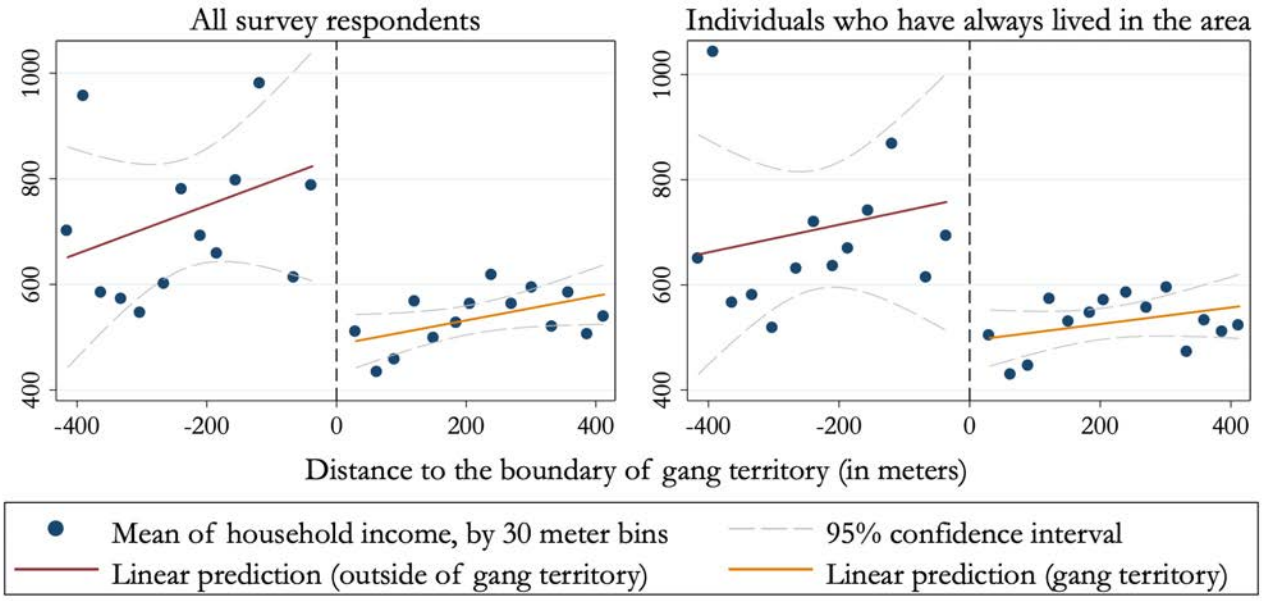
Note: By 2007, socioeconomic conditions had become significantly worse in gang-controlled areas. The figure illustrates the results for the 1st principal components of the dwelling, household, and individual characteristics from Table 1. All the variables come from the 2007 census. The unit of observation is a dwelling, a household, and an individual, depending on the specification. All the variables are normalized to vary between zero and one with higher values representing better outcomes. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure 3: Household income after 22 years of gang control



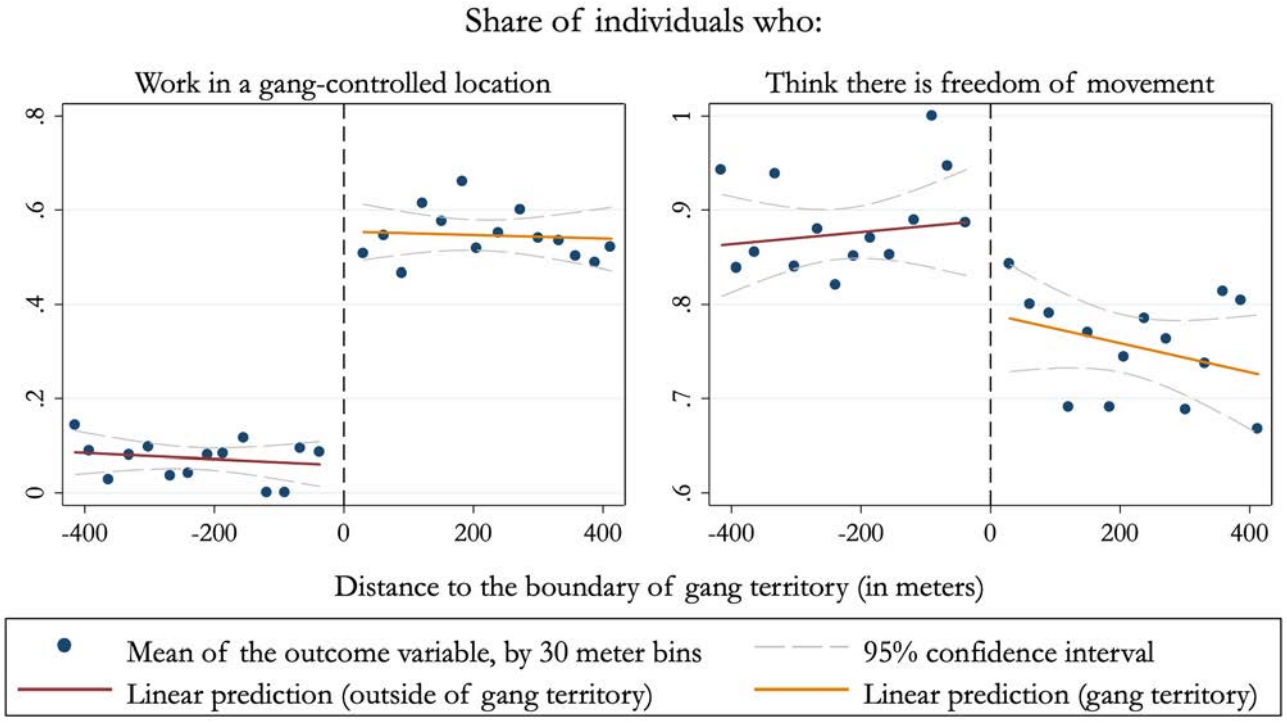
Note: Residents of gang territory earn $350 less income per month than individuals who do not live under gang control. The outcome variable comes from the 2019 survey. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure 4: In-sample migration is not driving the results



Note: The figure illustrates the results for household income from Table A5. The left-hand side of the figure presents the results for the full sample (Panel A of Table A5), the right-hand side—for the subsample of individuals who have lived in the same location all their life (Panel B of Table A5). The results are very similar. The vertical axis represents the average value of household income; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure 5: Gang control and mobility constraints



Note: The figure illustrates that residents of gang territory are more likely to work in a gang-controlled location and think that there are restrictions on the freedom of movement. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

TABLES

Table 1: Socioeconomic conditions after exposure to gang control

	Dwelling characteristics		Household characteristics			
	Walls made of concrete	Bare floor	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has internet
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory	-0.047 (0.015)*** [0.017]***	0.026 (0.010)** [0.010]**	-0.050 (0.021)** [0.027]*	-0.079 (0.021)*** [0.027]***	0.006 (0.002)*** [0.003]**	-0.131 (0.029)*** [0.038]***
Mean of dep. var.	0.932	0.028	0.941	0.108	0.005	0.180
Observations	72,252	60,820	62,316	62,316	62,316	59,917
	Household characteristics					
	Has a motorcycle	Has a car	Has a phone	Has a TV	Has a computer	Number of rooms
	(7)	(8)	(9)	(10)	(11)	(12)
Gang territory	-0.013 (0.006)** [0.005]**	-0.207 (0.046)*** [0.057]***	-0.135 (0.033)*** [0.040]***	-0.021 (0.006)*** [0.008]**	-0.173 (0.035)*** [0.045]***	-0.693 (0.195)*** [0.203]***
Mean of dep. var.	0.033	0.428	0.696	0.952	0.346	3.089
Observations	59,237	60,186	60,309	60,525	60,161	62,316
	Individual characteristics			1st principal component of the:		
	Can read and write	Has a high school degree	Has a university degree	Dwelling characteristics	Household characteristics	Individual characteristics
	(13)	(14)	(15)	(16)	(17)	(18)
Gang territory	-0.032 (0.007)*** [0.008]***	-0.153 (0.029)*** [0.034]***	-0.121 (0.026)*** [0.030]***	-0.036 (0.012)*** [0.013]***	-0.089 (0.019)*** [0.024]***	-0.101 (0.020)*** [0.023]***
Mean of dep. var.	0.928	0.448	0.207	0.952	0.377	0.521
Observations	208,913	203,423	203,423	60,820	58,434	203,423

Note: *** p<0.01, ** p<0.05, * p<0.1. After experiencing gang control, gang-controlled areas have worse socioeconomic conditions than neighboring areas that were not under the control of gangs. The table presents the results of estimating Specification (1) for the variables from the 2007 census. The unit of observation is a dwelling, household, or individual, depending on which characteristics are being considered. In the individual-level regressions, the sample consists of the entire population. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to gang territory (separately for each side of the boundary). Standard errors in brackets are adjusted to allow for spatial correlation within a 100 meter radius (Conley correction).

Table 2: Geographic and socioeconomic characteristics before the arrival of the gangs

	Neighborhood characteristics					
	Urban territory	Road density	Has access to the waterways	Elevation	Territory used for coffee production	Tree coverage
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory	-0.011	-0.522	0.018	0.506	0.009	-0.004
	(0.064)	(0.951)	(0.065)	(16.286)	(0.019)	(0.026)
	[0.053]	[1.843]	[0.095]	[17.354]	[0.023]	[0.026]
Mean of dep. var.	0.812	17.83	0.327	720.39	0.049	0.028
Observations	477	477	477	477	477	477
	Dwelling characteristics		Household characteristics			
	Walls made of concrete	Bare floor	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Shared bathroom
	(7)	(8)	(9)	(10)	(11)	(12)
Gang territory	-0.015	-0.003	-0.032	-0.036	-0.007	0.021
	(0.036)	(0.028)	(0.047)	(0.039)	(0.017)	(0.032)
	[0.035]	[0.030]	[0.046]	[0.030]	[0.013]	[0.029]
Mean of dep. var.	0.813	0.010	0.816	0.182	0.030	0.142
Observations	64,899	64,899	64,899	64,899	64,899	64,899
	Household characteristics					
	Has a motorcycle	Has a car	Has a phone	Has a TV	Has a blender	Number of rooms
	(13)	(14)	(15)	(16)	(17)	(18)
Gang territory	-0.004	-0.049	-0.030	0.009	0.014	-0.069
	(0.009)	(0.051)	(0.054)	(0.019)	(0.032)	(0.170)
	[0.007]	[0.043]	[0.049]	[0.019]	[0.034]	[0.172]
Mean of dep. var.	0.034	0.285	0.320	0.860	0.625	2.670
Observations	64,899	64,899	64,899	64,899	64,899	64,899
	Individual characteristics			1st principal component of the:		
	Can read and write	Has a high school degree	Has a university degree	Dwelling characteristics	Household characteristics	Individual characteristics
	(19)	(20)	(21)	(22)	(23)	(24)
Gang territory	-0.000	-0.014	-0.019	-0.005	-0.016	-0.013
	(0.011)	(0.028)	(0.017)	(0.031)	(0.030)	(0.018)
	[0.009]	[0.028]	[0.017]	[0.031]	[0.026]	[0.018]
Mean of dep. var.	0.904	0.314	0.112	0.863	0.525	0.380
Observations	234,749	227,281	227,281	64,899	64,899	227,281
	Number of incarcerations per km^2 prior to 1997:					
	All crimes	Homicide	Robbery	Sex crimes	Assault	Other violent crimes
	(25)	(26)	(27)	(28)	(29)	(30)
Gang territory	-2.096	1.464	-0.316	-1.648	0.315	-1.212
	(18.200)	(1.297)	(4.016)	(1.278)	(3.886)	(1.787)
Mean of dep. var.	114.60	4.670	22.64	6.588	20.86	9.711
Observations	86	86	86	86	86	86

Note: *** p<0.01, ** p<0.05, * p<0.1. Before the arrival of the gangs, locations on either side of the boundary of gang territory had similar geographic and socioeconomic characteristics. The table presents the results of estimating Specification (1) for the neighborhood chracteristics and the variables from the 1992 census. The unit of observation is a census tract, dwelling, household, or individual, depending on which characteristics are being considered. In the individual-level regressions, the sample consists of the entire population. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary). Standard errors in brackets are adjusted to allow for spatial correlation within a 100 meter radius (Conley correction). In Columns 25-30, the Conley standard errors are not reported because there the location of the observations is not defined (the unit of observation is a 10 meter bin, denoting the distance to the boundary of gang territory).

Table 3: Boundaries of gang territory from geographical barriers

	Dwelling characteristics		Household characteristics			
	Walls made of concrete	Bare floor	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has internet
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory	-0.055*	0.037***	-0.054***	-0.083*	0.005**	-0.109**
	(0.028)	(0.010)	(0.013)	(0.043)	(0.002)	(0.045)
Mean of dep. var.	0.945	0.021	0.969	0.064	0.003	0.124
Observations	10,047	8,418	8,684	8,684	8,684	8,260
	Household characteristics					
	Has a motorcycle	Has a car	Has a phone	Has a TV	Has a computer	Number of rooms
	(7)	(8)	(9)	(10)	(11)	(12)
Gang territory	-0.016***	-0.366***	-0.216***	-0.031*	-0.276***	-1.310**
	(0.005)	(0.069)	(0.043)	(0.016)	(0.065)	(0.486)
Mean of dep. var.	0.034	0.366	0.697	0.958	0.291	2.978
Observations	8,183	8,296	8,314	8,355	8,293	8,684
	Individual characteristics			1st principal component of the:		
	Can read and write	Has a high school degree	Has a university degree	Dwelling characteristics	Household characteristics	Individual characteristics
	(13)	(14)	(15)	(16)	(17)	(18)
Gang territory	-0.088**	-0.291***	-0.210***	-0.046**	-0.134***	-0.195***
	(0.038)	(0.044)	(0.048)	(0.020)	(0.029)	(0.028)
Mean of dep. var.	0.927	0.436	0.171	0.962	0.354	0.505
Observations	29,268	28,195	28,195	8,418	8,063	28,195

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1), using the locations of major roads and boulevards (geographical barriers) as the predicted boundaries of gang territory. All the variables come from the 2007 census. The unit of observation is a dwelling, household, or individual, depending on which characteristics are being considered. In the individual-level regressions, the sample consists of the entire population. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the predicted boundary of gang territory (separately for each side of the boundary).

Table 4: Gang control and restrictions on individuals' mobility

	Works in gang territory	Works in the same neighborhood where they live	Has been to Santa Ana department	Has been to the beach	Has always lived in this location	Freedom of movement where they live
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory	0.495	0.111	-0.277	-0.064	0.172	-0.097
	(0.039)***	(0.031)***	(0.043)***	(0.031)**	(0.045)***	(0.039)**
	[0.042]***	[0.050]**	[0.052]***	[0.032]**	[0.055]***	[0.039]**
Mean of dep. var.	0.334	0.302	0.495	0.872	0.772	0.811
Observations	1,738	2,071	2,314	2,314	2,314	2,314

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the mobility questions from the 2019 survey. Santa Ana is a neighboring department, which is approximately 60 kilometers away from San Salvador. The sea is approximately 30 kilometers away from San Salvador. The unit of observation is an individual. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary). Standard errors in brackets are adjusted to allow for spatial correlation within a 100 meter radius (Conley correction).

Table 5: Consequences of low labor mobility

	Household income			Works in a firm with $\geq$ 100 employees			Works in a firm with $\geq$ 200 employees		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lives in gang territory	-352.60	-429.99	-235.09	-0.123	-0.210	-0.105	-0.115	-0.187	-0.102
	(112.22)***	(127.82)***	(112.56)**	(0.019)***	(0.022)***	(0.023)***	(0.028)***	(0.025)***	(0.030)***
	[84.97]***	[98.80]***	[81.33]***	[0.042]***	[0.046]***	[0.041]***	[0.035]***	[0.038]***	[0.035]***
Lives in gang territory, works in non-gang territory		167.64	85.39		0.182	0.129		0.152	0.110
		(32.69)***	(30.23)***		(0.026)***	(0.025)***		(0.027)***	(0.026)***
		[37.08]***	[38.73]**		[0.025]***	[0.024]***		[0.024]***	[0.023]***
Has a high school degree			89.11			0.124			0.088
			(19.90)***			(0.021)***			(0.018)***
			[26.78]***			[0.020]***			[0.019]***
Has a university degree			445.46			0.148			0.132
			(76.96)***			(0.029)***			(0.027)***
			[62.62]***			[0.032]***			[0.030]***
Mean of dep. var.	625.00	634.70	638.90	0.169	0.169	0.170	0.133	0.132	0.132
Observations	2,314	1,738	1,707	2,071	1,738	1,707	2,071	1,738	1,707

Note: *** p<0.01, ** p<0.05, * p<0.1. The table shows that the discontinuity in income and firm size is significantly smaller or nonexistent for individuals living in gang territory but working outside of gang territory. All the variables come from the 2019 survey. For household income, the unit of observation is a household; for the other variables—an individual. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary, and a dummy for whether the individual is currently employed (in the survey, unemployed individuals were asked to describe their most recent work experience). Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory, separately for each side of the boundary. Standard errors in brackets are adjusted to allow for spatial correlation within a 100 meter radius (Conley correction).

Table 6: Gang control and dropout rates

Subsample:	Dropout rate					
	All obs.	Year $\leq$ 2007	Year $>$ 2007	Male	Female	All obs.
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory	0.019	0.021	0.018	0.021	0.019	
	(0.004)***	(0.008)**	(0.004)***	(0.006)***	(0.003)***	
	[0.007]***	[0.009]**	[0.007]**	[0.008]***	[0.006]***	
Gang territory $\times$ Standard program						0.019
						(0.004)***
						[0.007]***
Gang territory $\times$ Program for adults						0.038
						(0.018)**
						[0.017]**
Mean of dep. var.	0.020	0.021	0.019	0.023	0.016	0.020
Observations	3,199	684	2,515	3,088	3,186	3,377

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results for estimating Specification (1) for the dropout rates for schools in San Salvador. The data come from the annual census of schools. In Columns 1-5, the unit of observation is a school in a year. In these results, omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. In Column 6, the unit of observation is the type of program (standard or for adults) in a school in a year. In these results, omitted controls include a dummy for the program being for adults and linear trends in distance to the boundary of gang territory, separately for each type of program on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary). Standard errors in brackets are adjusted to allow for spatial correlation within a 100 meter radius (Conley correction).

Table 7: Extortion and violence

	Firm was extorted	Witnessed gang activity in area	Amount firm paid in extortion	Person was extorted	Amount person paid in extortion	Gang homicides (per km^2): All years	Gang homicides (per km^2): Year $\leq$2007	Robbery (per km^2)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Gang territory	-0.066	-0.036	0.261	0.017	-1.501	3.238	-0.101	1.867
	(0.065)	(0.061)	(2.022)	(0.036)	(7.028)	(2.537)	(1.114)	(8.415)
	[0.074]	[0.068]	[2.588]	[0.035]	[6.449]			
Observations	512	493	4,120	1,957	252	86	86	86
Mean dep. var	0.246	0.738	6.226	0.200	8.447	9.241	3.348	26.18

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for extortion and other gang-related violent crimes. In Columns 1-2, the unit of observation is a firm in the 2015 survey of firms conducted by FUSADES. In Column 3, the unit of observation is an instance when a firm had to make an extortion payment to the gang. These data come from confidential internal records of one of the larger firms in El Salvador. In Columns 4-5, the unit of observation is an individual in our own 2020 survey. In Columns 6-8, the unit of observation is a 10 meter bin, denoting the distance to the boundary of gang territory, weighted by the size of the area of the distance bins. These data come from official police records. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary). Standard errors in brackets are adjusted to allow for spatial correlation within a 100 meter radius (Conley correction). In Columns 6-8, the Conley standard errors are not reported because there the location of the observations is not defined (the unit of observation is a 10 meter bin, denoting the distance to the boundary of gang territory).

Table 8: Public goods provision in gang-controlled locations

	Number per km^2:		On a scale from 1 to 7, satisfaction with the availability and quality of:			
	Schools	Hospitals	Health services	Education centers	Roads	Electricity service
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory	0.325	-0.271	0.173	-0.019	0.299	-0.083
	(1.689)	(0.692)	(0.172)	(0.173)	(0.338)	(0.125)
			[0.189]	[0.170]	[0.302]	[0.098]
Mean of dep. var.	5.786	1.805	4.080	4.696	4.263	5.873
Observations	86	86	2,314	2,314	2,314	2,314

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results for estimating Specification (1) for the variables related to public goods provision. The questions about the satisfaction with the availability and quality of public goods come from the 2019 survey. For those variables, the unit of observation is an individual. The data on the number of schools and hospitals come from Google Maps. For those variables, the unit of observation is a 10 meter bin, denoting the distance to the boundary of gang territory, separately for each side of the boundary. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary). Standard errors in brackets are adjusted to allow for spatial correlation within a 100 meter radius (Conley correction). In Columns 1-2, the Conley standard errors are not reported because there the location of the observations is not defined (the unit of observation is a 10 meter bin, denoting the distance to the boundary of gang territory).

ONLINE APPENDIX

A. DATA

A.1. Additional data sources

Urban territory.—The data on urban density come from New York University's Atlas of Urban Expansion. The raster map presents the urban areas in the Greater San Salvador region in 1999.[66] We transform the data into a binary raster, equal to one when the location is classified as urban. Then, for each of the census tracts from the 2007 census, we calculate the share of census tracts' territory that is urban.

Waterways.—The map of the waterways in El Salvador comes from the Humanitarian OpenStreetMap Team.[67] Then, for each of the census tracts from the 2007 census, we created a dummy variable for whether the census tract contains a part of the waterway.

Road density.—The map of the roads in El Salvador comes from the Humanitarian OpenStreetMap Team and reflects the roads that existed in the country in March 2020.[68] We then transform the feature-based map into a binary raster file with the resolution of 1 meter$\times$1 meter, where we replace the lines for roads with grid cells equal to one. After that, for each of the census tracts from the 2007 census, we calculate road density, measured in kilometers per square kilometer.

Elevation.—The data on elevation at the resolution of 3 arc seconds (approximately 90 meters) come from the CGIAR-Consortium for Spatial Information (CGIAR-CSI).[69] For each of the census tracts from the 2007 census, we calculate the average elevation inside the census tract.

Territory used for coffee production—The map of land use in 1998 (including coffee production) comes from the Ministry of Environment and Natural Resources (*Ministerio de Medio Ambiente y Recursos Naturales*, MARN). We convert the feature-based map into a binary raster, equal to one for areas that are used for coffee production. Then, for each of the census tracts from the 2007 census, we calculate the share of census tracts' territory that is used for coffee production.

Tree coverage.—The data on tree coverage in 2000 come from Global Forest Watch.[70] The

[66]The San Salvador profile can be accessed here: Atlas of Urban Expansion: San Salvador (accessed on May 4, 2020).

[67]The map of the waterways in El Salvador can be accessed here: Humanitarian Data Exchange: El Salvador Waterways (accessed on May 4, 2020).

[68]The map of the roads in El Salvador can be accessed here: Humanitarian Data Exchange: El Salvador Roads (accessed on May 4, 2020).

[69]The elevation map for El Salvador can be accessed here: CGIAR-CSI (accessed on May 4, 2020).

[70]The data on tree coverage for El Salvador can be accessed here: Global Forest Watch (accessed on May 4, 2020).

raster file presents the share of territory covered by trees in each 30 meter×30 meter grid cell. For each of the census tracts from the 2007 census, we calculate the average level of tree coverage inside of the census tract.

High school exam scores.—The data on the schools' average high school exit exam scores (*Prueba de Aprendizaje y Aptitudes para Egresados de Educación Media*, PAES) come from the Ministry of Education. PAES results are reported for math, natural sciences, social sciences, and Spanish language and literature. The data cover the period from 1999 to 2017, but exclude the results for 2002-2004 because in those year the Ministry of Education applied a non-disclosed curve to the test scores, preventing comparison with the other years.

2020 survey.—In 2020, we conducted a survey of 1,957 individuals in San Salvador to evaluate the extent of gang-related extortion in gang and non-gang areas. The survey followed the same procedure as the 2019 survey, except that it was conducted over the telephone. The main reason for conducting the survey over the telephone is that, in in-person interviews, extortion-related questions could have potentially endangered the enumerators. At the beginning of the survey, the enumerators asked the respondents for their address, and the survey proceeded if the address was in one of the census segments randomly chosen in the sampling procedure.

2005 economic census.—The microdata for the 2005 economic census was provided by DIGESTYC.[71] After creating a registry of all formal and informal firms in the country, DIGESTYC took a random sample of all the firms to ask a long-form questionnaire on income sources, production and remuneration costs, the year the firm was established, etc. From these questions, DIGESTYC calculated the firms' revenue and costs. In total, the registry includes 179,817 firms across the country, while the long-form questionnaire covers 46,864 firms (26%). In the analysis, we focus on the long-form questionnaire firms based in San Salvador (6,120 firms).

Locations of schools, hospitals, and other establishments.—The data on the locations of schools, hospitals, and other establishments in San Salvador come from Google Maps.[72] In August 2019, we scraped the data from Google Maps to identify all the establishments in San Salvador. In total, we obtained a dataset with 7,732 establishments. For each observation, Google provides a classification of the type of establishment (e.g., school, hospital, pharmacy, etc.).

Housing rent.—To obtain information on housing rent, in August-September 2018, we scraped

[71] Although the census was carried out in 2005, the reference year for all the questions was 2004.

[72] We use the data on the locations of schools and hospitals from Google Maps instead of government records. The primary reason is the accuracy of the data. For instance, in the shapefile the government has provided to us, some of the schools are located outside of El Salvador. However, if we use the data from government records, the results are qualatively very similar.

the data from the most popular website for rent listings in El Salvador, OLX.[73] We focused on non-commercial listings in which the entire apartment was being rented out (i.e., not a room in the apartment). The listings included the data on the latitude and longitude of the location, the rent requested by the landlord, as well as information about the apartment such as the number of bedrooms, the number of bathrooms, the number of square meters, and whether the apartment is being rented out by an agency. In total, the dataset contains 1,537 observations.

It should be noted that we cannot observe whether a particular apartment was rented out or not. However, after two months, the vast majority of offers were no longer available.

It should also be noted that, on average, the properties listed on OLX are larger and more expensive than the overall pool of properties in San Salvador. In particular, many of the cheapest properties may be rented out on the informal market and are not listed online. If there are more such properties in gang-controlled neighborhoods, our estimates would provide a lower bound on the actual drop in housing rent at the boundary of gang territory.

Nighttime light density.—Annual data on nighttime light density (or luminosity) come from the Defense Meteorological Satellite Program-Operational Linescan System (DMSP-OLS) and spans the period from 1992 to 2013.[74] In particular, we use the DMSP-OLS data, representing the average stable lights from cities, towns, and other sites with persistent lighting. The data are provided by the National Centers for Environmental Information (NCEI). If for a particular year, the data were available from more than one satellite, we take the average of the two.

Notably, the resolution of the data on nighttime light density is 30 arc seconds$\times$30 arc seconds (i.e., approximately 1 kilometer$\times$1 kilometer). Therefore, the data are not sufficiently precise to be used in the regression discontinuity design.

Gang leaders' municipalities of birth.—The data on the gang leaders' municipalities of birth come from *El Faro*, an investigative newspaper. We use the data from their investigative reports, focusing on the gang leaders who were deported from the United States and had been later convicted for committing crimes in El Salvador. Overall, the sample consists of 33 gang leaders both from MS-13 and 18th Street. We then manually match the names of the gang leaders and the crimes they commited to the criminal records from the Ministry of Justice and Public Security of El Salvador, which contain information on the offendent's municipality of birth.

[73] The Salvadoran version of the website can be accessed here: OLX.
[74] The data and a detailed description of it are available here: DMSP-OLS (accessed on May 4, 2020).

A.2. Further details about the primary data sources

2019 survey.—For the 2019 survey, the following sampling procedure was applied. Given the uncertainty about their treatment status, census tracts within 15 meters of the boundary of gang territory were excluded from the analysis. Then, separately for places inside and outside of gang territory, we split the census tracts into 30 meter bins, denoting the distance to the boundary (i.e., 15-44 meters to the boundary, etc.). After that we randomly selected 10 census tracts from each bin and surveyed 8-10 people in each of them.[75] If there were fewer that 10 census tracts in that bin, we surveyed individuals in all the census tracts that were available. In total, the survey includes 2,314 respondents.

To ensure the safety of the enumerators, if the survey team was denied entry into some of the gang-controlled neighborhoods, those census tracts were replaced by other ones from the same bin. If it was not possible to interview 10 individuals in a census tract (e.g., because after repeated attempts nobody answered the door), additional people were interviewed in other census tracts in the same bin.

Gang boundaries.—The map of gang-controlled neighborhoods that we use in this study is based on data from 2015. To the best of our knowledge, maps of gang-controlled areas for earlier years are nonexistent. However, according to multiple sources in the police department as well as conversations with the local population, the boundaries of gang territory in San Salvador have remained stable since the late 1990s and early 2000s when the police managed to prevent the gangs from expanding their influence over new territories. This stability of the boundaries is consistent with the fact that, while the police managed to stop the expansion of the gangs' influence, it is still unable to regain control over those locations. If changes to the boundaries do occur, it tends to be a product of turf wars (i.e., MS-13 and 18th Street taking over each other's territory); not because of the state regaining control over gang territories or the other way round.

The data on the gang-controlled neighborhoods in San Salvador come from EDH and are presented in Figure 1. However, to accurately calculate distance to the boundary of gang territory, we also complement these data with confidential maps from the police on the gang-controlled neighborhoods outside of San Salvador municipality. Since the regression discontinuity design focuses on the census tracts inside of San Salvador, this never affects the treatment status of the census tract (i.e., whether or not it is located inside of gang territory). However,

[75] In areas within 250 meters of the boundary, we surveyed 10 individuals per census tract. In locations further away from the boundary, we surveyed 8 individuals per census tract.

for the locations outside of gang territory, it does sometimes affect the distance from them to the boundary of gang territory (i.e., if that location is closer to a gang-controlled location outside of San Salvador). It should be noted that, even with the extended map of gang territory, we are unable to perform the regression discontinuity design outside of San Salvador because the map additionally includes only a small number of locations in the Greater San Salvador area.

1992 and 2007 censal cartography.—It should be noted that the boundaries of the census tracts in the 1992 and 2007 censuses were not the same. Therefore, we are not able to perform a difference-in-differences analysis at the level of the census tracts. However, in both cases, the size of the census tracts was quite similar, allowing us to accurately measure the distance from the census tract to the boundary of gang territory. Thus, the distance between a particular location and the boundary of gang territory is very similar, regardless of whether we use the 2007 or 1992 census tracts.

It should also be noted that, although DIGESTYC digitized a map the 1992 census tracts, it did not fully finish that work. Specifically, the 1992 map does not have the boundaries of 18.9% of the census tracts in the North-West of San Salvador. However, the vast majority of those neighborhoods are located more than 420 meters away from gang territory and, therefore, would not be included in the analysis in any case. In particular, nearly all of gang territory (except for a few small "islands") and the neighborhoods right next to it are included in the 1992 map. Thus, it is highly unlikely that our estimates would change if all the census tracts were included.[76]

B. Difference-in-differences analysis

In this section of the Appendix, we use data for all of El Salvador to perform a difference-in-differences analysis, comparing the evolution of nighttime light density in areas that were more and less exposed to gang activity after 1996. This analysis complements the findings from the regression discontinuity design in the following ways. First, it allows us to show that gangs have affected socioeconomic development not only in San Salvador but also in other part parts of El Salvador. Second, since the data on nighttime light density are available for all the years from 1992 to 2013, we are able to confirm that the divergence in the rates of luminosity growth occurred right after the gang members were deported from the United States to El Salvador.

[76]DIGESTYC also told us that the work on digitizing the map of the census tracts had to stop because of the lack of funding and that there was no specific reason why some census tracts were digitized and some were not.

In particular, between 1992 and 1996, locations that would later have different levels of gang presence experienced the same growth in luminosity. Finally, since the data on nighttime light density are collected via satellite from space, unlike survey data, these data cannot be selectively under-reported or misreported (e.g., if individuals want to evade taxation by the gangs).[77]

B.1. Empirical strategy

We perform a difference-in-differences analysis that exploits two sources of variation: the timing of the deportation of the gang members from the United States—which led to the emergence of gangs in El Salvador—and the geographic differences in exposure to organized crime. Our hypothesis is that prior to 1996—the year when the first wave of deportations from the United States took place—locations that would later have different levels of gang activity experienced similar rates of economic development. At the same time, after 1996, we expect to see higher rates of growth in areas with low levels of organized crime.

Unlike for San Salvador, at the national level, a map of gang-controlled areas is not available. Instead, we proxy exposure to gang activity at the national level by the presence of homicides committed by the gangs.[78] Specifically, we use geocoded data for the exact locations of the gang-related homicides in 2003-2004, the earliest years for which the data are available. We then divide the map of El Salvador into grid squares of approximately 5 by 5 kilometers and calculate the distance from each grid square to the nearest homicide.[79] A grid cell is assumed to have gang presence if a person was killed by a gang member within the boundaries of that cell.

This definition of gang presence is different from the one used in the regression discontinuity design. In the latter, we use the term "gang territory" to refer to locations where the gangs have territorial control over the area. In the difference-in-difference analysis, we, instead, use the term "gang presence" to refer to larger locations (i.e., grid squares or municipalities) where gangs are known to be active. This second definition is strictly broader than the first one because both MS-13 and 18th Street are active in parts of the country that they do not control. For instance, in Table 7, we document that in San Salvador, the gangs are active not only in their territory but also in neighboring non-gang areas.

[77] It should be noted that the resolution of the nighttime light density data is not sufficiently fine for us to be able to use the maps of gang-controlled neighborhoods in San Salvador and perform a spatial regression discontinuity design with nighttime light density as the outcome variable.

[78] Both MS-13 and 18th Street rely on violence not only when fighting for territorial control but also to get extortion payments and enforce contracts, making homicides inherent to most types of gang activity.

[79] The exact size of the grid squares is 0.045 by 0.045 decimal degrees. The results are robust to using grid squares of a different size. To be consistent with the regression discontinuity design, we measure distance in tens of meters.

Thus, the difference-in-differences estimates should be interpreted as documenting the difference between areas with no gang presence and places with at least some gang presence, whereas the regression discontinuity estimates present the difference between neighborhoods with gang territorial control and locations without gang territorial control but some gang presence. Consequently, the mechanisms behind the difference-in-differences results may also be different from those we document in Section 5. For instance, while in Section 5 we show that extortion and other violent crimes are not driving the gaps in living standards in San Salvador, it is plausible that gang-related crimes do play a role in the difference-in-differences analysis.[80]

The outcome variable of interest is nighttime light density (or luminosity) which recent studies have found to be a good proxy for development at the local level (Chen and Nordhaus, 2011; Henderson *et al.*, 2012). In particular, for each of the grid cells, we calculate the average level of luminosity in each of the years from 1992 to 2013. Figure A18 provides a visualization of nighttime light density in 1997, the grid cells, and the locations of the gang-related homicides from 2003-2004.

We then estimate the following event study model (Specification 3) to measure the effect of gang presence on socioeconomic development.

$$luminosity_{i,t} = g_i + \gamma_t + \mathbf{\Theta}'_t \, gang\ presence_i + \varepsilon_{i,t}. \tag{3}$$

luminosity represents nighttime light density in grid square i at time t. The data are in percentage terms, normalized to be equal to 100 percent both in areas with and without gang presence in 1995—the year before the change in the United States immigration policy. *gang presence* is a dummy for whether grid square i has had a homicide committed by the gangs in 2003-2004; g_i and γ_t represent grid square and year fixed effects, respectively. Standard errors are clustered by grid square. The coefficients of interest are $\mathbf{\Theta}'_t$, which represent the differences in luminosity growth between locations with and without gang presence.

We also measure the average effect of exposure to gang activity on nighttime light density, by estimating the following model (Specification 4).

$$luminosity_{i,t} = g_i + \gamma_t + \mathbf{\Gamma}_i \, t + \beta \, gang\ presence_i \times \mathbb{1}\{Year > 1997\}_t + \varepsilon_{i,t}. \tag{4}$$

The main threat to identification is that, as shown in Figure A18, the gangs were primarily

[80] Given the difference in definitions, the difference-in-differences estimates may suggest that the effect of gang presence is larger or smaller than the regression discontinuity estimates.

attracted to large urban areas, which were already well illuminated and, hence, had less capacity for growth in nighttime light density. Moreover, Figure A19 demonstrates that *all* locations that in 1995 had luminosity above a certain threshold ended up being exposed to gang activity. To address this concern, in the main specification, we limit the sample of grid cells to those that had below-average nighttime light density in 1995, the year before the change in the United States immigration policy was announced.[81]

In addition, to address the remaining concerns about the identification, we exploit the fact that, after being deported, many gang members who were born in El Salvador returned to their municipality of birth (Sviatschi, 2022b). Thus, we use the birth locations of known gang leaders as an instrumental variable for whether the municipality became exposed to gang activity.[82] In particular, we estimate Specification (4) at the level of the municipalities instead of the grid cells, using the following equation as the first stage to predict gang presence after 1997.

$$\textit{gang presence}_i \times \mathbb{1}\{Year > 1997\}_t = g_i + \gamma_t + \Gamma_i\, t + \varphi\, \textit{birth location}_i \times \mathbb{1}\{Year > 1997\}_t + \varepsilon_{i,t}, \quad (5)$$

where *birth location* is a dummy for whether one of the gang leaders was born in this municipality.[83] The assumption behind this approach is that municipalities where a gang leader was born started experiencing lower rates of luminosity growth after 1997 only because of having a higher probability of being exposed to gang activity.

B.2. Difference-in-differences: Results

Figure A10 presents the results of estimating the event study model from Specification (3).[84] It shows that before 1996 locations that became exposed to gang activity had the same growth in nighttime light density as places with no gang presence. This result is particularly important because it complements the findings from the regression discontinuity design, suggesting that between 1992 and 1996 areas with and without gang presence did not have differential rates of economic growth. However, after the gang members were deported from the United States to El Salvador, the grid cells with gang activity experienced significantly lower luminosity

[81] When high-luminosity areas are not excluded, as expected, the no pre-trends assumption does not hold: well illuminated locations were already experiencing lower growth in luminosity before the arrival of the gangs.

[82] The data are only available at the level of the municipality; the precise addresses of birth are not available.

[83] At the municipality level, the data on gang-related homicides are also available for 2000. Therefore, in addition to using the data for 2003-2004 (i.e., like in the grid-level analysis), we define a municipality to have gang presence if it had a gang-related homicide in 2000. The results are robust to using data only for 2003-2004.

[84] The regression coefficients are reported in Table A3 in the Appendix, which also replicates the results of the event study at the municipality level.

growth.

The magnitude of the effect is quite large. By 2010, thirteen years after the deportations, areas with high gang presence had experienced nearly 120 percentage points lower growth in nighttime light density than places with low gang presence. According to Henderson *et al.* (2012), a one percentage point change in luminosity corresponds to a 0.28 percentage point change in GDP. Thus, in 1998-2010, areas with low gang activity had approximately $120 \times 0.28 =$ 33.6 percentage points higher growth in GDP than areas with gang presence.

Table A2 presents the results of estimating Specification (4), confirming that after 1996 areas with gang presence experienced lower growth in nighttime light density. It also presents the IV estimates, where exposure to gang activity after 1997 is predicted using a dummy variable for whether one of the gang leaders was born in that municipality, i.e., Specification (5). The first stage coefficients are reported in the lower part of the table, and, as demonstrated by the F-statistic, the instrumental variable accurately predicts exposure to gang activity after 1996. Notably, the results of the IV analysis are very similar to those presented in the OLS regressions, suggesting that the OLS results are not likely to be driven by omitted variable bias.

Overall, the results of the difference-in-differences analysis confirm the findings of the regression discontinuity design, showing that areas with gang presence experienced lower rates of economic growth after 1996. They also confirm the notion that this divergence took place right after the gang members were deported from the United States to El Salvador.

C. Additional information and robustness checks

C.1. Stability of the boundaries of gang territory

To the best of our knowledge, the boundaries of gang territory have remained stable throughout the sample period. In particular, we contacted the PNC, inquiring about this issue, and multiple PNC officials confirmed that the boundaries of gang territory had had no significant changes since they were initially formed in the late 1990s and early 2000s. This information has also been confirmed by informal conversations with residents of San Salvador.

To provide additional evidence that the boundaries of gang territory did not change in time, we take advantage of the following fact. As described in Subsection 2.4, both MS-13 and 18th Street consider outsiders a threat to their security. Thus, a disproportionate number of gang-related homicides take place at the boundaries of gang territory (both between the gangs

and the state and between the two gangs) because of outsiders attempting to enter gang neighborhoods without permission (Martínez, 2016). Leveraging this fact, we consider geocoded data on all gang-related homicides that were committed in San Salvador in 2003-2014 and split it into two subsamples: those that took place in the first six years of the sample period (2003-2008) and those that took place in the latest six years of the sample period (2009-2014). For each of the homicides, we identify whether it took place in a gang location and calculate the distance to the closest boundary of gang territory (either between the gang and the state or between the two gangs). Panel A of Appendix Figure A20 presents the number of gang-related homicides that took place in 2003-2008 by 10-meter bins on either side of the boundary of gang territory; Panel B of Figure A20 provides a similar illustration for gang-related homicides in 2009-2014. In both cases, the number of homicides was particularly high in areas close to the boundaries of the gang neighborhoods from the EDH map, confirming that the map correctly identifies the boundaries of gang territory in the two periods.[85] In turn, the fact that the highest number of gang-related homicides took place in the same locations both in 2003-2008 and 2009-2014 suggests that the boundaries of gang territory have remained stable during this period.

C.2. Reasons preventing people from migrating out of gang territory

This section provides a detailed discussion of the reasons preventing people from migrating out of gang-controlled neighborhoods in San Salvador, and the ways in which gangs track down and punish defectors.

In general, residents of gang territory in San Salvador can migrate to one of three categories of places: *(i)* another neighborhood in San Salvador, *(ii)* some other location in El Salvador, or *(iii)* abroad. We consecutively discuss these three options, explaining the reasons preventing people from choosing each of them.

We begin with considering the option of individuals moving from gang territory to another neighborhood in San Salvador. In Subsection 4.3 of the paper, we refer to this type of migration as "in-sample migration" and are able to reject that it is driving our results. This type of migration is not common for the following reason. First, while residents of non-gang neighborhoods have higher income, the costs of living outside of gang territory are also higher: in

[85]Notably, as shown in Figure A20, there are multiple gang-related homicides outside of gang territory. We provide a detailed discussion of this fact in Section 5. Also, as we show in Section 4.4, the results in Table 1 are robust to excluding observations from neighborhoods close to the regression discontinuity cutoff (see Table A7). Thus, while the location of the gang-related homicides allows us to validate the boundaries of gang territory from the EDH maps, the results in Table 1 are not driven by areas with the highest numbers of gang-related homicides.

Table A11, we show that residents of non-gang areas have to pay approximately $200 more in monthly rent. The average difference in income is larger (approximately $350), but this difference partly reflects the gap in education and the fact that residents of non-gang neighborhoods have had multiple years to develop their careers and get well-paying jobs. Therefore, in the short run, an individual who moves from a gang-controlled neighborhood outside of gang territory might not experience a sufficient increase in income to offset the additional costs of living.

Second, individuals who move out of gang territory are likely to be labeled as defectors and to provoke retaliation from the gangs. Defectors are a threat to the gangs' security because they can become informants and provide details about the gangs' whereabouts and activities. For this reason, gang members often track down defectors; many end up killed. It is also common for the gangs to hurt or kill the defectors' relatives and friends. For instance, Salvadoran American Susan Cruz, who helps Central American immigrants in the United States, describes the following story of a girl who had to flee from the gangs: "The gang members have gone to the grandmother's house asking about the girl. They've also indicated [that] for the grandmother to be OK, someone is going to have to pay for her safety" (Hackel, 2016). Even when people manage to escape themselves, "they have survivor's guilt when other relatives are left behind and are still facing threats of violence" (Hackel, 2016). Thus, unless a resident of gang territory is confident that they and their family and friends would be able to avoid detection by the gangs, as well as getting well-paying jobs that would offset the additional living expenses, it would not be optimal for them to move to a different part of San Salvador.

Could it be optimal for residents of gang territory to leave San Salvador and move to a different part of El Salvador? Such a move is unlikely to be beneficial for the following reasons. All the large cities in El Salvador have a significant gang presence. Thus, unless an individual is willing to move from San Salvador to a remote part of the country, they cannot fully avoid contact with the gangs. One individual describes the situation in the following way: "Where can we go? There are gangs everywhere in the country. [...] What are we going to tell gang members if they see us in a new place and ask where we are coming from? If they are from the same gang as in the place where we used to live, they will not like it [i.e., that we moved]. If they are from a rival gang, they won't like us being there" (Martínez, 2015). In turn, remote parts of the country, where the gangs are less likely to find a person, have even fewer jobs and lower income than in gang-controlled neighborhoods in the large cities. At the same time, a defector and their family and friends would still be at risk of being tracked down by the gangs. Overall,

internal migration seldom provides a permanent solution to people fleeing from the gangs. The director of El Salvador's Ministry of Justice and Public Security's victim's unit confirms this fact: "They can try to leave their municipalities, but, often, the gangs will find them" (Sieff, 2018).

How do the gangs manage to track people in other parts of the country? First, it should be noted that El Salvador is a small country with the population of only 6 million people and the territory of 21,041 square kilometers. At the same time, the government estimates that the gangs have approximately 60,000 active members and a support base (i.e., family, collaborators, etc.) of 500,000—8% of El Salvador's population, which are not concentrated in one region (e.g., San Salvador) but spread out throughout the country via a system of cliques (ICG, 2017; Zaidi, 2019). Each clique is integrated into one of the two main gangs, allowing gangs to communicate and distribute information via phone or social networks. If an individual leaves gang territory without permission, gang members have been known to circulate the picture of the defector to all the cliques around the country, adding the person to the "wanted" list (Martínez, 2015; Martínez, 2017). Gang members also use the defectors' cellphone numbers and social media posts to find where they are located; they sometimes even post missing person advertisements in newspapers, posing as the friends or relatives of the defector (Valencia Caravantes and Alvarado, 2014; Hackel, 2016; Martínez, 2017; Mackey, 2018). The gangs also take advantage of the fact that Salvadoran ID cards have the address of the individual printed on them. Therefore, when an unknown individual arrives to a neighborhood (not necessarily a gang-controlled neighborhood), the gangs often check the person's ID to perform a background check and see where that person is coming from (Internal Displacement Monitoring Centre, 2018; Immigration and Refugee Board of Canada, 2016). A report by the Internal Displacement Monitoring Centre (2018) describes the gangs' ability to find defectors in the following way: "New arrivals in an area will be checked out, asked where they used to live and asked for their ID card, which bears their address. Given the small size of the country and gangs' extensive surveillance networks, people can often be located within 24 hours. Gang members may even be informed and waiting when internally displaced people (IDP) arrive. Some IDPs have been killed when they are found, and others have been prevented from renting a place to live. Some have moved and been sought out four or five times." Other sources provide a similar assessment of the surveillance and security systems the gangs' have developed in El Salvador (Martínez, 2014; Clavel, 2017; Mackey, 2018).

The only durable solution of escaping gang control implies emigrating from El Salvador,

although even this solution also has its caveats. For instance, both MS-13 and 18th Street have a significant presence not only in El Salvador but also in neighboring Honduras and Guatemala. In some rare cases, the gangs have also been able to track defectors in Mexico and even in the United States (Vázquez Ruiz, 2019; Fredrick and Volpe, 2017; Blitzer, 2017). In the course of our work, we spoke to officers at the International Organization for Migration (IOM), and they expressed the view that the fear of being tracked by the gangs (justifiable or not) is an important factor limiting even international migration. However, plausibly the more binding factors affecting international migration are the following. The first one is that most developed countries—most notably, the United States—have not been willing to accept a large number of migrants from Central America's Northern Triangle (Honduras and Guatemala are experiencing similar gang-related problems). Therefore, even if an individual were to migrate out of El Salvador, they would face the risk of being deported and ending up in the hands of the gangs. The second important factor limiting international migration is related to its costs. The average monthly income in gang territory is approximately $300, whereas international travel is expensive. This is the reason why until the mid-2010s migration of entire families from El Salvador has been extremely rare (less than 3% of all migrants). Instead, families saved up money to send one member of the household abroad. In Subsection 4.3 of the paper, we take advantage of this fact to estimate whether out-of-sample migration can be driving our results. We find that, wealthier households have a higher probability of having a family member abroad. However, we find that this is equally true for wealthier households in neighborhoods not controlled by gangs, likely because, although gangs do not control those areas, they are still active there (as we document in Subsection 5). Thus, most families that can afford it, try to send a family member away, regardless of whether they live in a gang-controlled neighborhood or not. In addition, we show that the share of wealthier families with a family member abroad is too small to be driving the results. At most, selective out-of-sample migration can explain 14.2% of the gaps in Table 1.

C.3. Calculating the rates of selective out-of-sample migration that would generate the results

Table A20 in the Appendix presents the rates of selective out-of-sample migration from gang territory that are required to generate the discontinuities from Table 1. These calculations were performed in the following way. First, it should be noted that we focus on the binary outcome variables. For these variables, a household/individual is defined to be "rich" or "educated" if for them the value of the outcome is equal to one (i.e., they have a car, a high school

degree, etc.). The only exception is the outcome variable for not having a bathroom, for which the status is defined in the opposite way.

We use the example of the share of households with a computer to show how these rates were calculated. From the regression output, we get the predicted share of households with a computer for observations zero meters away from the boundary of gang territory, separately for locations inside and outside of gang territory. We denote those numbers as *G* and *NG*, respectively. We further denote the number of "rich" households (i.e., those that have a computer) in gang-controlled areas *before any migration took place* as x and the share of "poor" households (i.e., those that do not have a computer) as $1 - x$. Next, we assume that a fraction α of the "rich" households and a fraction β of the"poor" households migrated out of sample. Thus, in the data, we observe the following relationship.

$$\frac{(1-\alpha)x}{(1-\alpha)x + (1-\beta)(1-x)} = G. \tag{6}$$

Then, assuming different values of β, we calculate the value of α that would make this relationship hold if, in the absence of migration, there would not have been any difference in the outcome variable between gang and non-gang locations (i.e., $x = NG$). The results of the calculation are presented in Table A20.

C.4. Occupational structure and hours worked

We show that the differences in socioeconomic development in Table 1 cannot be explained by higher levels of unemployment in gang-controlled neighborhoods. In particular, we estimate Specification (1) for the variables from the 2007 census, focusing on the subsample of employed individuals (i.e., individuals who were in employment the week before the census).[86] Table A24 in the Appendix presents the results. If anything, the differences in socioeconomic conditions are even larger for employed individuals than for the full sample.[87] These findings are consistent with the notion that due to restrictions on their mobility, residents of gang-controlled neighborhoods are often unable to get well-paying jobs in large firms.

We also demonstrate that the differences in socioeconomic development cannot be explained by higher levels of informal employment in gang territory. Table A25 in the Appendix

[86] For the household characteristics, we consider the employment status of the head of the household.

[87] Notably, there is no discontinuity in the probability of being employed. The results of estimating Specification (1) suggest that residents of gang territory are only 0.4 percentage points less likely to be employed than individuals from non-gang areas with the standard error of 1.1 percentage points.

presents the results of estimating Specification (1) for the variables from the 2007 census, focusing on the subsample of formally employed individuals, which excludes domestic employees, unpaid workers, and self-employed individuals. For all the outcome variables, the discontinuities remain large and statistically significant.

In addition, we use the data from the 2019 survey to document that there are no underlying differences in the number of hours worked or in the individuals' willingness to work. In the survey, the respondents were asked to name the number of hours that they currently work as well as the number of hours they would choose to work if offered an hourly wage of \$5, \$10, and \$20. Table A26 in the Appendix presents the results of estimating Specification (1) for these outcome variables, showing that individuals on boths sides of the boundary of gang territory work the same number of hours and have similar willingness to work.

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Table A1: Summary statistics of the variables used in the estimation

	Mean	SD	Observations	Source
Panel A: 2007 census				
Walls made of concrete, 2007	0.932	0.252	72,252	2007 census
Bare floor, 2007	0.028	0.165	60,820	2007 census
Has sewerage infrastructure, 2007	0.941	0.236	62,316	2007 census
Use electricity for lighting & cooking, 2007	0.108	0.311	62,316	2007 census
No bathroom, 2007	0.005	0.069	62,316	2007 census
Has internet, 2007	0.180	0.384	59,917	2007 census
Has a motocycle, 2007	0.033	0.180	59,237	2007 census
Has a car, 2007	0.428	0.495	60,186	2007 census
Has a phone, 2007	0.696	0.460	60,309	2007 census
Has a TV, 2007	0.952	0.214	60,525	2007 census
Has a computer, 2007	0.346	0.476	60,161	2007 census
Number of rooms, 2007	3.089	1.649	62,316	2007 census
Can read and write, 2007	0.928	0.259	208,913	2007 census
Has high school degree, 2007	0.448	0.497	203,423	2007 census
Has university degree, 2007	0.207	0.405	203,423	2007 census
1st principal component of the:				
Dwelling characteristics, 2007	0.952	0.176	60,820	2007 census
Household characteristics, 2007	0.377	0.182	58,434	2007 census
Individual characteristics, 2007	0.521	0.296	203,423	2007 census
Has always lived in San Salvador, 2007	0.767	0.422	225,467	2007 census
Household density (per km^2), 2007	3651.7	3381.2	477	2007 census
Population density (per km^2), 2007	13131.6	11965.3	477	2007 census
Family member moved abroad, 1997-2007	0.061	0.239	62,316	2007 census
Panel B: 1992 census				
Walls made of concrete, 1992	0.813	0.390	64,899	1992 census
Bare floor, 1992	0.100	0.299	64,899	1992 census
Has sewerage infrastructure, 1992	0.816	0.388	64,899	1992 census
Use electricity for lighting & cooking, 1992	0.182	0.386	64,899	1992 census
No bathroom, 1992	0.030	0.170	64,899	1992 census
Shared bathroom, 1992	0.142	0.349	64,899	1992 census
Has a motocycle, 1992	0.034	0.182	64,899	1992 census
Has a car, 1992	0.285	0.451	64,899	1992 census
Has a phone, 1992	0.320	0.467	64,899	1992 census
Has a TV, 1992	0.860	0.347	64,899	1992 census
Has a blender, 1992	0.625	0.484	64,899	1992 census
Number of rooms, 1992	2.670	1.706	64,899	1992 census

Can read and write, 1992	0.904	0.294	234,749	1992 census
Has high school degree, 1992	0.314	0.464	227,281	1992 census
Has university degree, 1992	0.112	0.316	227,281	1992 census
1st principal component of the:				
Dwelling characteristics, 1992	0.863	0.301	64,899	1992 census
Household characteristics, 1992	0.525	0.228	64,899	1992 census
Individual characteristics, 1992	0.380	0.270	227,281	1992 census
Panel C: 2019 survey				
Has high school degree, 2019	0.508	0.500	2,275	2019 survey
Has university degree, 2019	0.180	0.384	2,275	2019 survey
Household income, 2019	625.05	632.84	2,314	2019 survey
Works in a firm with $\geq$100 employees, 2019	0.169	0.375	2,071	2019 survey
Works in a firm with $\geq$200 employees, 2019	0.133	0.340	2,071	2019 survey
Has always lived in location, 2019	0.772	0.419	2,314	2019 survey
Works in neighborhood where lives, 2019	0.302	0.459	2,071	2019 survey
Works in gang territory, 2019	0.334	0.472	1,738	2019 survey
Has been to Santa Ana, 2019	0.495	0.500	2,314	2019 survey
Has been to the beach, 2019	0.872	0.335	2,314	2019 survey
Freedom of movement in area, 2019	0.811	0.392	2,314	2019 survey
Satisfaction with availability and quality:				
Health services, 2019	4.080	1.815	2,314	2019 survey
Education centers, 2019	4.696	1.589	2,314	2019 survey
Roads, 2019	4.263	1.761	2,314	2019 survey
Electricity service, 2019	5.873	1.024	2,314	2019 survey
Would seek help from informal leader for:				
Public goods provision, 2019	0.220	0.415	2,314	2019 survey
A security, civil, or legal issue, 2019	0.090	0.287	2,314	2019 survey
A financial problem, 2019	0.013	0.115	2,314	2019 survey
Would seek help from nobody for:				
Public goods provision, 2019	0.084	0.277	2,314	2019 survey
A security, civil, or legal issue, 2019	0.046	0.209	2,314	2019 survey
A financial problem, 2019	0.115	0.319	2,314	2019 survey
Hours worked, 2019	8.613	3.098	2,071	2019 survey
Hours would work for a wage of:				
\$5 per hour, 2019	7.596	4.223	2,314	2019 survey
\$10 per hour, 2019	8.280	2.788	2,314	2019 survey
\$20 per hour, 2019	8.245	2.933	2,314	2019 survey
Panel D: Incarceration data				
Incarcerations per km^2:				
All incarcerations, before 1997	114.59	117.45	86	DGCP
Homicide, before 1997	4.670	5.618	86	DGCP

Robbery, before 1997	22.64	24.05	86	DGCP
Sex crimes, before 1997	6.588	10.38	86	DGCP
Assault, before 1997	20.86	21.82	86	DGCP
Other violent crimes, before 1997	9.711	9.756	86	DGCP
Panel E: Extortion and gang-related crimes				
Firm was extorted, 2015	0.246	0.431	512	FUSADES
Witnessed gang activity in area, 2015	0.738	0.440	493	FUSADES
Amount firm paid in extortion, 2012-2019	6.226	7.670	4,120	Internal firm data
Person was extorted, 2020	0.200	0.400	1,957	2020 survey
Amount person paid in extortion, 2020	8.447	31.06	252	2020 survey
Gang homicides per km^2, 2003-2011	9.241	9.386	86	PNC
Gang homicides per km^2, 2003-2007	3.348	4.221	86	PNC
Robberies per km^2, 2014-2015	26.18	19.19	86	OPAMSS
Panel F: Education outcomes				
Dropout rate, 2005-2017	0.020	0.042	3,199	Annual school census
Exam scores, 1999-2001 & 2005-2017:				
Math	5.434	1.334	1,284	PAES
Natural sciences	5.776	1.042	1,284	PAES
Social sciences	6.432	0.973	1,284	PAES
Languages & literature	6.151	1.051	1,284	PAES
Panel G: 2005 census				
Firms per km^2:				
All firms, 2005	234.35	222.36	156	2005 census
Opened after 1997, 2005	120.56	139.68	156	2005 census
Log of the firm's:				
Profits, 2005	9.767	2.087	5,631	2005 census
Revenue, 2005	10.97	2.183	6,118	2005 census
Costs, 2005	10.44	2.406	6,083	2005 census
Panel H: Google Maps				
Establishments per km^2:				
All establishments, 2019	129.74	33.59	86	Google Maps
Schools, 2019	5.786	4.385	86	Google Maps
Hospitals, 2019	1.805	2.040	86	Google Maps
Cafes & restaurants, 2019	9.620	5.217	86	Google Maps
Grocery stores, 2019	5.277	3.706	86	Google Maps
Pharmacies, 2019	1.717	1.943	86	Google Maps
Panel I: Data on housing rent (OLX)				
Housing rent, 2018	1008.8	614.2	1,537	OLX
Log housing rent, 2018	6.731	0.653	1,537	OLX
1 room in apartment, 2018	0.113	0.317	1,537	OLX

2 rooms in apartment, 2018	0.187	0.390	1,537	OLX
3 rooms in apartment, 2018	0.528	0.499	1,537	OLX
4 rooms in apartment, 2018	0.110	0.312	1,537	OLX
5 rooms in apartment, 2018	0.040	0.197	1,537	OLX
6 rooms in apartment, 2018	0.010	0.102	1,537	OLX
7+ rooms in apartment, 2018	0.012	0.108	1,537	OLX
1 bathroom in apartment, 2018	0.157	0.364	1,537	OLX
2 bathrooms in apartment, 2018	0.176	0.381	1,537	OLX
3 bathrooms in apartment, 2018	0.446	0.497	1,537	OLX
4 bathrooms in apartment, 2018	0.141	0.348	1,537	OLX
5 bathrooms in apartment, 2018	0.053	0.224	1,537	OLX
6 bathrooms in apartment, 2018	0.019	0.136	1,537	OLX
7+ bathrooms in apartment, 2018	0.008	0.092	1,537	OLX
Square meters, 2018	189.38	264.65	1,537	OLX
Rented out by agency, 2018	0.491	0.500	1,537	OLX
Panel J: Other RDD variables				
Urban territory, 1999	0.812	0.298	477	NYU Atlas of Urban Expansion
Road density (km per km^2), 2020	17.83	8.80	477	Humanitarian OpenStreetMap
Has access to waterway	0.327	0.470	477	Humanitarian OpenStreetMap
Elevation	720.4	87.83	477	CGIAR SRTM
Territory used for coffee production	0.028	0.132	477	Ministry of the Environment and Natural Resources
Tree coverage, 2000	0.048	0.116	477	Global Forest Watch
Panel K: Difference-in-differences variables				
Luminosity (grid level), 1992-2013	4.743	7.765	20,592	DMSP-OLS
Gang presence (grid), 1992-2013	0.110	0.313	20,592	PNC
Luminosity (municipality), 1992-2013	10.18	14.07	2,288	DMSP-OLS
Gang presence (municipality), 1992-2013	0.538	0.499	2,288	PNC
Gang leaders' municipality of birth	0.163	0.370	2,288	El Faro

Table A2: Gang presence and nighttime light density

	Nighttime light density (in percentage points relative to 1995)							
	Grid-level analysis		Municipality-level analysis					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\mathbb{1}\{\text{Year} > 1997\} \times$								
$\times$ Gang presence	-19.75 (2.14)*** [5.55]***	-30.65 (11.64)*** [11.64]***	-22.18 (4.00)*** [5.12]***	-19.59 (4.68)*** [4.55]***	-26.22 (5.07)*** [5.79]***	-23.50 (9.43)** [7.29]***		
$\times$ Gang leader born in municipality							-14.47 (3.03)*** [3.34]***	-14.61 (5.96)** [4.56]***
Observations	20,592	14,190	2,288	1,782	2,288	1,782	2,288	1,782
Grid cells/ municipalities	936	645	104	81	104	81	104	81
IV analysis (2SLS)					✓	✓		
Coefficient for excluded instrument					0.552 (0.055)*** [0.050]***	0.622 (0.058)*** [0.045]***		
F-stat, excluded instrument					(100.21) [121.36]	(113.13) [189.54]		
Excluding areas with above average luminosity in 1995		✓		✓		✓		✓

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (4) for nighttime light density, measured in percentage points to the level in 1995, one year before the change in the United States immigration policy. It also presents the results of the IV estimation, where in the first stage gang presence after 1996 is predicted using a dummy for whether there was a gang leader born in that municipality, i.e., Specification (5). In 1995, the outcome variable is equal to 100 percent for both gang and non-gang locations. Omitted controls include year dummies, grid cell or municipality fixed effects, and separate time trends for each grid cell or municipality. Standard errors in parentheses are clustered by grid cell or municipality, depending on the regression specification. Standard errors in brackets are adjusted to allow for spatial correlation within a 50 kilometer radius and 5 temporal lags (Conley correction). The first-stage F-statistics in parentheses correspond to the standard errors clustered by grid cell or municipality; the first-stage F-statistics in brackets—to the Conley standard errors.

Table A3: Event study for nighttime light density

	Nighttime light density	
Unit of observation:	Grid cell-year	Municipality-year
	(1)	(2)
Gang presence ×		
× Year = 1992	-0.25	12.73
	(13.27)	(8.25)
× Year = 1993	-9.41	1.42
	(8.87)	(5.81)
× Year = 1994	-3.47	7.26
	(12.83)	(5.46)
× Year = 1996	-5.72	-4.74
	(12.01)	(4.30)
× Year = 1997	1.57	-3.20
	(10.30)	(4.34)
× Year = 1998	-47.02***	-17.32***
	(9.15)	(4.97)
× Year = 1999	-47.36***	-20.78***
	(8.98)	(5.07)
× Year = 2000	-33.94***	-17.76***
	(11.01)	(5.17)
× Year = 2001	-44.98***	-28.94***
	(13.10)	(7.36)
× Year = 2002	-26.00*	-19.47***
	(13.73)	(7.07)
× Year = 2003	-30.30***	-14.70***
	(10.41)	(5.20)
× Year = 2004	-82.10***	-31.56***
	(13.89)	(6.69)
× Year = 2005	-55.40***	-27.22***
	(12.31)	(6.28)
× Year = 2006	-71.17***	-30.24***
	(12.67)	(5.85)
× Year = 2007	-76.05***	-35.15***
	(14.93)	(6.67)
× Year = 2008	-70.94***	-33.11***
	(15.62)	(7.43)
× Year = 2009	-64.39***	-32.30***
	(16.80)	(7.80)
× Year = 2010	-118.08***	-49.80***
	(17.93)	(12.05)
× Year = 2011	-55.51***	-29.23***
	(18.65)	(8.73)
× Year = 2012	-79.42***	-16.42
	(20.68)	(10.64)
× Year = 2013	-39.75*	-19.70*
	(20.95)	(11.12)
Observations	14,190	1,782
Grid cells/ municipalities	645	81
Excluding areas with above average luminosity in 1995	✓	✓

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (3) for nighttime light density, measured in percentage points to the level in 1995, one year before the change in the United States immigration policy. In 1995, the outcome variable is equal to 100 percent for both gang and non-gang locations. Omitted controls include year dummies and grid cell or municipality fixed effects. Standard errors in parentheses are clustered by grid cell or municipality, depending on the regression specification.

Table A4: Placebo: Effects of major roads that did not define the borders of gang territory

	Dwelling characteristics		Household characteristics			
	Walls made of concrete	Bare floor	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has internet
	(1)	(2)	(3)	(4)	(5)	(6)
Placebo treatment group	0.008	0.009	-0.023	0.048	0.009	0.060
	(0.027)	(0.014)	(0.029)	(0.029)	(0.008)	(0.037)
Mean of dep. var.	0.921	0.028	0.955	0.108	0.006	0.157
Observations	56,402	46,922	48,251	48,251	48,251	46,159
	Household characteristics					
	Has a motorcycle	Has a car	Has a phone	Has a TV	Has a computer	Number of rooms
	(7)	(8)	(9)	(10)	(11)	(12)
Placebo treatment group	-0.002	0.065	0.015	0.001	0.055	0.100
	(0.006)	(0.053)	(0.036)	(0.010)	(0.040)	(0.178)
Mean of dep. var.	0.034	0.357	0.644	0.947	0.290	2.934
Observations	45,607	46,384	46,456	46,636	46,382	48,251
	Individual characteristics			1st principal component of the:		
	Can read and write	Has a high school degree	Has a university degree	Dwelling characteristics	Household characteristics	Individual characteristics
	(13)	(14)	(15)	(16)	(17)	(18)
Placebo treatment group	0.002	0.009	0.016	-0.001	0.025	0.009
	(0.010)	(0.035)	(0.029)	(0.019)	(0.022)	(0.022)
Mean of dep. var.	0.921	0.406	0.171	0.947	0.354	0.494
Observations	160,594	156,439	156,439	46,922	44,924	156,439

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (2), using the locations of major roads that did not contribute to the formation of the boundaries of gang territory as a placebo. All the variables come from the 2007 census. The unit of observation is a dwelling, household, or individual, depending on which characteristics are being considered. In the individual-level regressions, the sample consists of the entire population. Omitted controls include a dummy for gang territory as well as a linear trend in distance to the placebo boundary, separately for locations on each side of the placebo boundary and on each side of the boundary of gang territory. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the placebo boundary (separately for each side of the boundary).

Table A5: Socioeconomic characteristics from the 2019 survey

	Has a high school degree	Has a university degree	Household income	Works in a firm with $\geq$ 100 employees	Works in a firm with $\geq$ 200 employees
	(1)	(2)	(3)	(4)	(5)
Panel A: All survey respondents					
Gang territory	-0.311***	-0.254***	-352.60***	-0.123***	-0.115***
	(0.057)	(0.062)	(112.22)	(0.019)	(0.028)
Mean of dep. var.	0.508	0.180	625.0	0.169	0.133
Observations	2,275	2,275	2,314	2,071	2,071
Panel B: Respondents who have lived in the same location their entire life					
Gang territory	-0.281***	-0.173***	-271.05**	-0.114***	-0.104**
	(0.061)	(0.056)	(118.14)	(0.033)	(0.041)
Mean of dep. var.	0.474	0.149	602.3	0.155	0.123
Observations	1,757	1,757	1,787	1,589	1,589

Note: *** p<0.01, ** p<0.05, * p<0.1. After years of gang control, gang-controlled areas have worse socioeconomic conditions than neighboring areas that were not under the control of gangs. The table presents the results of estimating Specification (1) for the variables from the 2019 survey. Panel A presents the results for the full sample; Panel B—for the subsample of respondents who have always lived in the same location. For household income, the unit of observation is a household; for all the other variables—an individual. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A6: Socioeconomic conditions after exposure to gang control, subsample of individuals who have always lived in San Salvador

	Dwelling characteristics		Household characteristics			
	Walls made of concrete	Bare floor	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has internet
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory	-0.047***	0.026**	-0.058**	-0.076***	0.005***	-0.132***
	(0.015)	(0.010)	(0.023)	(0.019)	(0.002)	(0.031)
Mean of dep. var.	0.932	0.028	0.934	0.105	0.005	0.178
Observations	72,087	60,675	38,926	38,926	38,926	37,147
	Household characteristics					
	Has a motorcycle	Has a car	Has a phone	Has a TV	Has a computer	Number of rooms
	(7)	(8)	(9)	(10)	(11)	(12)
Gang territory	-0.019**	-0.225***	-0.145***	-0.024***	-0.179***	-0.734***
	(0.007)	(0.044)	(0.033)	(0.006)	(0.037)	(0.186)
Mean of dep. var.	0.036	0.426	0.683	0.955	0.345	3.048
Observations	36,679	37,328	37,414	37,542	37,292	38,926
	Individual characteristics			1st principal component of the:		
	Can read and write	Has a high school degree	Has a university degree	Dwelling characteristics	Household characteristics	Individual characteristics
	(13)	(14)	(15)	(16)	(17)	(18)
Gang territory	-0.027***	-0.151***	-0.120***	-0.036***	-0.094***	-0.098***
	(0.006)	(0.029)	(0.028)	(0.012)	(0.019)	(0.020)
Mean of dep. var.	0.931	0.445	0.201	0.952	0.374	0.520
Observations	156,627	152,953	152,953	60,675	36,147	152,953

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the subsample of individuals who have always lived in San Salvador. For the dwelling characteristics, none of the observations are excluded because all the dwellings have always been located in San Salvador. For the household characteristics, we limit the sample to those observations for which the head of the household has always lived in San Salvador. All the variables come from the 2007 census. The unit of observation is a dwelling, household, or individual, depending on which characteristics are being considered. In the individual-level regressions, the sample consists of the entire population. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A7: Excluding observations within 100 meters of the boundary of gang territory

	Dwelling characteristics		Household characteristics			
	Walls made of concrete	Bare floor	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has internet
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory	-0.067***	0.054***	-0.092***	-0.101***	0.002	-0.176***
	(0.019)	(0.011)	(0.028)	(0.017)	(0.003)	(0.024)
Mean of dep. var.	0.936	0.026	0.943	0.116	0.004	0.194
Observations	50,183	42,287	43,258	43,258	43,258	41,726
	Household characteristics					
	Has a motorcycle	Has a car	Has a phone	Has a TV	Has a computer	Number of rooms
	(7)	(8)	(9)	(10)	(11)	(12)
Gang territory	-0.032***	-0.288***	-0.204***	-0.036***	-0.239***	-1.006***
	(0.008)	(0.048)	(0.052)	(0.008)	(0.045)	(0.235)
Mean of dep. var.	0.034	0.456	0.708	0.954	0.362	3.179
Observations	41,205	41,911	41,964	42,108	41,860	43,258
	Individual characteristics			1st principal component of the:		
	Can read and write	Has a high school degree	Has a university degree	Dwelling characteristics	Household characteristics	Individual characteristics
	(13)	(14)	(15)	(16)	(17)	(18)
Gang territory	-0.040***	-0.208***	-0.163***	-0.058***	-0.126***	-0.136***
	(0.009)	(0.029)	(0.028)	(0.013)	(0.022)	(0.021)
Mean of dep. var.	0.931	0.464	0.223	0.955	0.388	0.533
Observations	144,977	141,210	141,210	42,287	40,651	141,210

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the variables from the 2007 census after excluding observations within 100 meters of the boundary of gang territory. The unit of observation is a dwelling, household, or individual, depending on which characteristics are being considered. In the individual-level regressions, the sample consists of the entire population. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A8: Controlling for 300×300 meter fixed effects

	Dwelling characteristics		Household characteristics			
	Walls made of concrete	Bare floor	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has internet
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory	-0.052*	0.023***	-0.073***	-0.097***	0.006***	-0.160***
	(0.030)	(0.007)	(0.026)	(0.025)	(0.002)	(0.028)
Mean of dep. var.	0.932	0.028	0.941	0.108	0.005	0.180
Observations	72,087	60,675	62,169	62,169	62,169	59,776
	Household characteristics					
	Has a motorcycle	Has a car	Has a phone	Has a TV	Has a computer	Number of rooms
	(7)	(8)	(9)	(10)	(11)	(12)
Gang territory	-0.010*	-0.224***	-0.135***	-0.019	-0.190***	-0.641***
	(0.006)	(0.047)	(0.032)	(0.011)	(0.037)	(0.207)
Mean of dep. var.	0.033	0.428	0.697	0.952	0.346	3.093
Observations	59,096	60,045	60,168	60,384	60,020	62,169
	Individual characteristics			1st principal component of the:		
	Can read and write	Has a high school degree	Has a university degree	Dwelling characteristics	Household characteristics	Individual characteristics
	(13)	(14)	(15)	(16)	(17)	(18)
Gang territory	-0.031***	-0.137***	-0.101***	-0.040**	-0.100***	-0.089***
	(0.006)	(0.031)	(0.032)	(0.017)	(0.021)	(0.023)
Mean of dep. var.	0.928	0.449	0.208	0.952	0.378	0.522
Observations	208,416	202,935	202,935	60,675	58,293	202,935

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the variables from the 2007 census, controlling for 300×300 meter fixed effects. The unit of observation is a dwelling, household, or individual, depending on which characteristics are being considered. In the individual-level regressions, the sample consists of the entire population. Omitted controls include 300×300 meter fixed effects and a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A9: Two-dimensional regression discontinuity in latitude and longitude

	Dwelling characteristics		Household characteristics			
	Walls made of concrete	Bare floor	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has internet
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory	-0.051***	0.009*	-0.006	-0.076***	0.004***	-0.141***
	(0.007)	(0.005)	(0.015)	(0.008)	(0.001)	(0.011)
Mean of dep. var.	0.932	0.028	0.941	0.108	0.005	0.181
Observations	72,087	60,675	62,169	62,169	62,169	59,776
	Household characteristics					
	Has a motorcycle	Has a car	Has a phone	Has a TV	Has a computer	Number of rooms
	(7)	(8)	(9)	(10)	(11)	(12)
Gang territory	-0.007**	-0.256***	-0.175***	-0.024***	-0.199***	-0.806***
	(0.002)	(0.021)	(0.017)	(0.003)	(0.017)	(0.087)
Mean of dep. var.	0.033	0.429	0.697	0.952	0.346	3.093
Observations	59,096	60,045	60,168	60,384	60,020	62,169
	Individual characteristics			1st principal component of the:		
	Can read and write	Has a high school degree	Has a university degree	Dwelling characteristics	Household characteristics	Individual characteristics
	(13)	(14)	(15)	(16)	(17)	(18)
Gang territory	-0.026***	-0.161***	-0.141***	-0.028***	-0.104***	-0.109***
	(0.004)	(0.012)	(0.012)	(0.006)	(0.009)	(0.009)
Mean of dep. var.	0.928	0.449	0.208	0.952	0.378	0.522
Observations	208,416	202,935	202,935	60,675	58,293	202,935

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the variables from the 2007 census, using latitude and longitude as the forcing variables. The unit of observation is a dwelling, household, or individual, depending on which characteristics are being considered. In the individual-level regressions, the sample consists of the entire population. Omitted controls include a linear trend in latitude and longitude (demeaned), separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A10: Excluding 10% of the observations with the highest values of the 1st principal components from non-gang areas

	Dwelling characteristics		Household characteristics			
	Walls made of concrete	Bare floor	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has internet
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory	-0.042**	0.023**	-0.047**	-0.031*	0.005***	-0.064***
	(0.016)	(0.010)	(0.022)	(0.017)	(0.002)	(0.024)
Mean of dep. var.	0.929	0.030	0.939	0.081	0.005	0.143
Observations	69,008	57,596	59,569	59,569	59,569	57,176
	Household characteristics					
	Has a motorcycle	Has a car	Has a phone	Has a TV	Has a computer	Number of rooms
	(7)	(8)	(9)	(10)	(11)	(12)
Gang territory	-0.002	-0.165***	-0.116***	-0.018***	-0.124***	-0.500***
	(0.006)	(0.046)	(0.033)	(0.006)	(0.033)	(0.185)
Mean of dep. var.	0.028	0.402	0.682	0.950	0.316	2.980
Observations	56,496	57,445	57,568	57,784	57,420	59,569
	Individual characteristics			1st principal component of the:		
	Can read and write	Has a high school degree	Has a university degree	Dwelling characteristics	Household characteristics	Individual characteristics
	(13)	(14)	(15)	(16)	(17)	(18)
Gang territory	-0.026***	-0.103***	-0.040*	-0.032**	-0.057***	-0.055***
	(0.007)	(0.028)	(0.022)	(0.012)	(0.018)	(0.019)
Mean of dep. var.	0.924	0.421	0.169	0.949	0.359	0.498
Observations	199,162	193,681	193,681	57,596	55,693	193,681

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) after excluding 10% of the observations with the highest levels of the first principal component from non-gang areas. For the dwelling characteristics, we use the first principal component of the dwelling characteristics; for the household characteristics—the first principal component of the household characteristics; for the individual characteristics—the first principal component of the individual characteristics. When more than 10% of observations had the first principal component less than or equal to the value of the 10th percentile, we exclude a random subset of observations for which the first principal component is exactly equal to the 10th percentile. The estimates do not depend on which subsample of observations are excluded. In particular, we perform 1,000 iterations of this procedure, and for each variable report the most concervative results, i.e., when they are least significant. All the variables come from the 2007 census. The unit of observation is a dwelling, household, or individual, depending on which characteristics are being considered. In the individual-level regressions, the sample consists of the entire population. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A11: Housing rent

	Log of housing rent	Housing rent
	(1)	(2)
Gang territory	-0.191***	-203.20***
	(0.052)	(56.33)
Number of rooms in the apartment:		
2 rooms	0.210***	19.93
	(0.053)	(30.79)
3 rooms	0.296***	87.65**
	(0.059)	(42.09)
4 rooms	0.189**	33.14
	(0.070)	(73.21)
5 rooms	0.134	2.46
	(0.107)	(124.27)
6 rooms	0.383***	330.19**
	(0.089)	(148.86)
7+ rooms	0.365***	378.31*
	(0.124)	(194.71)
Number of bathrooms in the apartment:		
2 bathrooms	0.507***	209.67***
	(0.073)	(49.22)
3 bathrooms	0.718***	350.97***
	(0.062)	(46.61)
4 bathrooms	0.836***	473.41***
	(0.066)	(82.91)
5 bathrooms	0.992***	650.37***
	(0.080)	(130.00)
6 bathrooms	1.095***	1,028.51***
	(0.113)	(213.85)
7+ bathrooms	0.979***	786.86***
	(0.160)	(233.44)
Square meters	0.140***	190.59***
	(0.018)	(22.68)
Square meters squared	-0.003***	-4.29***
	(0.000)	(0.61)
Rented out by an agency	0.269***	242.29***
	(0.034)	(15.55)
Mean dep. var	6.731	1,008.81
Observations	1,537	1,537

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for housing rent requested by landlords, controlling for the characteristics of the apartments that are being rented out. The unit of observation is an apartment. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A12: Estimating the effects separately for MS-13 and 18th Street

	Dwelling characteristics		Household characteristics			
	Walls made of concrete	Bare floor	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has internet
	(1)	(2)	(3)	(4)	(5)	(6)
MS-13	-0.051***	0.024**	-0.058**	-0.079***	0.006***	-0.141***
	(0.017)	(0.010)	(0.025)	(0.021)	(0.001)	(0.031)
18th Street	-0.044**	0.027**	-0.045**	-0.078***	0.005*	-0.126***
	(0.017)	(0.011)	(0.021)	(0.022)	(0.003)	(0.031)
Mean of dep. var.	0.932	0.028	0.941	0.108	0.005	0.181
Observations	72,087	60,675	62,169	62,169	62,169	59,776
	Household characteristics					
	Has a motorcycle	Has a car	Has a phone	Has a TV	Has a computer	Number of rooms
	(7)	(8)	(9)	(10)	(11)	(12)
MS-13	-0.015**	-0.242***	-0.163***	-0.025***	-0.198***	-0.829***
	(0.006)	(0.050)	(0.034)	(0.006)	(0.039)	(0.194)
18th Street	-0.012*	-0.187***	-0.119***	-0.019***	-0.159***	-0.615***
	(0.006)	(0.049)	(0.036)	(0.006)	(0.037)	(0.212)
Mean of dep. var.	0.033	0.429	0.697	0.952	0.346	3.093
Observations	59,096	60,045	60,168	60,384	60,020	62,169
	Individual characteristics			1st principal component of the:		
	Can read and write	Has a high school degree	Has a university degree	Dwelling characteristics	Household characteristics	Individual characteristics
	(13)	(14)	(15)	(16)	(17)	(18)
MS-13	-0.036***	-0.179***	-0.145***	-0.036***	-0.102***	-0.119***
	(0.007)	(0.030)	(0.027)	(0.012)	(0.021)	(0.020)
18th Street	-0.029***	-0.138***	-0.108***	-0.036**	-0.082***	-0.091***
	(0.008)	(0.031)	(0.027)	(0.013)	(0.021)	(0.021)
Mean of dep. var.	0.928	0.449	0.208	0.952	0.378	0.522
Observations	208,416	202,935	202,935	60,675	58,293	202,935

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) with the dummy for gang territory replaced with two dummies for areas controlled by MS-13 and areas controlled by 18th Street. All the variables come from the 2007 census. The unit of observation is a dwelling, household, or individual, depending on which characteristics are being considered. In the individual-level regressions, the sample consists of the entire population. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A13: Excluding areas within 150 meters of the rival gang

	Dwelling characteristics		Household characteristics			
	Walls made of concrete	Bare floor	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has internet
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory	-0.041***	0.025**	-0.060***	-0.076***	0.004***	-0.123***
	(0.015)	(0.010)	(0.020)	(0.020)	(0.001)	(0.027)
Mean of dep. var.	0.942	0.027	0.939	0.122	0.003	0.206
Observations	60,187	50,742	51,933	51,933	51,933	49,948
	Household characteristics					
	Has a motorcycle	Has a car	Has a phone	Has a TV	Has a computer	Number of rooms
	(7)	(8)	(9)	(10)	(11)	(12)
Gang territory	-0.012**	-0.191***	-0.122***	-0.021***	-0.161***	-0.612***
	(0.006)	(0.044)	(0.031)	(0.006)	(0.032)	(0.192)
Mean of dep. var.	0.035	0.475	0.734	0.958	0.383	3.249
Observations	49,271	50,178	50,306	50,480	50,144	51,933
	Individual characteristics			1st principal component of the:		
	Can read and write	Has a high school degree	Has a university degree	Dwelling characteristics	Household characteristics	Individual characteristics
	(13)	(14)	(15)	(16)	(17)	(18)
Gang territory	-0.030***	-0.151***	-0.117***	-0.034***	-0.083***	-0.098***
	(0.007)	(0.028)	(0.024)	(0.011)	(0.018)	(0.019)
Mean of dep. var.	0.932	0.475	0.231	0.957	0.397	0.540
Observations	174,465	169,910	169,910	50,742	48,619	169,910

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) after excluding gang-controlled neighborhoods that are located within 150 meters of the rival gang. The unit of observation is a dwelling, household, or individual, depending on which characteristics are being considered. All the variable come from the 2007 census. In the individual-level regressions, the sample consists of the entire population. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A14: "Islands" of gang territory

	Dwelling characteristics		Household characteristics			
	Walls made of concrete	Bare floor	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has internet
	(1)	(2)	(3)	(4)	(5)	(6)
"Island" of gang territory	-0.029**	0.023**	-0.084**	-0.065***	0.006***	-0.103***
	(0.013)	(0.009)	(0.038)	(0.020)	(0.001)	(0.030)
Rest of gang territory	-0.057***	0.027**	-0.028	-0.087***	0.006*	-0.148***
	(0.020)	(0.010)	(0.028)	(0.022)	(0.003)	(0.030)
Mean of dep. var.	0.932	0.028	0.941	0.108	0.005	0.181
Observations	72,087	60,675	62,169	62,169	62,169	59,776
	Household characteristics					
	Has a motorcycle	Has a car	Has a phone	Has a TV	Has a computer	Number of rooms
	(7)	(8)	(9)	(10)	(11)	(12)
"Island" of gang territory	-0.011*	-0.216***	-0.130***	-0.018***	-0.167***	-0.709***
	(0.006)	(0.050)	(0.029)	(0.005)	(0.038)	(0.189)
Rest of gang territory	-0.014**	-0.202***	-0.139***	-0.024***	-0.177***	-0.684***
	(0.006)	(0.048)	(0.037)	(0.007)	(0.037)	(0.203)
Mean of dep. var.	0.033	0.429	0.697	0.952	0.346	3.093
Observations	59,096	60,045	60,168	60,384	60,020	62,169
	Individual characteristics			1st principal component of the:		
	Can read and write	Has a high school degree	Has a university degree	Dwelling characteristics	Household characteristics	Individual characteristics
	(13)	(14)	(15)	(16)	(17)	(18)
"Island" of gang territory	-0.040***	-0.194***	-0.148***	-0.026**	-0.087***	-0.127***
	(0.007)	(0.028)	(0.025)	(0.010)	(0.020)	(0.019)
Rest of gang territory	-0.026***	-0.125***	-0.104***	-0.043***	-0.091***	-0.084***
	(0.007)	(0.033)	(0.028)	(0.014)	(0.020)	(0.022)
Mean of dep. var.	0.928	0.449	0.208	0.952	0.378	0.522
Observations	208,416	202,935	202,935	60,675	58,293	202,935

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) with the dummy for gang territory replaced with dummies for the "islands" of gang territory and for the other gang-controlled locations. All the variables come from the 2007 census. The unit of observation is a dwelling, household, or individual, depending on which characteristics are being considered. In the individual-level regressions, the sample consists of the entire population. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A15: Effect on the individual characteristics, by gender

	Can read and write		Has a high school degree		Has a university degree		1st principal component	
Subsample:	Female	Male	Female	Male	Female	Male	Female	Male
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Gang territory	-0.039***	-0.024***	-0.135***	-0.176***	-0.100***	-0.149***	-0.091***	-0.115***
	(0.009)	(0.005)	(0.025)	(0.033)	(0.021)	(0.032)	(0.018)	(0.023)
Mean of dep. var.	0.915	0.943	0.432	0.469	0.186	0.234	0.505	0.543
Observations	114,410	94,006	111,221	91,714	111,221	91,714	111,221	91,714

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the individual characteristics from the 2007 census, separately for men and women. The unit of observation is an individual. The sample consists of the entire population. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A16: Restrictions on individuals' mobility, controlling for income and education

	Has been to Santa Ana department		Has been to the beach		Always lived in this location		Freedom of movement where they live	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Gang territory	-0.258***	-0.191***	-0.066**	-0.026	0.155***	0.116**	-0.088**	-0.092**
	(0.039)	(0.042)	(0.032)	(0.039)	(0.043)	(0.050)	(0.040)	(0.043)
Gang territory ×								
× Income (in thousands)	0.196***	0.158***	0.066***	0.049***	-0.025	-0.010	-0.032	-0.049
	(0.025)	(0.023)	(0.016)	(0.015)	(0.023)	(0.023)	(0.036)	(0.034)
× Has high school degree		0.124***		0.081***		-0.059**		0.045**
		(0.020)		(0.012)		(0.023)		(0.021)
× Has university degree		0.118**		-0.001		-0.043		0.033
		(0.054)		(0.033)		(0.059)		(0.040)
Non-gang territory ×								
× Income (in thousands)	0.136***	0.088***	0.035***	0.016	-0.035*	0.000	-0.009	-0.017
	(0.034)	(0.024)	(0.011)	(0.008)	(0.021)	(0.017)	(0.016)	(0.016)
× Has high school degree		0.142***		0.086***		-0.047		-0.000
		(0.045)		(0.021)		(0.035)		(0.025)
× Has university degree		0.132***		0.031		-0.156***		0.044*
		(0.030)		(0.019)		(0.044)		(0.025)
Mean of dep. var.	0.495	0.495	0.872	0.872	0.772	0.772	0.811	0.811
Observations	2,314	2,275	2,314	2,275	2,314	2,275	2,314	2,275

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the mobility questions from the 2019 survey, controlling for income and education. The other mobility-related questions from Table 4 are excluded because the individuals' work location directly affects income. Santa Ana is a neighboring department, which is approximately 60 kilometers away from San Salvador. The sea is approximately 30 kilometers away from San Salvador. The unit of observation is an individual. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A17: Restrictions on individuals' mobility and labor market outcomes, by gender

	Works in gang territory	Freedom of movement where they live	Household income	Works in a firm with ≥100 employees	Works in a firm with ≥200 employees
	(1)	(2)	(3)	(4)	(5)
Gang territory × Male	0.454***	-0.077*	-370.07***	-0.138***	-0.116***
	(0.042)	(0.043)	(114.52)	(0.034)	(0.037)
Gang territory × Female	0.520***	-0.107**	-332.33***	-0.108***	-0.110***
	(0.045)	(0.041)	(107.53)	(0.019)	(0.030)
Mean of dep. var	0.360	0.811	625	0.169	0.133
Observations	1,738	2,314	2,314	2,071	2,071

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the mobility and labor market questions from the 2019 survey, by gender. The unit of observation is an individual. In Columns 1-2, omitted controls include a dummy for being female and a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. In Columns 3-5, omitted controls include a dummy for being female, a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary, and a dummy for whether the individual is currently employed (in the survey, unemployed individuals were asked to describe their most recent work experience). Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A18: Firms' location, profits, revenue, and costs

	Log of the firm's:			Firms per km^2, 2005 census:		Firms per km^2, Google Maps:			
	Profits	Revenue	Costs	All firms	Opened after 1997	All firms	Cafes & restaurants	Grocery stores	Pharmacies
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Gang territory	-0.198	-0.027	0.094	-5.774	-13.846	3.449	-1.022	0.646	-0.073
	(0.362)	(0.332)	(0.330)	(102.74)	(50.057)	(16.138)	(1.542)	(0.702)	(0.445)
Mean of dep. var.	9.767	10.97	10.44	234.30	120.60	129.70	9.620	5.277	1.717
Observations	5,631	6,118	6,083	156	156	86	86	86	86

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the number of business establishments, their profits, revenue, and costs. The results in Columns 1-5 are based on the supplement to the 2005 economic census. In Columns 1-3, the unit of observation is a firm; in Columns 4-5—a sector, the analogue of the census tract in the economic census. The data on the number of business establishments in Columns 6-9 come from Google Maps. In these regressions, the unit of observation is a 10 meter bin, denoting distance to the boundary of gang territory, weighted by the size of the area of the distance bins. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A19: Gang control and exam scores

	Math		Natural sciences		Social sciences		Languages & literature	
Subsample:	All obs.	Year $\leq$ 2007	All obs.	Year $\leq$ 2007	All obs.	Year $\leq$ 2007	All obs.	Year $\leq$ 2007
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Gang territory	-0.835**	-0.801**	-0.652**	-0.603**	-0.666***	-0.686**	-0.712***	-0.649**
	(0.337)	(0.331)	(0.248)	(0.250)	(0.234)	(0.278)	(0.240)	(0.252)
Mean of dep. var.	5.434	5.511	5.776	5.901	6.432	6.382	6.151	5.960
Observations	1,284	436	1,284	436	1,284	436	1,284	436

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results for estimating Specification (1) for the average exam scores in San Salvador schools. The data come from the schools' administrative records in 1999-2001 and 2005-2017. The unit of observation is a school in a year. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A20: Rates of out-of-sample migration for rich households and educated individuals from gang territory required to generate the discontinuities

	Household characteristics					
	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has a motocycle	Has a car	Has internet
	(1)	(2)	(3)	(4)	(5)	(6)
β—out-of-sample migration rate for poor households and uneducated individuals from gang territory						
$\beta = 0\%$	58.5%	56.4%	79.5%	31.2%	57.3%	57.7%
$\beta = 10\%$	62.6%	60.7%	81.6%	38.1%	61.6%	61.9%
$\beta = 20\%$	66.8%	65.1%	83.6%	44.9%	65.9%	66.2%
	Household characteristics			Individual characteristics		
	Has a phone	Has a TV	Has a computer	Can read and write	Has a high school degree	Has a university degree
	(7)	(8)	(9)	(10)	(11)	(12)
β—out-of-sample migration rate for poor households and uneducated individuals from gang territory						
$\beta = 0\%$	49.7%	38.9%	52.7%	40.6%	46.2%	51.5%
$\beta = 10\%$	54.7%	45.0%	57.5%	46.6%	51.6%	56.4%
$\beta = 20\%$	59.8%	51.1%	62.2%	52.5%	57.0%	61.2%

Note: The table presents the rates of out-of-sample migration for rich households and educated individuals from gang territory required to generate the discontinuities from Table 1 under different assumptions about the migration rate for poor households and uneducated individuals from gang territory. All the variables come from the 2007 census. The unit of observation is a household or an individual, depending on which characteristics are being considered.

Table A21: Estimating the actual rates of out-of-sample migration

	Family member moved abroad in 1997-2007		
	(1)	(2)	(3)
Gang territory	-0.002	0.000	-0.008
	(0.005)	(0.004)	(0.007)
1st principal component of the household characteristics	0.063***	0.061***	
	(0.008)	(0.008)	
1st principal component of the household characteristics ×			
× Non-gang territory			0.056***
			(0.011)
× Gang territory			0.071***
			(0.012)
Mean dep. var	0.056	0.062	0.056
Observations	36,147	58,293	36,147
p-value for equal coefficients inside and outside of gang territory			0.313
Household head has always lived in San Salvador	✓		✓

Note: The table presents the results of estimating the rates of out-of-sample migration from San Salvador. All the variables come from the 2007 census. The unit of observation is a household. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A22: McCrary density test

Subsample	Household density, per km^2	Population density, per km^2:					
	All obs.	All obs.	Male	Female	Age 16-25	Age 26-40	Age >40
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gang territory	245.00	1,251.08	635.43	615.65	257.97	300.60	124.50
	(388.53)	(1,444.87)	(652.53)	(792.62)	(254.00)	(359.23)	(397.06)
Mean of dep. var.	3,658	13,154	6,037	7,117	2,348	3,092	3,947
Observations	476	476	476	476	476	476	476

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for household and population density, measured in households and individuals per square kilometer, respectively. The unit of observation is a census tract. The household count, population count, and the size of the census tracts come from the 2007 census. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Observations are weighted by the size of the census tracts areas. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A23: Informal public goods provision

	Would seek help from informal leader of the community if a problem with:			Would not seek help from anyone if a problem with:		
	Public goods provision	Security, civil, or legal dispute	Finance	Public goods provision	Security, civil, or legal dispute	Finance
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory	0.055	-0.059	-0.012	0.052**	0.045***	0.059*
	(0.059)	(0.044)	(0.010)	(0.022)	(0.012)	(0.029)
Mean of dep. var.	0.220	0.090	0.013	0.084	0.046	0.115
Observations	2,314	2,314	2,314	2,314	2,314	2,314

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the probability of seeking help from an informal community leader or not seeking help from anyone to solve problems with public goods provision, finance, and security, civil, and legal disputes. The term "informal community leader" is used as a proxy for "gang leader" because, for security reasons, the survey could not directly mention the gangs. When conducting the pilot of the survey, we have verified that all the pilot respondents associated the term "informal leader of the community" with the gangs. The unit of observation is an individual. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A24: Socioeconomic conditions after exposure to gang control, subsample of employed individuals

	Household characteristics				
	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has internet	Has motocycle
	(1)	(2)	(3)	(4)	(5)
Gang territory	-0.047**	-0.075***	0.005**	-0.152***	-0.017**
	(0.022)	(0.020)	(0.002)	(0.032)	(0.007)
Mean of dep. var.	0.940	0.105	0.004	0.207	0.039
Observations	41,073	41,073	41,073	39,733	39,285
	Household characteristics				
	Has a car	Has a phone	Has a TV	Has a computer	Number of rooms
	(6)	(7)	(8)	(9)	(10)
Gang territory	-0.224***	-0.134***	-0.018***	-0.185***	-0.685***
	(0.047)	(0.032)	(0.005)	(0.040)	(0.200)
Mean of dep. var.	0.466	0.683	0.959	0.389	3.069
Observations	39,907	39,961	40,115	39,902	41,073
	Individual characteristics			1st principal component of the:	
	Can read and write	Has a high school degree	Has a university degree	Household characteristics	Individual characteristics
	(11)	(12)	(13)	(14)	(15)
Gang territory	-0.019***	-0.180***	-0.184***	-0.095***	-0.128***
	(0.004)	(0.033)	(0.033)	(0.020)	(0.022)
Mean of dep. var.	0.967	0.624	0.333	0.388	0.635
Observations	90,944	88,653	88,653	38,747	88,653

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the variables from the 2007 census for the subsample of employed individuals. For the household characteristics, we limit the sample to those observations for which the head of the household is employed. The unit of observation is a household or an individual, depending on which characteristics are being considered. In the individual-level regressions, the sample consists of the entire population of employed individuals. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A25: Socioeconomic conditions after exposure to gang control, subsample of formally employed individuals

	Household characteristics				
	Has sewerage infrastructure	Use electricity for lighting and cooking	No bathroom	Has internet	Has motocycle
	(1)	(2)	(3)	(4)	(5)
Gang territory	-0.045**	-0.074***	0.004***	-0.152***	-0.015*
	(0.020)	(0.020)	(0.001)	(0.035)	(0.008)
Mean of dep. var.	0.947	0.122	0.003	0.247	0.043
Observations	28,201	28,201	28,201	27,314	26,937
	Household characteristics				
	Has a car	Has a phone	Has a TV	Has a computer	Number of rooms
	(6)	(7)	(8)	(9)	(10)
Gang territory	-0.219***	-0.124***	-0.011**	-0.173***	-0.700***
	(0.048)	(0.032)	(0.005)	(0.041)	(0.210)
Mean of dep. var.	0.521	0.727	0.969	0.452	3.230
Observations	27,418	27,442	27,556	27,423	28,201
	Individual characteristics			1st principal component of the:	
	Can read and write	Has a high school degree	Has a university degree	Household characteristics	Individual characteristics
	(11)	(12)	(13)	(14)	(15)
Gang territory	-0.009***	-0.170***	-0.195***	-0.092***	-0.125***
	(0.002)	(0.032)	(0.036)	(0.021)	(0.022)
Mean of dep. var.	0.987	0.740	0.416	0.415	0.707
Observations	63,455	62,136	62,136	26,564	62,136

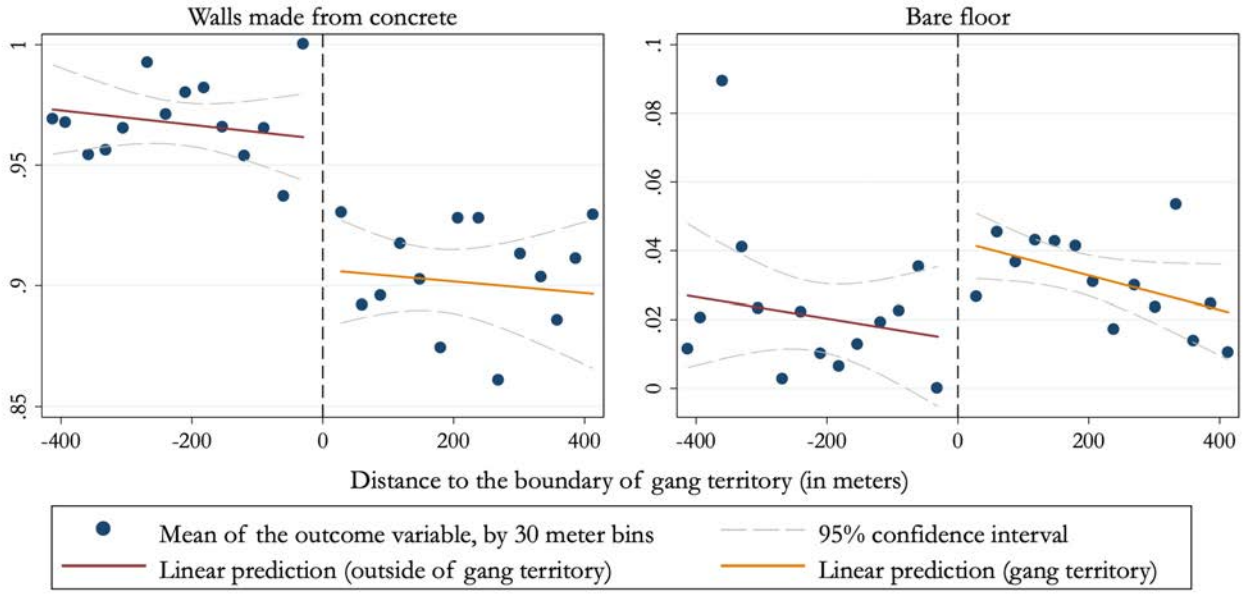
Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the variables from the 2007 census for the subsample of formally employed individuals. For the household characteristics, we limit the sample to those observations for which the head of the household is employed. The unit of observation is a household or an individual, depending on which characteristics are being considered. In the individual-level regressions, the sample consists of the entire population of formally employed individuals. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Table A26: Hours worked

	Hours worked	Number of hours would work for a wage of:		
		$5 per hour	$10 per hour	$20 per hour
	(1)	(2)	(3)	(4)
Gang territory	0.050	-0.371	0.155	0.336
	(0.421)	(0.341)	(0.239)	(0.203)
Mean of dep. var.	8.613	7.596	8.280	8.245
Observations	2,071	2,314	2,314	2,314

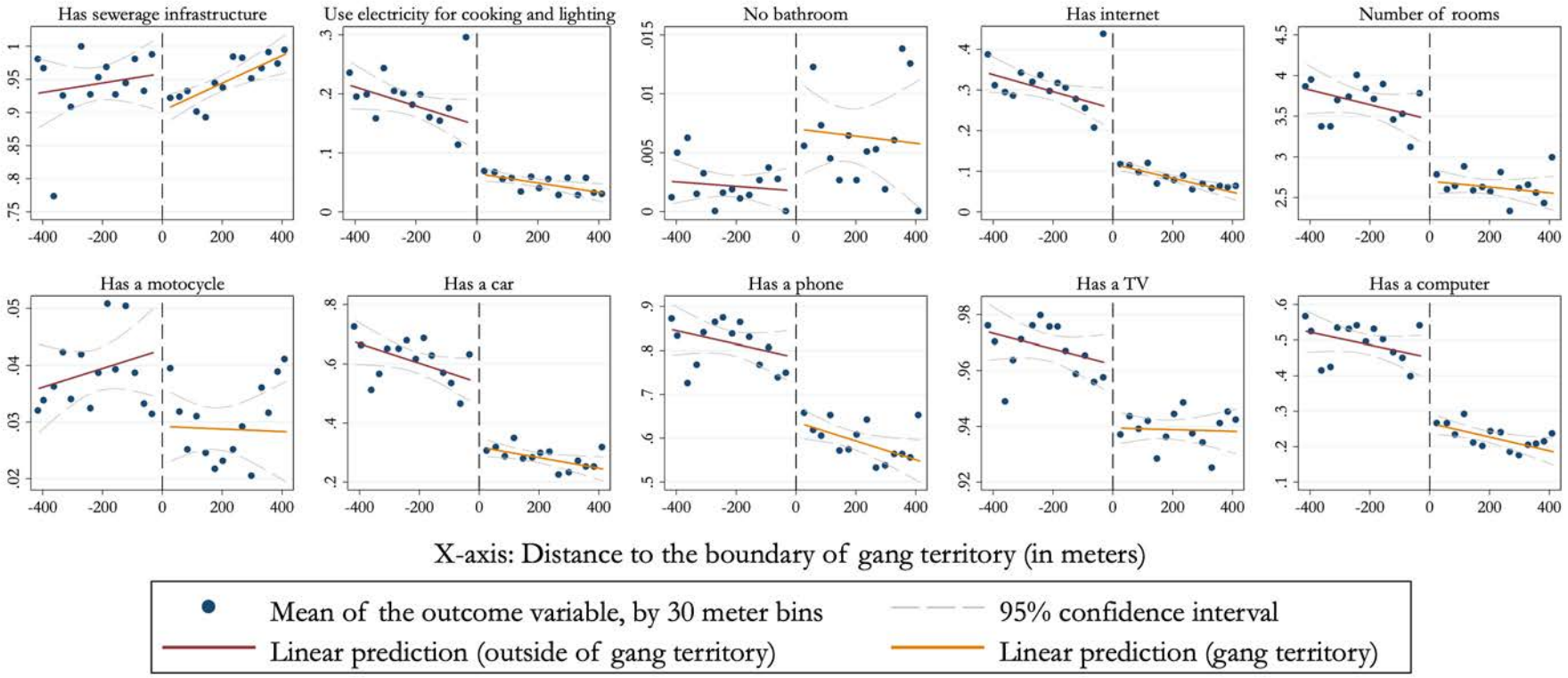
Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the number of hours worked and for individuals' willingness to work. All the variables come from the 2019 survey. The unit of observation is an individual. Omitted controls include a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundary of gang territory (separately for each side of the boundary).

Figure A1: Socioeconomic conditions after 10 years of gang control: Dwelling characteristics



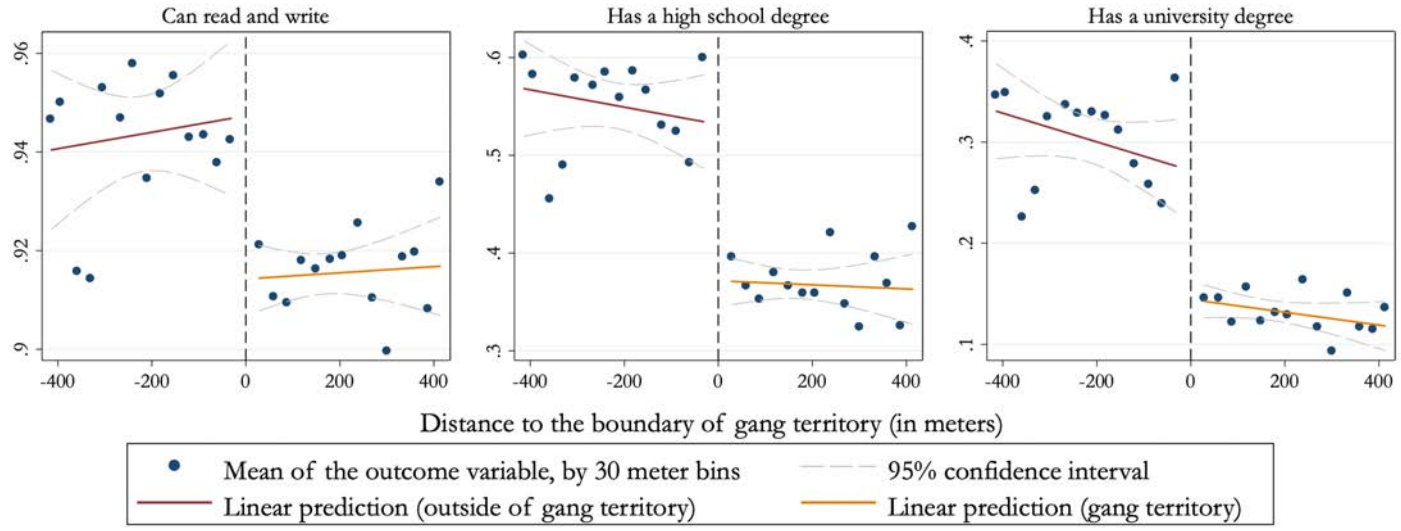
Note: The figure illustrates the results for the dwelling characteristics from Table 1. All the variables come from the 2007 census. The unit of observation is a dwelling. All the variables represent the share of dwellings that have the outcome variable (walls from concrete and a bare floor). The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure A2: Socioeconomic conditions after 10 years of gang control: Household characteristics



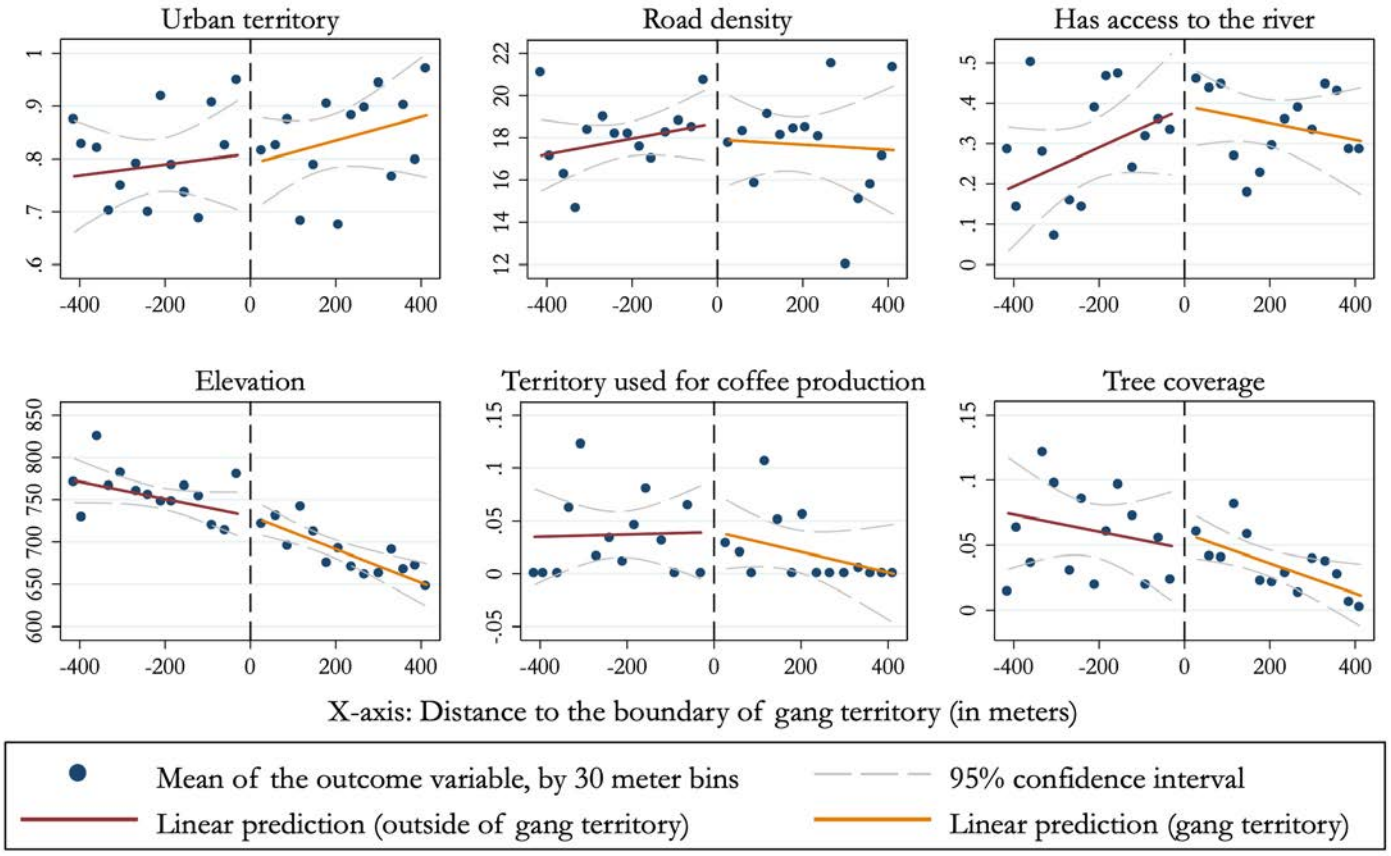
Note: The figure illustrates the results for the households characteristics from Table 1. All the variables come from the 2007 census. The unit of observation is a household. All the variables except "Number of rooms" represent the share of households that have the outcome variable (a car, a tv, etc.); "Number of rooms" is the number of rooms in the apartment or house where the household lives. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure A3: Socioeconomic conditions after 10 years of gang control: Individual characteristics



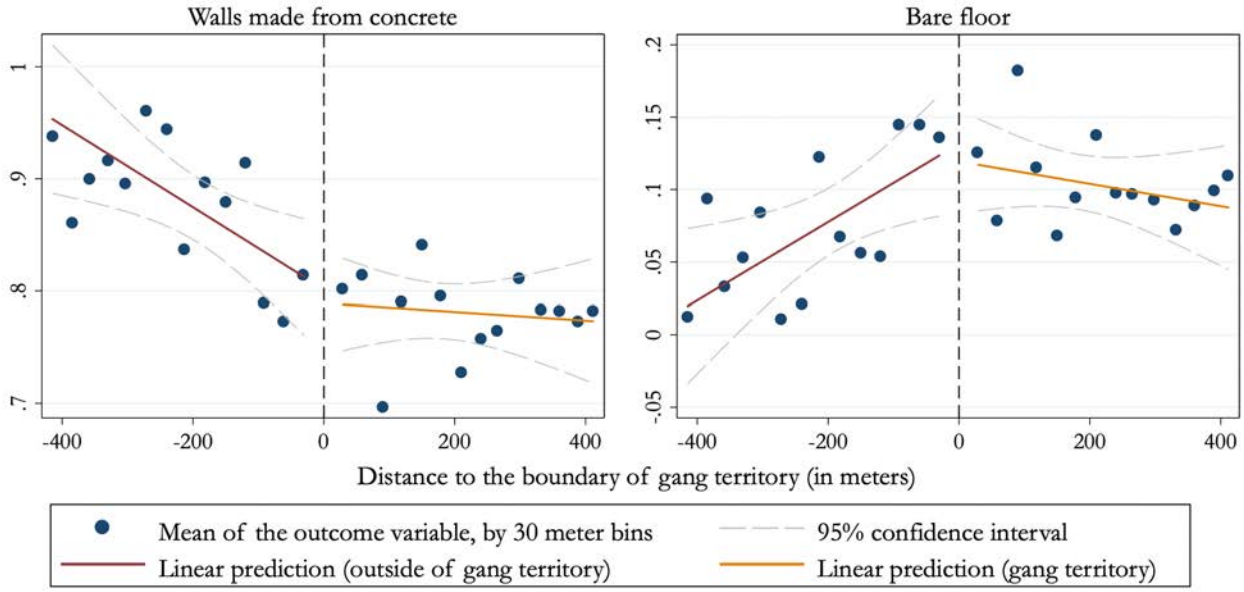
Note: The figure illustrates the results for the individual characteristics from Table 1. All the variables come from the 2007 census. The unit of observation is an individual. All the variables represent the share of individuals that have the outcome variable (can read and write, have a high school degree, etc.). The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure A4: Socioeconomic conditions before the gangs' arrival: Neighborhood characteristics



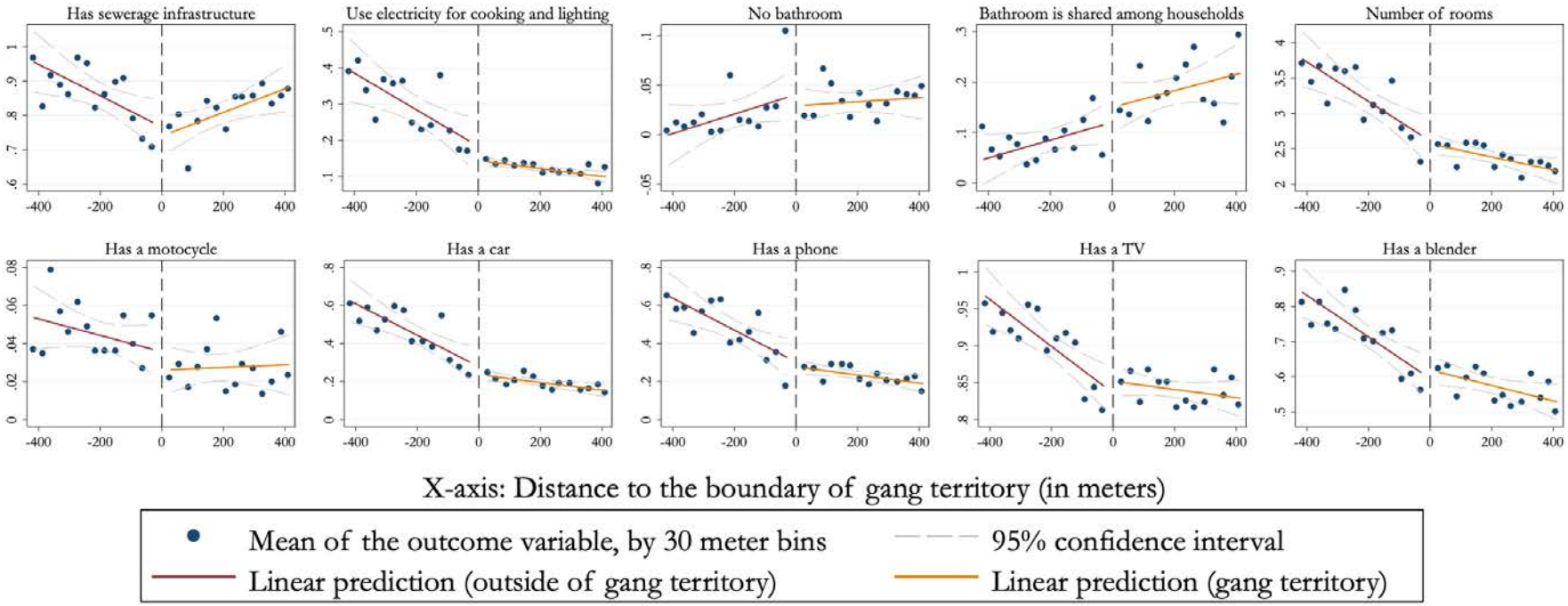
Note: The figure illustrates the results for the neighborhood characteristics from Table 2. The unit of observation is a census tract. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure A5: Socioeconomic conditions before the gangs' arrival: Dwelling characteristics



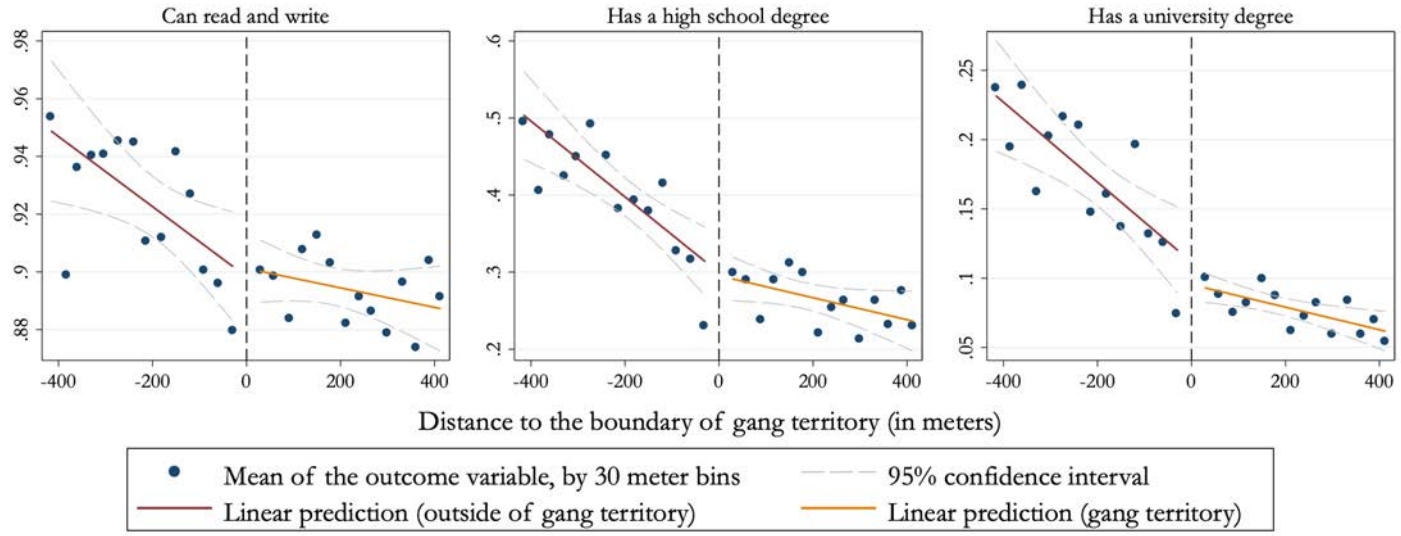
Note: The figure illustrates the results for the dwelling characteristics from Table 2. All the variables come from the 1992 census. The unit of observation is a dwelling. All the variables represent the share of dwellings that have the outcome variable (walls from concrete and a bare floor). The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure A6: Socioeconomic conditions before the gangs' arrival: Household characteristics



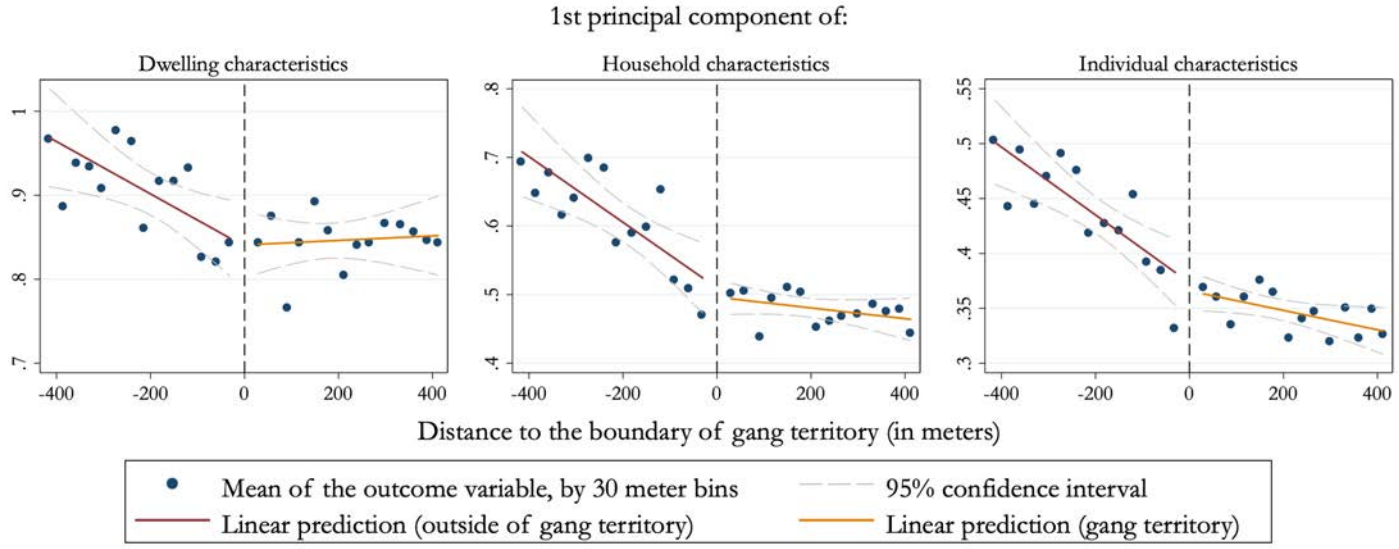
Note: The figure illustrates the results for the households characteristics from Table 2. All the variables come from the 1992 census. The unit of observation is a household. All the variables except "Number of rooms" represent the share of households that have the outcome variable (a car, a tv, etc.); "Number of rooms" is the number of rooms in the apartment or house where the household lives. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure A7: Socioeconomic conditions before the gangs' arrival: Individual characteristics



Note: The figure illustrates the results for the individual characteristics from Table 2. All the variables come from the 1992 census. The unit of observation is an individual. All the variables represent the share of individuals that have the outcome variable (can read and write, have a high school degree, etc.). The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure A8: Socioeconomic conditions before the gangs' arrival: 1st principal components of the dwelling, household, and individual characteristics



Note: The figure illustrates the results for the 1st principal components of the dwelling, household, and individual characteristics from Table 2. All the variables come from the 1992 census. The unit of observation is a dwelling, a household, and an individual, depending on the specification. All the variables are normalized to vary between zero and one with higher values representing better outcomes. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure A9: Placebo natural boundaries

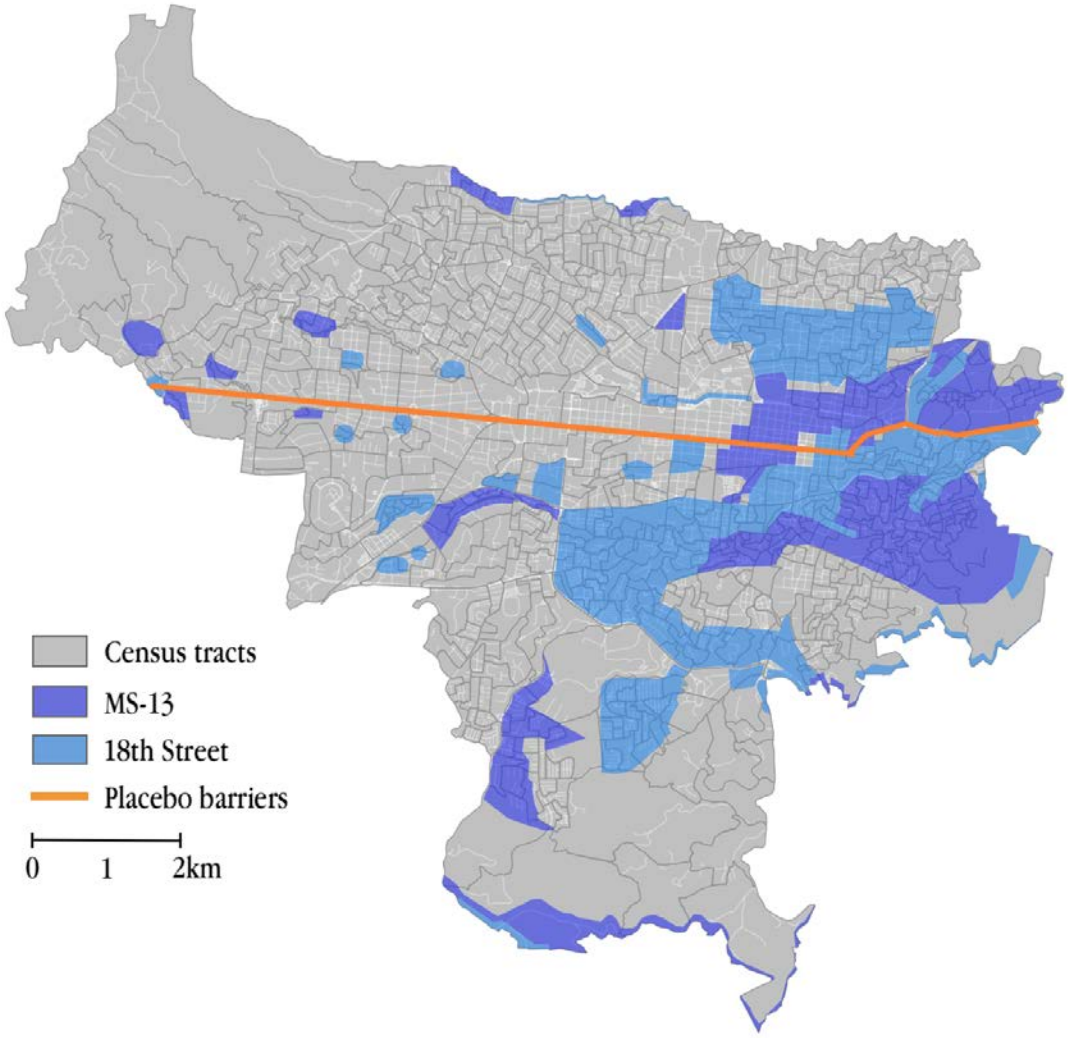
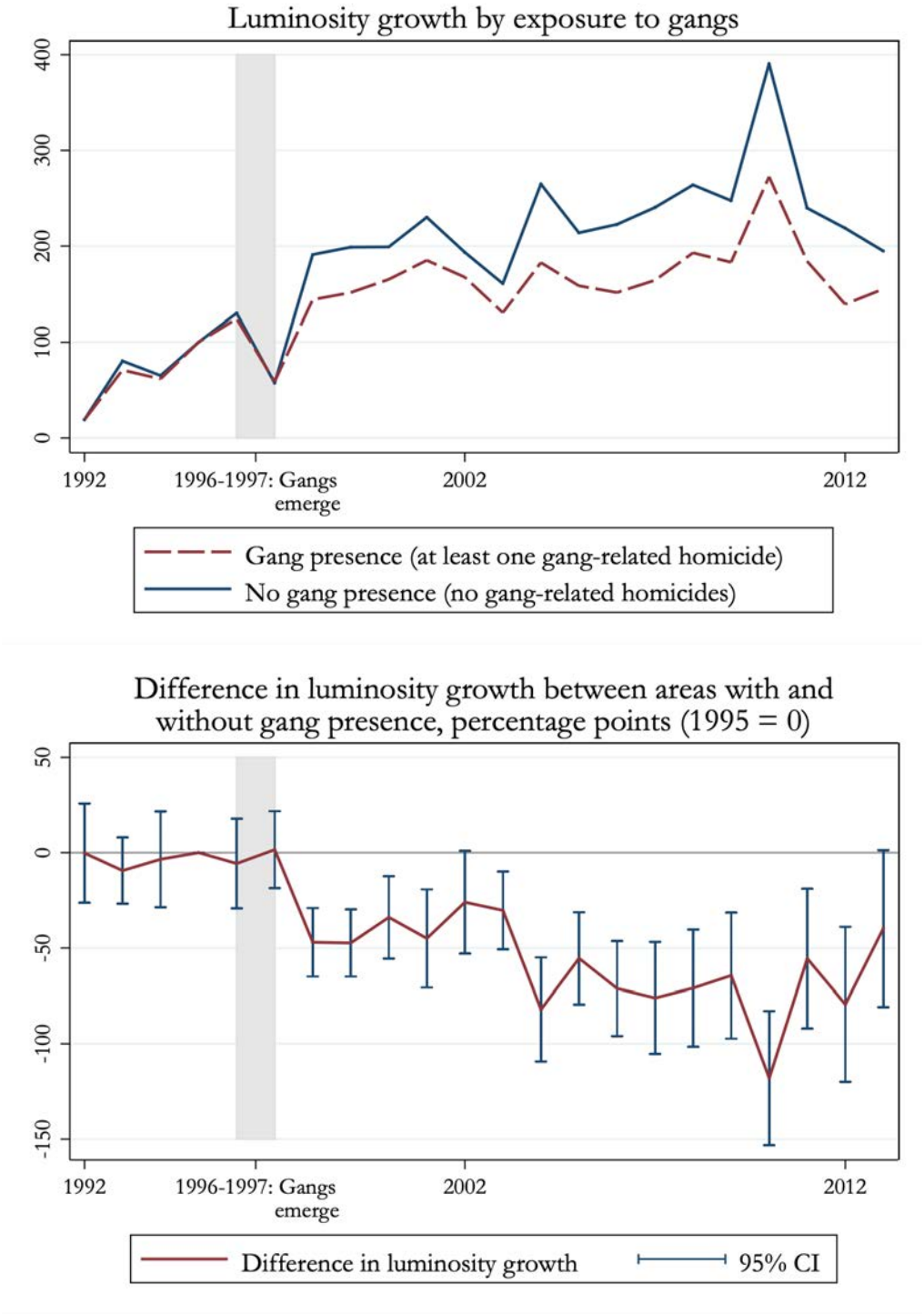
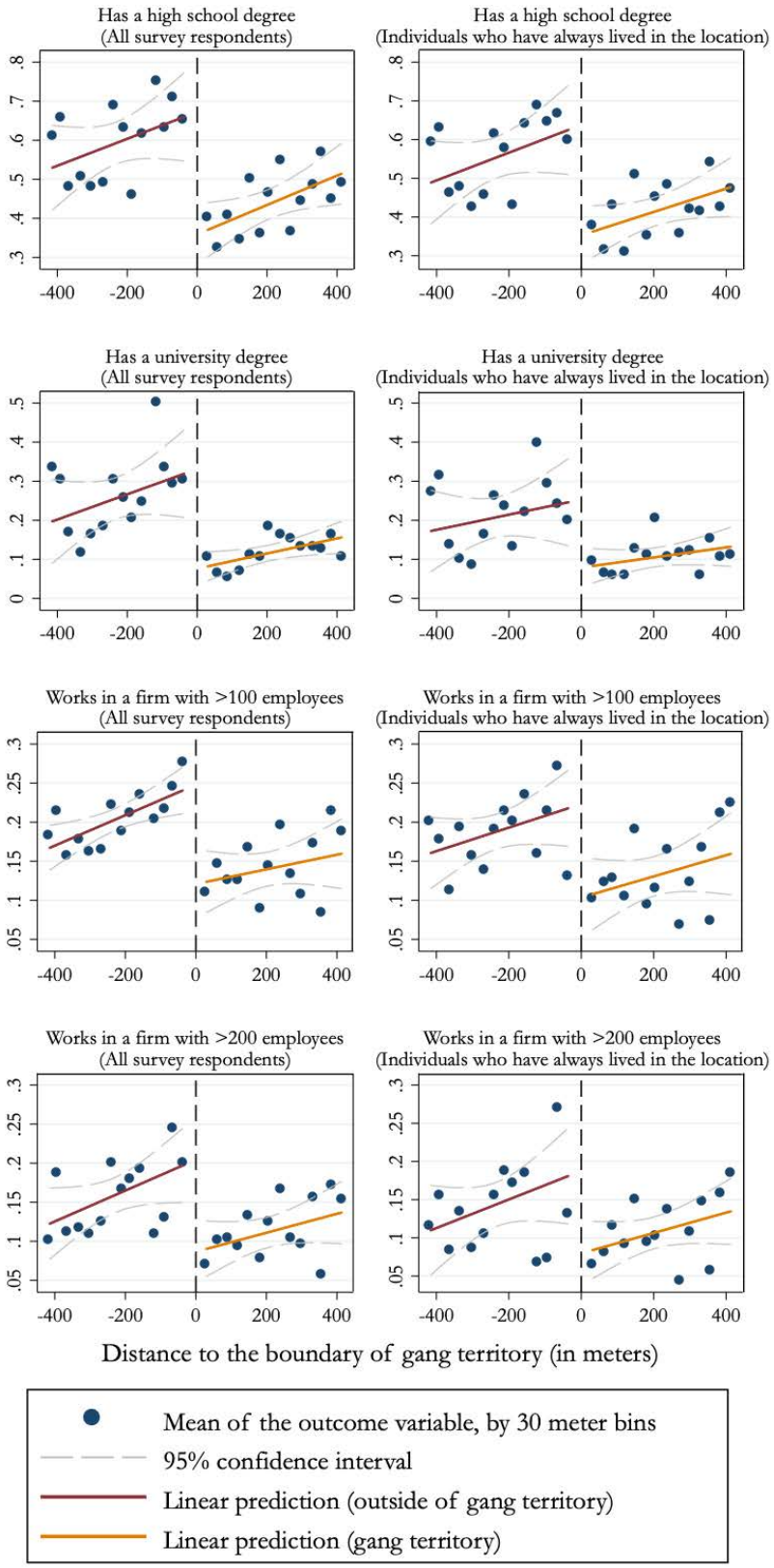


Figure A10: Gang presence and nighttime light density



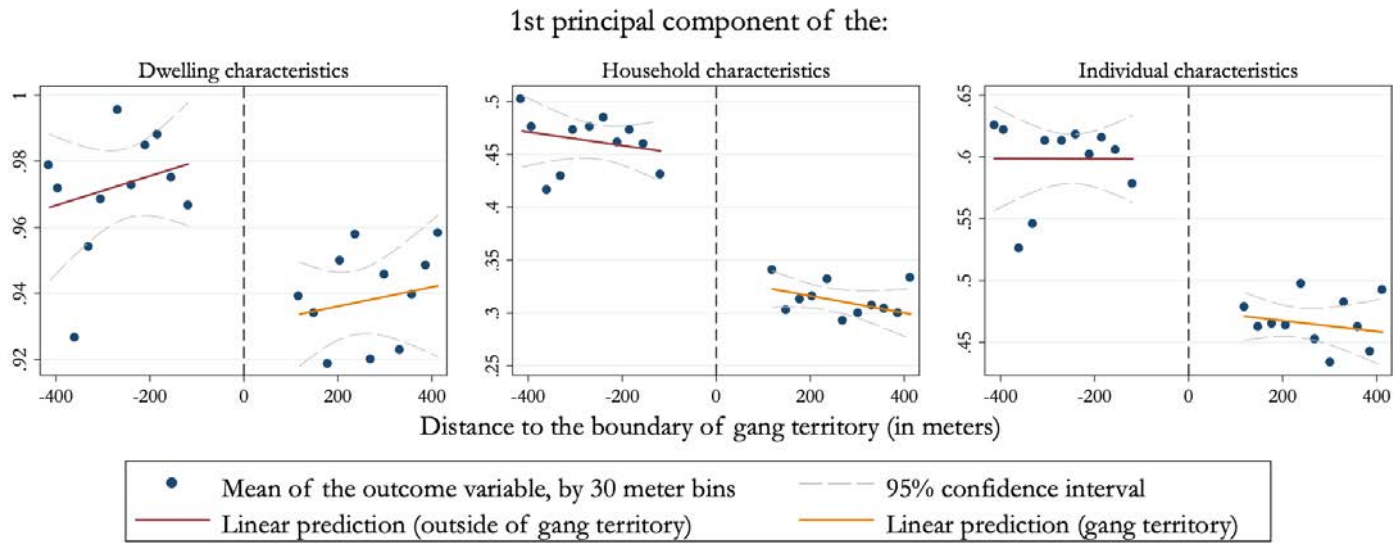
Note: The first part of the figure illustrates the growth in nighttime light density in grid cells with and without gang presence. The data are in percentage points, normalized to be equal to 100 percent in 1995, one year before the announcement of the change in the United States immigration policy. The second part of the figure presents an event study graph for the average percentage point difference in nighttime light density between grid cells with and without gang presence.

Figure A11: IN-SAMPLE MIGRATION IS NOT DRIVING THE RESULTS: 2019 SURVEY



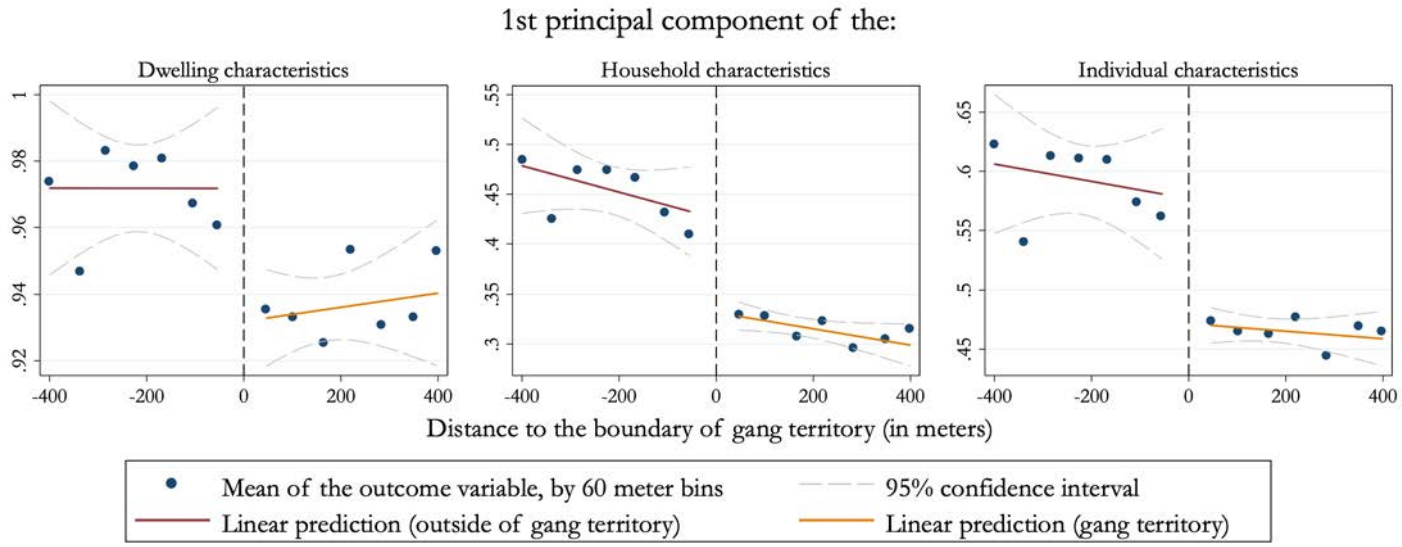
Note: The figure illustrates the results from Table A5. The left-hand side of the figure presents the results for the full sample (Panel A of Table A5), the right-hand side—for the subsample of individuals who have lived in the same location all their life (Panel B of Table A5). The results are very similar. The vertical axis represents the average value of household income; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure A12: Excluding observations within 100 meters of the boundary of gang territory



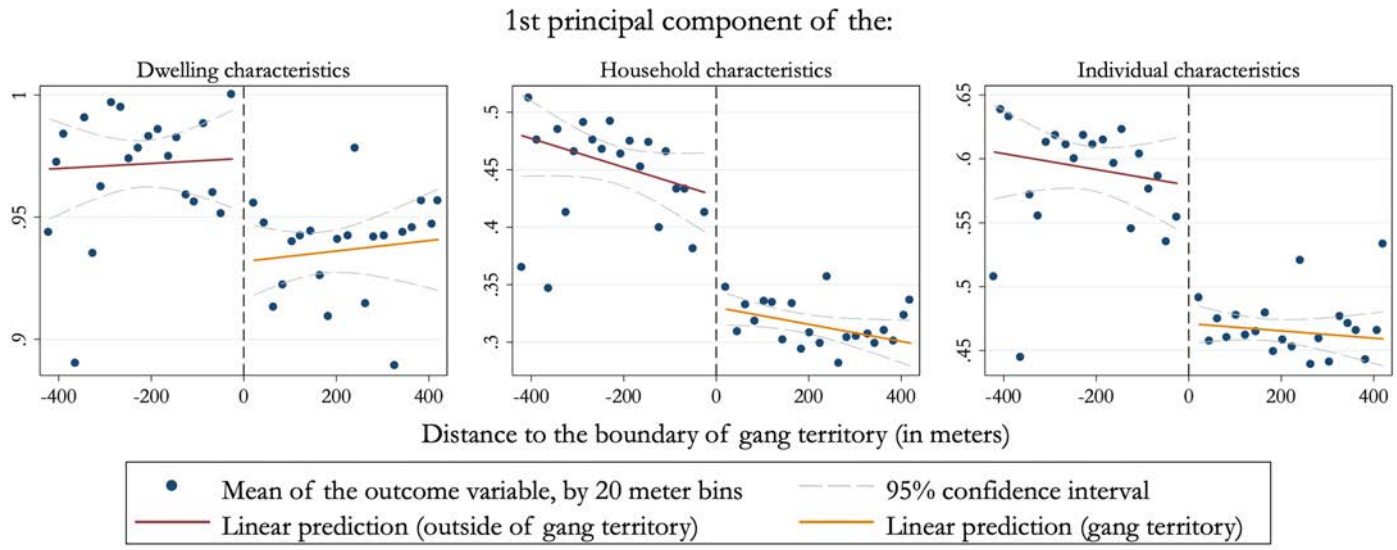
Note: The figure illustrates the regression discontinuity plots for the 1st principal components of the dwelling, household, and individual characteristics from the 2007 census after excluding observations within 100 meters of the boundary of gang territory. The unit of observation is a dwelling, a household, and an individual, depending on the specification. All the variables are normalized to vary between zero and one with higher values representing better outcomes. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure A13: Alternative bandwidth: 60 meter bins



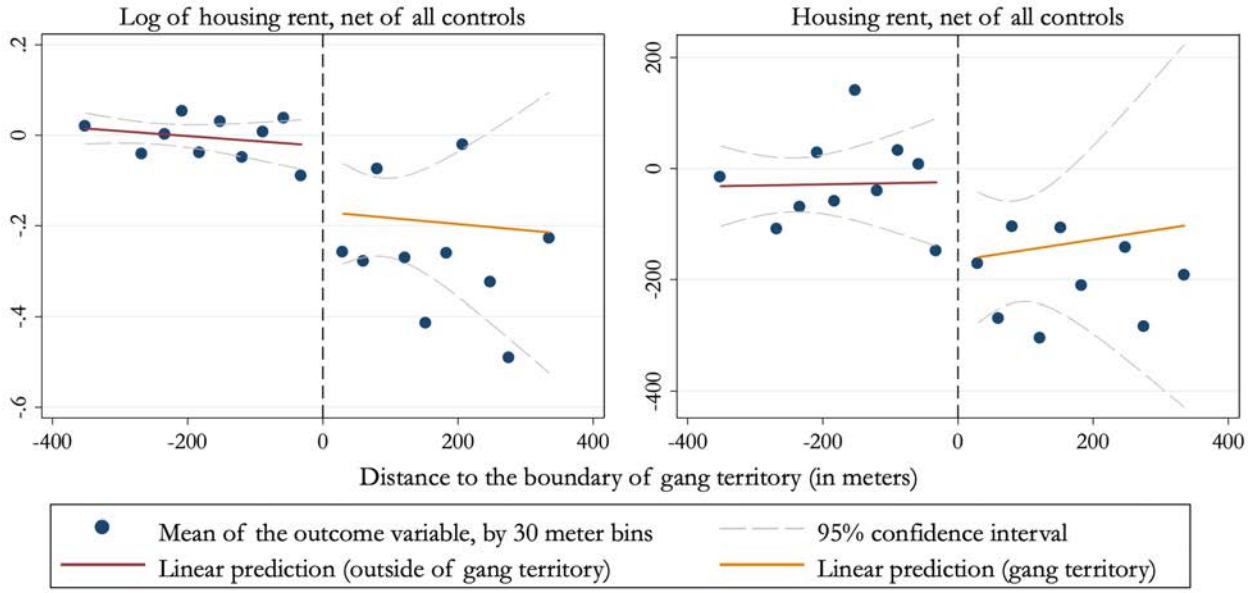
Note: The figure illustrates the regression discontinuity plots for the 1st principal components of the dwelling, household, and individual characteristics from the 2007 census, using a larger bandwidth than in the baseline specification: the dots represent the average value of the outcome variable for 60 meter bins. The unit of observation is a dwelling, a household, and an individual, depending on the specification. All the variables are normalized to vary between zero and one with higher values representing better outcomes. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs.

Figure A14: Alternative bandwidth: 20 meter bins



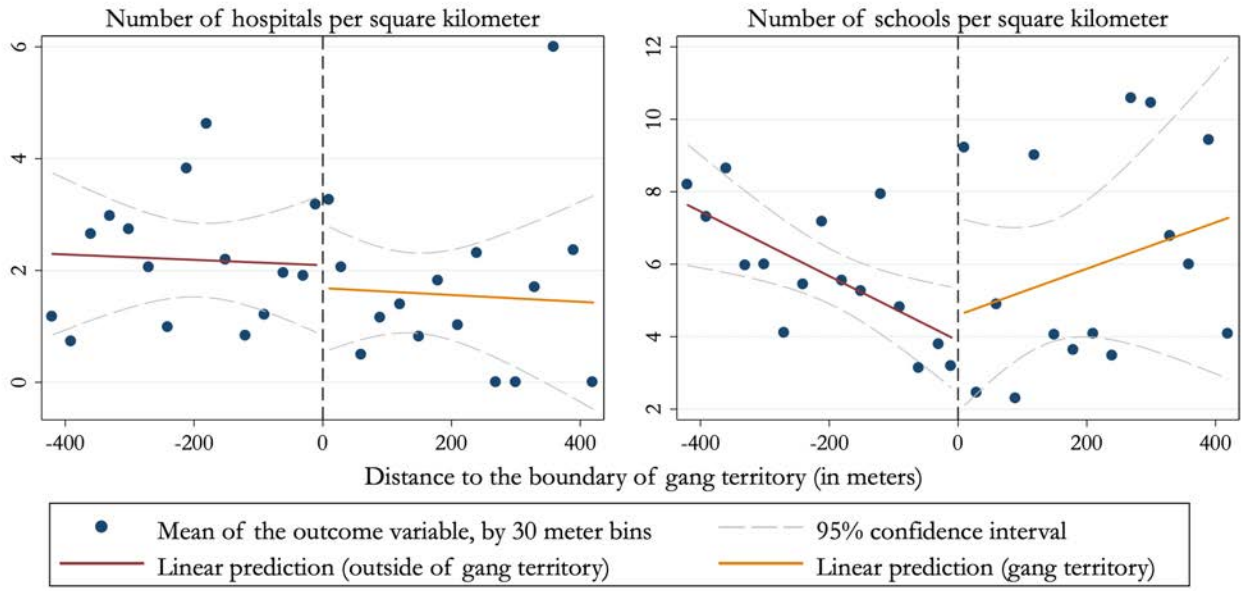
Note: The figure illustrates the regression discontinuity plots for the 1st principal components of the dwelling, household, and individual characteristics from the 2007 census, using a narrower bandwidth than in the baseline specification: the dots represent the average value of the outcome variable for 20 meter bins. The unit of observation is a dwelling, a household, and an individual, depending on the specification. All the variables are normalized to vary between zero and one with higher values representing better outcomes. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs.

Figure A15: Housing rent



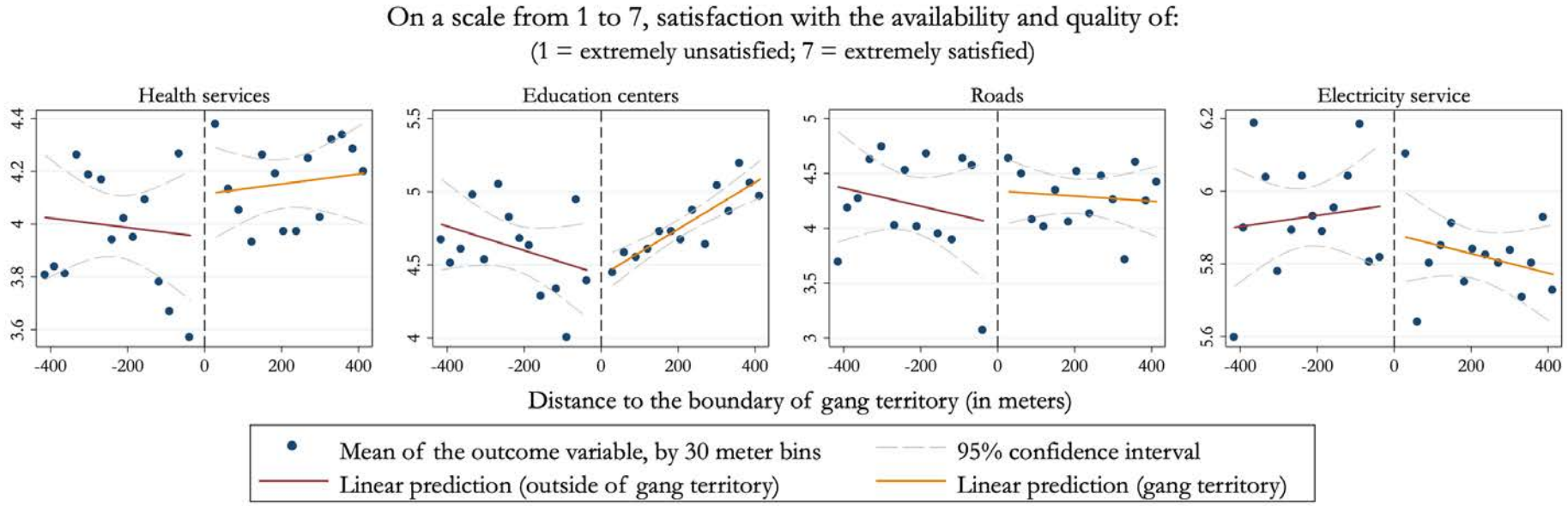
Note: The figure illustrates the regression discontinuity plots for the residual of housing rent and log housing rent after subtracting the effects of all the control. The unit of observation is an apartment listing. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. Omitted controls include dummies for the number of rooms, dummies for the number of bathrooms, a quadratic polynomial in square meters, a dummy for whether the apartment is being rented out by an agency rather than an individual, and a linear trend in distance to the boundary of gang territory, separately for locations on each side of the boundary.

Figure A16: Availability of public goods



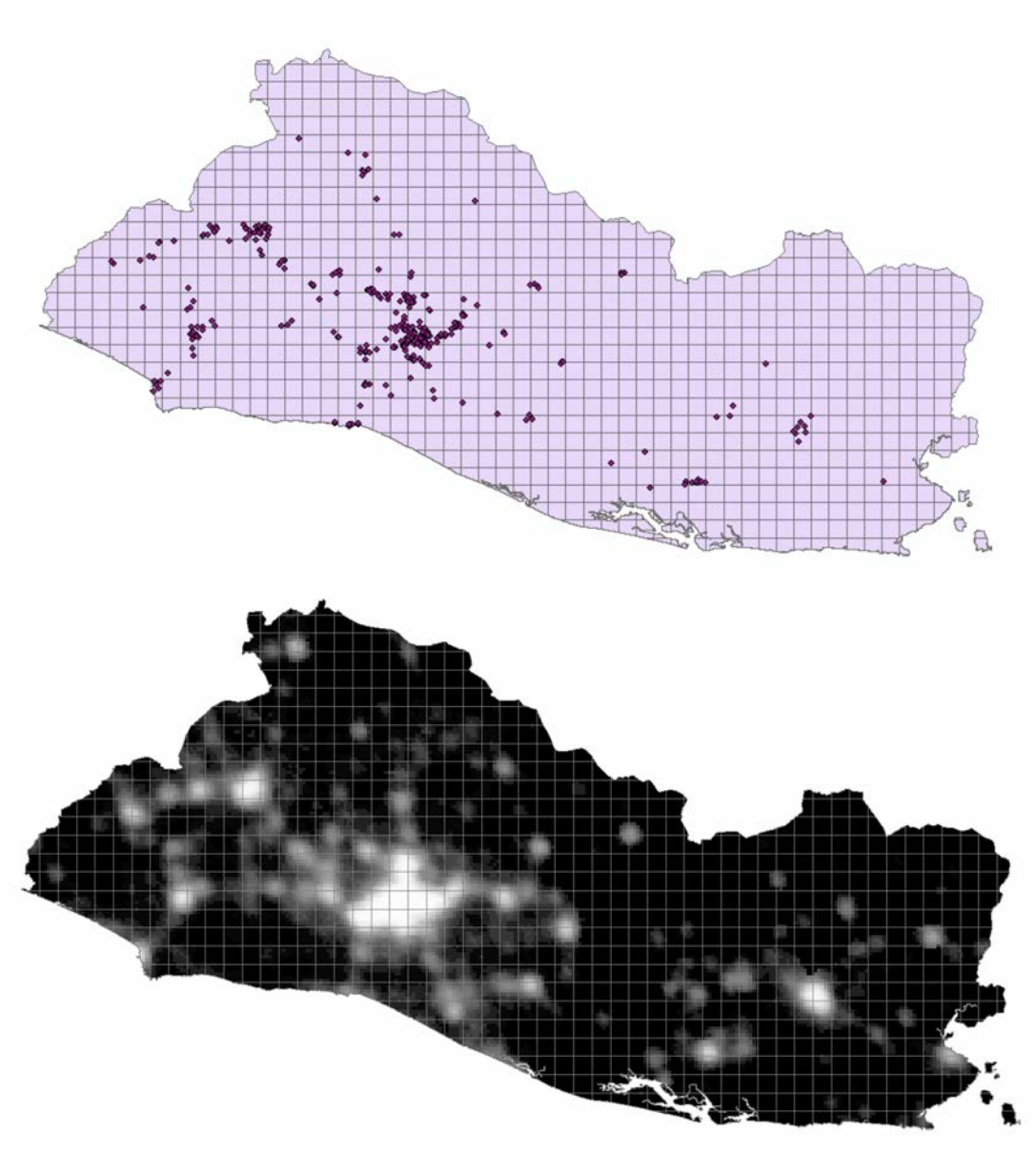
Note: The figure presents the regression discontinuity plots for the number of hospitals and schools per square kilometer. The unit of observation is a 10 meter bin, denoting distance to the boundary of gang territory. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure A17: Satisfaction with the availability and quality of public goods



Note: The figure presents the regression discontinuity plots for the questions about satisfaction with the availability and quality of public goods from the 2019 survey. The unit of observation is an individual. For all the questions, the respondents were asked to rate the availability and quality of public goods on a scale from 1 (extremely unsatisfied) to 7 (extremely satidfied). The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 30 meter bin.

Figure A18: Grid squares, gang homicides in 2003-2004, and nighttime light density



Note: The top part of the figure presents the locations of the gang-related homicides in 2003-2004. The bottom part of the figure presents the map of nighttime light density in 1995, one year before the change in the United States immigration policy. Both parts of the figure also present the boundaries of the grid cells used in the analysis.

Figure A19: Grid squares, gang homicides in 2003-2004, and nighttime light density

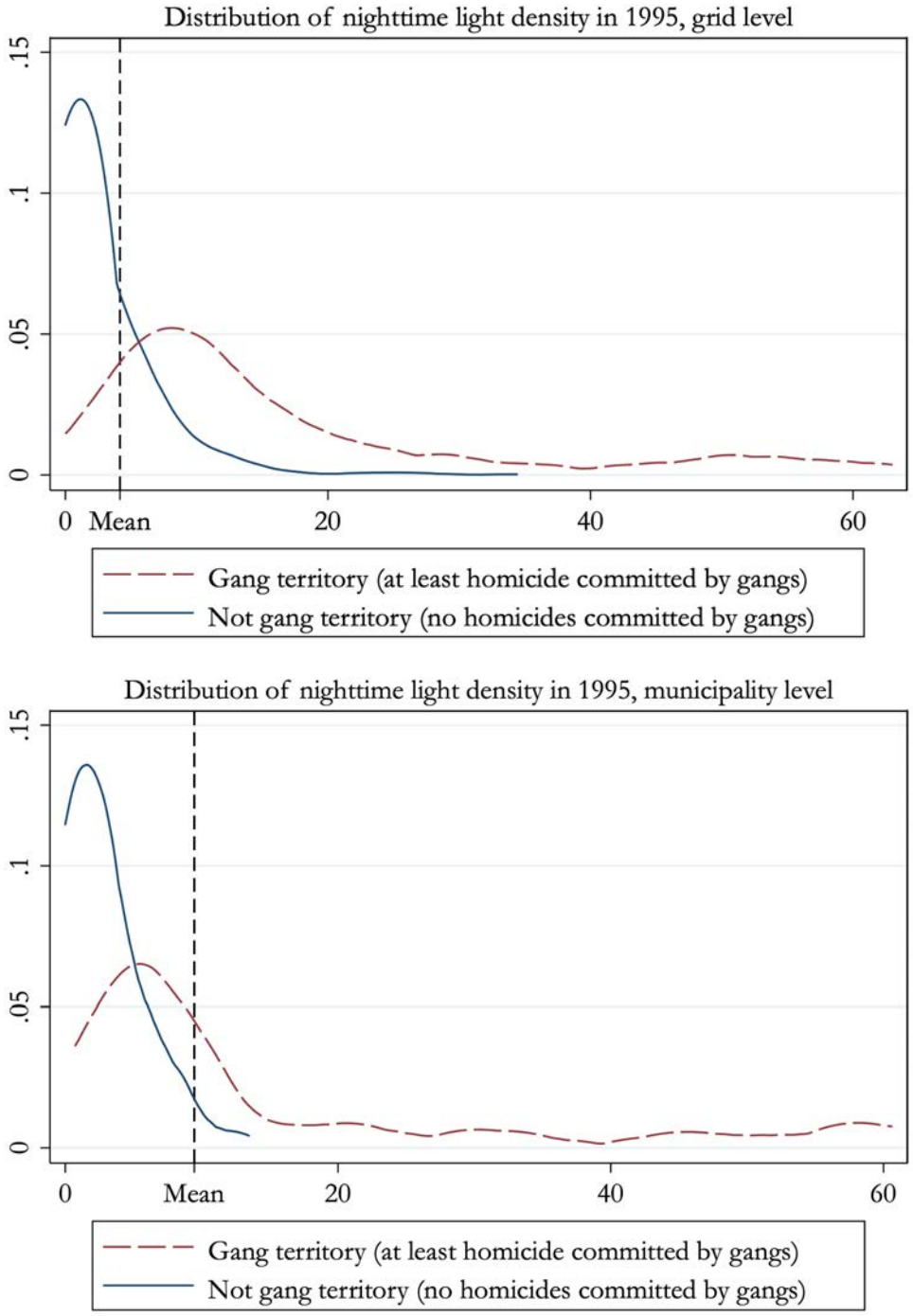
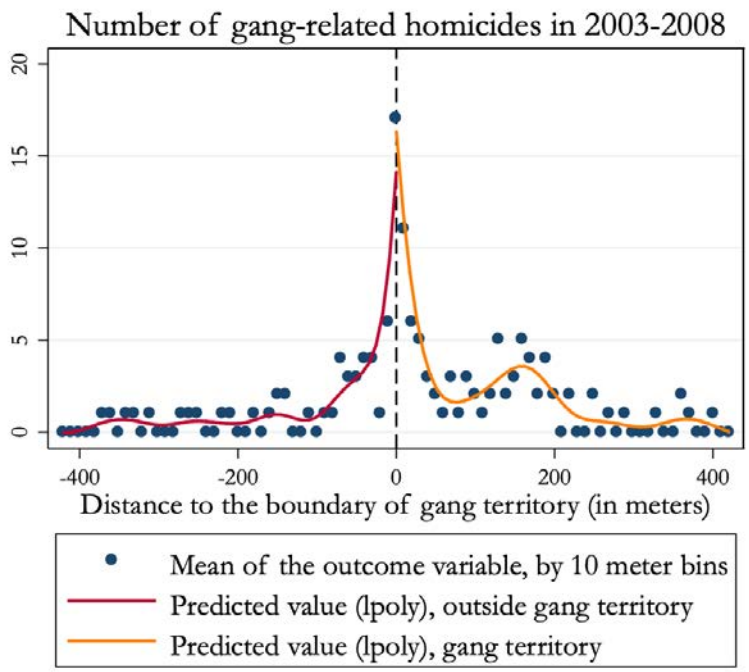
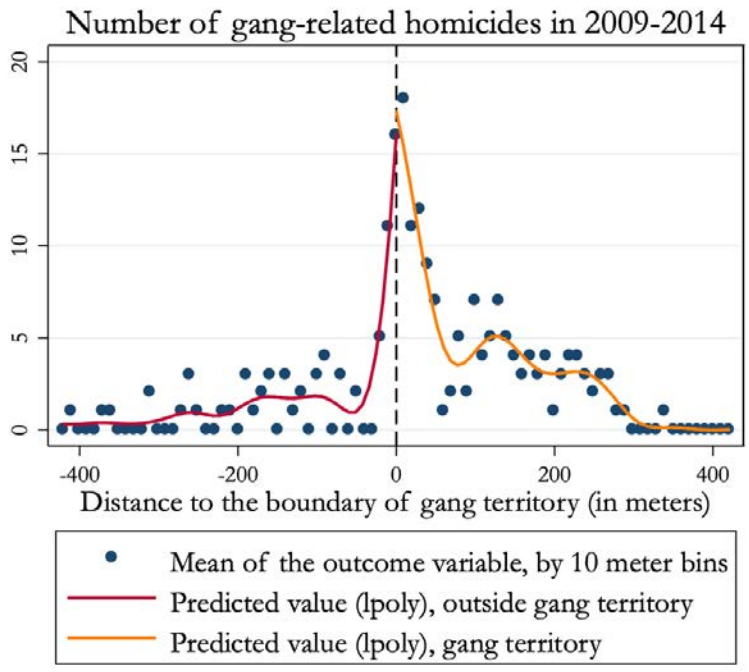


Figure A20: Gang-related homicides, by distance to the boundary of gang territory

Panel A



Panel B



Note: The figure illustrates the number of gang-related homicides in 2003-2008 (Panel A) and 2009-2014 (Panel B), by distance to the boundary of gang territory. In both cases, the largest number of the homicides took place right at the boundary of gang territory. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundary of gang territory. Neighborhoods to the left of the dashed line are located outside of gang territory; areas to the right are controlled by the gangs. The dots represent the average value of the outcome variable in that 10 meter bin.