GANGS, LABOR MOBILITY, AND DEVELOPMENT

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We study how criminal organizations affect economic development. We exploit a natural experiment in El Salvador, where these criminal organizations emerged due to an exogenous shift in American immigration policy that led to the deportation of gang leaders from the United States to El Salvador. Using a spatial regression discontinuity design that focuses on the gang-created system of borders, 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'

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mobility, affecting their labor-market options by preventing them from commuting to other parts of the city. The results are not determined by high rates of selective migration, differential exposure to extortion and violence, or differences in public goods provision.

1. INTRODUCTION

How do nonstate armed actors affect economic development? On the one hand, they can impede the state 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 state is weak and unable to control parts of its territory, nonstate armed actors may take on the role of the state in fulfilling essential institutional functions, potentially enabling economic growth (Tilly, 1985, Olson, 1993, Bates et al., 2002, Ibáñez et al., 2019, De la Sierra, 2020) and competing for the "hearts and minds" of civilians (Ibáñez et al., 2019, De la Sierra, 2020, Blattman et al., 2022). Overall, how and why nonstate armed actors affect development remains an open question.

In this paper, we study how a specific type of nonstate armed actor—namely, criminal organizations—affects socioeconomic development. In urban areas in the developing world, millions of people live under some form of criminal governance (Lessing, 2021, Blattman et al., 2022). Criminal organizations function mainly in urban centers, often controlling parts of the city, while other parts are controlled by the state. In particular, this paper analyzes how two of the world's most prolific gangs—MS-13 (*Mara Salvatrucha*) and 18th Street (*Barrio 18*)—affected socioeconomic development in El Salvador.[1]

We exploit a natural experiment that took place in El Salvador. Before the mid-1990s, El Salvador had no significant criminal organizations. However, in 1996, after a shift in American immigration policy that made it easier to deport individuals—especially those with criminal backgrounds—back to their country of origin, many Salvadoran migrants who were members of California-based gangs (specifically, MS-13 and 18th Street) were deported back to El Salvador. These deported gang members reestablished their gangs in

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

El Salvador and quickly gained control over certain parts of the country. 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 neighborhoods in El Salvador's capital, San Salvador, to implement a spatial regression discontinuity design. These territorial demarcations were formed soon after the gang leaders arrived in 1996, and they roughly coincide with existing natural barriers, such as boulevards and highways. We measure the outcome variables using the 2007 census and our own geocoded survey, which we conducted in 2019 in both gang and nongang neighborhoods.

Our results 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 less monthly household income (the sample mean is $625) compared to individuals living in neighboring nongang locations and have a 12-percentage-point lower probability of working in a firm with at least 100 employees. The results are highly robust to the choice of empirical specifications.

These differences in living standards did not exist before the gang leaders arrived. We replicate the regression discontinuity design with data from the 1992 census to show that, before the gangs emerged, areas on both sides of the gang borders had similar socioeconomic and geographic characteristics, as well as similar levels of crime. These results are consistent with the fact that the boundaries of gang territory were not formed based on pre-existing socioeconomic differences, but rather on the availability of natural barriers (i.e., major roads). We also show that the natural barriers are not associated with differences in socioeconomic conditions when they do not determine gang territorial control.

An important mechanism through which gangs affect socioeconomic development in the neighborhoods they control is related to restrictions on individuals' mobility. The gangs' long-term survival depends on their ability to secure the borders of their territory and prevent the police and rival gang members from arresting or killing them. Therefore, to maintain secure control over their territory, both MS-13 and 18th Street instituted a system of checkpoints, not allowing individuals to freely enter or leave gang-controlled neigh-

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borhoods (ICG, 2018). The security of their territory also allows the gangs to use it as a bridgehead from which they conduct extortion raids to neighboring areas.

Using the data from our geocoded survey, we perform a spatial regression discontinuity design to document the presence of 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 nongang side of the boundaries. They are also more likely to say that gang-imposed borders prevented them from getting jobs in large firms in other parts of the city, less likely to say that there is freedom of movement in the neighborhood where they live, and less likely to have been to places outside of San Salvador. However, those individuals do not have lower levels of mobility per se. Using cell phone ping data, we show that, while residents of gang-controlled neighborhoods are largely confined in their movements to gang territory, they travel the same distance as their peers on the other side of the gang boundaries.

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, labor-market conditions do not change directly at the boundaries of gang territory (i.e., there is no change in firm size, wages, profitability, or the number of business establishments). Instead, we show that, after the emergence of the gangs, new business establishments increasingly opened in areas far away from gang territory. Nonetheless, residents of nongang neighborhoods close to the boundaries were able to take advantage of these new labor-market opportunities by commuting to parts of the city where the largest firms are located, whereas individuals living in gang areas were prevented from doing so by the restrictions on their mobility.

Another 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 nongang areas. The differences in educational attainment contribute to further widening the income gap between gang and nongang territories.

We also examine other potential determinants of lower socioeconomic development in gang-controlled neighborhoods, but we find that, in this context, they cannot explain the results. In particular, we demonstrate that individuals and firms on both sides of the boundaries are equally exposed to extortion and other violent crimes. This result is explained by the fact that, since gang members are not subject to the same mobility restrictions as

the other people living on their territory, they conduct regular raids into neighboring areas outside their immediate control. This result is fully consistent with the finding that labor-market conditions do not change directly at the boundaries of gang territory.

Similarly, we find no differences in the availability and quality of public goods provision (e.g., schools and hospitals), consistent with the qualitative evidence suggesting that the government has been willing to provide public goods in gang areas to avoid ostracizing the residents of those locations.[2] In turn, because the gangs benefit from public goods provision in their neighborhoods, they have been willing to allow the government to provide (nonpolice-related) services in the areas they control.[3] Finally, we show that the results are not driven by higher levels of unemployment (or informal employment) in gang-controlled neighborhoods and that selective migration of individuals across the boundaries of gang territory can explain no more than 14% of the gap in socioeconomic development between the gang and nongang neighborhoods.

Finally, we use data from all of El Salvador to perform a difference-in-differences design that analyzes how gang presence affected the spatial allocation of economic activity in the country. We find that, after the arrival of the gangs, municipalities least exposed to gang activity experience significantly more openings of new business establishments, as well as higher growth in nighttime light density and household income. These results highlight how the economic costs of mobility restrictions increase over time: as employment opportunities improve in places without gang activity, it becomes increasingly important to be able to commute to work in those areas.

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 nonstate

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[2]In addition, the government and other political actors are motivated by electoral considerations: without providing 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. To campaign in gang-controlled neighborhoods, political parties need to provide public goods in those areas.

[3]We find that the gangs themselves provide very limited public services, the probability of which does not change at the boundaries of gang territory. This result may be different in other settings where nonstate 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 also have limited 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 nonstate actors may result in more public goods provision.

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armed actors (e.g., Gambetta, 1996, Frye and Zhuravskaya, 2000, Bandiera, 2003, Daniele and Marani, 2011, Acemoglu et al., 2013, Daniele and Geys, 2015, Buonanno et al., 2015, 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, Mirenda et al., 2022, Sviatschi, 2022a,b). Most of this literature has focused on violence, or the potential thereof, as the channel behind the effects of organized crime on politics, investment, migration, and other aspects of socioeconomic development.

We complement this 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 socioeconomic development: restrictions on 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 both from rival criminal groups and from the state, they need to implement stringent security measures to protect the borders of the neighborhoods they control (e.g., imposing 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.

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). Much of the existing literature has shown how nonstate 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.[4]

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[4]In particular, while the literature on stationary bandits would imply that armed actors have incentives for maximizing residents' incomes—including through some public goods provision—to maximize extortion rents in

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, we show how the deportation of criminal leaders from the United States to El Salvador has resulted in their establishing extortionary gangs that significantly limit socioeconomic development in El Salvador. 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. The existing literature has focused on the effects of 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 work by showing how gang-imposed restrictions on individuals' freedom of movement can significantly affect socioeconomic development, even within an integrated metropolitan area 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, nonstate armed actors restrict individuals' freedom of movement in Brazil, Colombia, Guatemala, and Honduras (e.g., Ibáñez et al., 2019, Magaloni et al., 2020a); many other countries, too, experience various 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 and organization of criminal groups in El Salvador. Section 3 describes the main data sources. Section 4 presents the identification strategy and the main results. Section 5 analyzes the mechanisms driving the results. Section 7 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 pol-

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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.

icy in 1996. We then describe how, once in El Salvador, the gangs quickly reestablished their criminal structures, began recruiting, and gained territorial control over many urban neighborhoods throughout the country, most notably in the capital, San Salvador. We also 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 developed in the United States.

2.1. *The Origins of MS-13 and 18th Street*

Southern California, especially Los Angeles, became home for thousands of Salvadorans fleeing the country's descent into civil war in the 1980s (Stanley, 1987). Lacking an established support network, Salvadoran migrants lived in poor, overcrowded neighborhoods and often faced discrimination from other migrant groups (Brettell, 2011). In a typical family, both parents worked, often leaving the children unsupervised (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 crimes and for their affinity to cannabis and heavy metal, rather than for brutal violence—while others joined 18th Street, an existing Mexican gang (Dunn, 2007, Cruz, 2010, Martínez and Martínez, 2018). As membership in MS-13 and 18th Street grew across Salvadoran immigrant communities, the gangs became known to the local authorities. 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 this day (Ward, 2013).

Many gangs in 1980s Los Angeles shared a noteworthy trait: they precisely demarcated their territory, which greatly contributed to their identity and development (Coughlin and Venkatesh, 2003). For example, they used graffiti to define the territories under their control and to project authority over their rivals and the local population (Tita et al., 2005, Artsy, 2018). This demarcation had a profound impact on the mobility and decisions of individuals living in gang territories: "One of the really important things to think about is how the invisible borders [. . .] add costs we often don't think about. 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, [. . .] 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.[5] This facet of gang culture became a fundamental trait of gang structures in El Salvador.

2.2. *American Immigration Policy and the Emergence of Gangs in El Salvador*

In 1996, to reduce crime in urban areas and address the surge in irregular migration, 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 procedures for expedited removal, adding new grounds for deportation, and increasing the number of border patrol agents. This shift in American policy had a profound impact on El Salvador. During the first wave of deportations in 1996, over 500 Salvadoran gang members were deported from the United States, leading to devastating changes in Salvadoran communities (Sviatschi, 2022b).

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). El Salvador was still recovering from its civil war, which ended in 1992, and the Salvadoran state did not have the 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., no rural police units existed until 2004). The repatriated gang leaders exploited this low level of state capacity and expanded their operations to many urban areas.

Most of the repatriated MS-13 and 18th Street gang members had lived in the United States since a young age and knew little about their home country. For this reason, most of them returned to their birth municipalities, relying on their family networks to resettle

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[5]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 referenced the locations where their gang leader commenced their illicit careers in the United States (e.g., *Hollywood Locos Salvatruchos*).

in a new environment (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 expanded their ranks, recruiting new members from the local population. Many locals were attracted by the 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 MS-13 and 18th Street gang members arrived, and began recruiting adolescents to join their structures, El Salvador experienced an immediate increase in gang-related activities. According to the local authorities, by the end of 1996, at least 20 thousand individuals had joined the two gangs (Cruz and Portillo Peña, 1998).

2.3. *The Formation of Gang Territory in El Salvador*

Taking advantage of the postwar environment and widespread destitution, both MS-13 and 18th Street quickly expanded their influence over many neighborhoods, particularly in the capital, San Salvador, and other urban areas, "gain[ing] complete control of [certain] localities" (Zoethout, 2015). This rapid formation and enforcement of boundaries was possible due to four main factors: *(i)* the gangs' experience in implementing a system of territorial control in California, *(ii)* the importance of territorial control for the gangs' identity and long-term survival, *(iii)* the gangs' ability to recruit new members from the local population, and *(iv)* El Salvador's low state capacity in the 1990s.

The system of territorial control built upon the strategy the gangs honed in California, where demarcation, largely based on natural barriers, split urban areas into small geographical confines known as cliques (Miguel Cruz, 2010). In El Salvador, the gangs also defined their territory based on natural barriers such as major roads and boulevards (Tenorio, 2002, Vega, 2015). We identify and take advantage of three such major roads (see Figure 1)—*Bulevar Venezuela*, *49 Avenida Sur*, and *Autopista Comalapa*, all of which existed in 1996—that largely determined the southern and western boundaries of gang territory. All of these multilane roads hinder the gangs from expanding beyond them to exert control over neighborhoods on both their sides.

In Subsection 4.3, we take advantage of these natural boundaries of gang territory to verify that the results of the regression discontinuity analysis are not determined by the

potential endogeneity of some of the other boundaries. We also show *(i)* that the borders of gang-controlled neighborhoods were not formed as a result of preexisting spatial differences in socioeconomic conditions or crime before the arrival of the criminal deportees and *(ii)* that the natural barriers that did not contribute to the formation of the gang boundaries do not affect socioeconomic outcomes.

Our conversations with the police and individuals living in gang areas suggest that, in San Salvador, the boundaries of gang territory have remained stable since they were formed.[6,7] The police have attempted to regain control over those locations, but, as of this study, they have been unsuccessful.[8,9] 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).

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 rival gang mem-

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[6]In Subsection 4.3 and Appendix Section A.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.

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

[8]In Subsection 4.4, we address the potential concern that, to prevent the gangs from expanding, the government has accumulated resources close to the boundaries of gang territory. In particular, we show that our results are very similar if we exclude locations close to the boundaries (see Table A.XIII). We also find no evidence that the government has been placing police stations close to the boundaries of gang territory.

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

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bers and police informants entering their territory and arresting or assassinating them. A related fear is that residents of their territory will defect and provide information about the gangs´ whereabouts and activities to the police or the rival gang. Therefore, to improve their security, both MS-13 and 18th Street rely on 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 make this system work, the gangs dispatch junior gang members and collaborators (*banderas*) to patrol the boundaries of their territory (ICG, 2018, Boerman and Golob, 2020).[10] This system of territorial control, which has existed in its current form since at least 1999 (Palma, 1999), is supported by the gangs' ability to entice and coerce new *banderas* to join their criminal structures.

Both MS-13 and 18th Street also use sophisticated techniques to track down defectors; many end up killed.[11] Overall, gang-imposed restrictions on individuals' mobility 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, checkpoints also allow the gangs to extort individuals and businesses that have been allowed to enter or exit their territory (e.g., distribution and transportation companies). Martínez (2016) describes the situation as follows: "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."[12] Both MS-13 and 18th Street rely on extortion as their main source of revenue; they collect regular payments from individuals and businesses throughout San Salvador, including nongang parts of the city (InSight Crime and CLALS, 2018).[13]

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

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

[11]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 neighborhood. For a detailed discussion of the reasons preventing people from migrating out of gang territory, see Subsection S.3 of the Supplementary Materials.

[12]The fee is at least 1–3 dollars, a nontrivial expense for many poor individuals. It is collected by the *banderas* who monitor the boundaries of gang territory (ICG, 2018).

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

gang territory. However, as we show in Section 5.1, this does not happen due to a change in labor-market conditions directly at the boundaries of gang territory. Instead, people living in nongang areas close to the boundaries 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 we show in Subsection 5.3, individuals and businesses in nongang areas close to the boundaries of gang territory have the same exposure to extortion and other gang-related crimes as residents of gang areas. Thus, territorial control also functions as a "bridgehead" from which the gangs can extort nearby locations that are not under their control.

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 limited public services. First, unlike many other criminal organizations such as drug cartels or the Italian Mafia, Salvadoran gangs are quite poor; a rank-and-file gang member earns, at most, $15 a week, half the minimum wage of an agricultural day laborer (Martínez et al., 2016). Thus, the gangs lack sufficient resources to invest in improving the economic conditions in the areas they control. The second reason relates to one of the peculiarities of the urban context in which the gangs and the state coexist. Given the state's proximity to gang territory, in the absence of mobility restrictions, government workers can provide public goods throughout the city, not just 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, politicians who do not provide social programs in gang areas would likely see their reelection prospects dwindle, and their lives endangered.

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In turn, the gangs have been willing to allow non-police-related government workers to enter their territory to 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 our primary sources of data. For further details on these data, as well as a description of our ancillary data sources, see the Supplementary Materials S. Table S.I in the Supplementary Materials presents the summary statistics of the outcome variables used in our analysis.

FIGURE 1.—Gang Territory in San Salvador
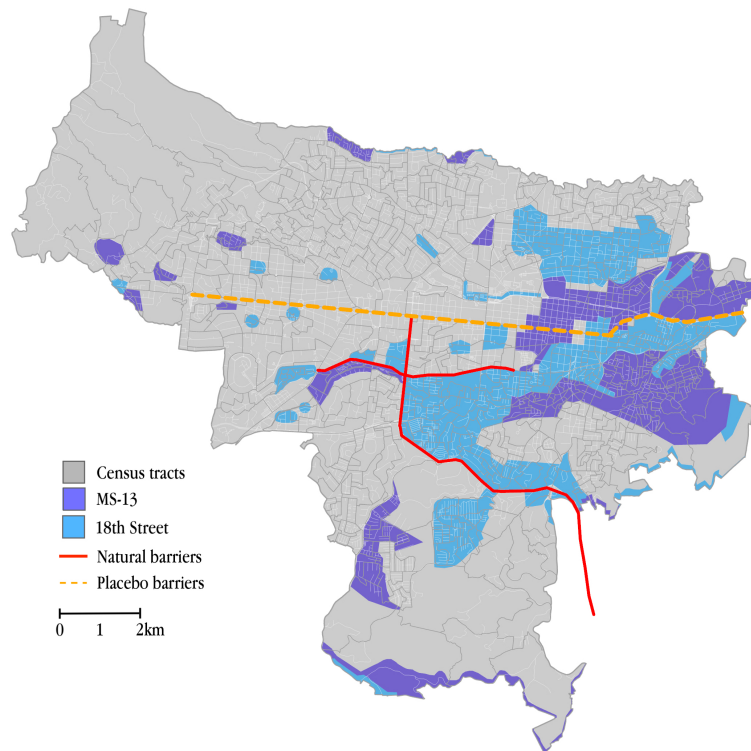
Gang boundaries. In 2015, a local newspaper—*El Diario de Hoy* (EDH)—published the map that we use in this study (see Figure 1). It delimited the locations controlled by MS-

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, too, have independently verified the accuracy of the map published by EDH.[14] Moreover, in Subsection A.1 of the Appendix, we present evidence on how the boundaries of gang territory had remained stable between the time they were formed in the late 1990s and 2015, when EDH published its map.

1992 and 2007 population and household censuses. The General Directorate of Statistics and Censuses (*Dirección General de Estadísticas y Censos*, DIGESTYC) provided us with de-identified microdata for the 1992 and 2007 censuses. The data cover the socioeconomic characteristics of all the country's households and individuals, including educational attainment and material ownership (e.g., having a car and a TV). Both censuses also recorded the characteristics of all the dwellings in El Salvador. Notably, the data for these variables were recorded by the enumerators based on their observations, not self-reported by the respondents. For most outcome variables, both censuses worded the questions exactly the same. Hence, the data are directly comparable across census exercises.[15]

1992 and 2007 census cartography. DIGESTYC also provided us with maps of the census tracts (*segmentos censales*) for the 1992 and 2007 censuses. Each census tract represents a tiny area with a fixed geographic perimeter. In 2007, the average census tract in our sample included 131 households and 473 individuals. This small size allows us to accurately estimate the location of the respondents using the geographic coordinates of the census tracts' centroids. In addition, because of the difficulty with attributing treatment status, we exclude 27 census tracts (4% of the census tracts in San Salvador) whose centroids are outside gang neighborhoods but have at least 25% of their territory controlled by the gangs. Finally, we limit our analysis to census tracts located within 420 meters of

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[14]Specifically, we asked the PNC to show us their 2018 map of gang-controlled areas; it was almost exactly the same as the map published by EDH. For confidentiality reasons, we cannot use or present their map in this paper.

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

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the boundaries of gang territory because, after that, there are gaps in the distribution of observations both inside and outside of gang-controlled areas.[16]

2019 survey. To document the mechanisms through which gangs affect socioeconomic development, we conducted our own geocoded survey in San Salvador in 2019. To be consistent with the census data, we conducted the survey in areas within 420 meters of the boundaries of gang territory. The survey was designed to be representative by 30-meter bins denoting the distance to the boundaries of gang territory (separately for each side of the boundaries). It consisted of in-person interviews and contained questions related to individuals' mobility, employment, income, satisfaction with public goods provision, and the role of formal (i.e., government) and informal institutions in resolving neighborhood problems. However, for security reasons, we were unable to ask individuals direct questions related to gang activity.

Extortion. The data on the extortion payments to the gangs made by firms and individuals in San Salvador come from the following three sources: *(i)* a geocoded survey of small and medium-sized enterprises conducted by a local think tank in 2015; *(ii)* geocoded confidential internal records of a large Salvadoran distribution firm on all the extortion payments it made to the gangs from 2012 to 2019; and *(iii)* our own geocoded telephone survey, which we conducted in San Salvador in 2020. For more information on these data sources, see the Appendix.

Annual school censuses. We obtained annual school census data from the Ministry of Education covering 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 who 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, which provides school-level education for adults without a degree. For these schools, we also calculate the dropout rate among adults.

4. GANG CONTROL AND SOCIOECONOMIC DEVELOPMENT

To estimate the effects of gangs' territorial control on socioeconomic development, we implement a spatial regression discontinuity design, focusing on San Salvador municipality.

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[16]For instance, in the 1992 data, there are no census tracts located 430 meters away from the boundaries 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 boundaries.

4.1. *Empirical Strategy: Regression Discontinuity*

We begin by estimating the effect of gangs' territorial control on socioeconomic development using data from the 2007 census. For each census tract, we calculate the distance from its centroid to the boundaries of gang territory (in tens of meters) and implement a spatial regression discontinuity design, using this distance as the forcing variable (Specification 1):

$$y_{ic} = \alpha_0 + \alpha_1 \, distance_c + \alpha_2 \, gang \, territory_c distance_c + \alpha_3 \, gang \, territory_c + \varepsilon_{ic} \qquad (1)$$

Depending on the specification, *i* denotes individuals, dwellings, or households, and *c* denotes census tracts. In turn, *gang territory* is a dummy variable for whether the location is controlled by the gangs, *distance* represents the distance to the boundaries of gang territory, and *y* is the outcome variable of interest. As a baseline, standard errors in parentheses are clustered by 30-meter bins denoting the distance to the boundaries of gang territory, separately for locations inside and outside of gang territory.[17] The assumption behind this way of clustering the standard errors is that the correlation between the error terms depends primarily on the distance to the boundaries 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 allow for spatial correlation within a 100-meter radius.[18] Throughout the paper, the significance of the results remains the same regardless of which standard errors we use.[19]

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[17]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 Figure S.6. In Appendix Table A.IV, 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 nongang areas in different parts of the city. The results are also robust to implementing a two-dimensional regression discontinuity design in latitude and longitude instead of distance to the boundaries of gang territory (Table S.V in the Supplementary Materials).

[18]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 boundaries 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 boundaries of gang territory, each unit of observation has the same centroid.

[19]We have also verified the significance of our main results using the permutation test suggested by Ganong and Jäger (2018). In this test, we perform the same permutations to the boundaries of gang territory as described in Figure S.8 in the Supplementary Materials.

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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, nongang areas close to the boundaries 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 boundaries of gang territory had similar geographic and socioeconomic characteristics as well as the same number of incarcerated individuals. We also identify places where the locations of the boundaries were determined by the presence of natural barriers that prevented the gangs from expanding further. We then use these natural boundaries of gang territory to verify that our results are not driven by the potential endogeneity of some of the other boundaries. 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 and Appendix Subsection A.2 provide a detailed discussion of this assumption, showing that selective migration can explain no more than 14% of the socioeconomic gaps between gang and nongang areas.

4.2. *Main Results*

Table I presents the results of estimating Specification (1) using the 2007 census data. 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 boundaries. For instance, residents of gang territory are estimated to have a 21-percentage-point lower probability of owning a car, a 15-percentage-point lower probability of having a high school degree, and a 5-percentage-point lower probability of living in a house with concrete walls than individuals living less than 50 meters away but not under the control of gangs.[20] The results for the other measures of socioeconomic development present the same pattern.

Figure 2 illustrates the findings from Table I 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 represents distance (in meters) to the boundaries of gang territory. Areas to the left of the dashed line are located outside of gang

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[20]In the individual-level regressions, the sample consists of the entire population. The results are very similar if, instead, we analyze just the adult population.

TABLE I

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	0.026	-0.050	-0.079	0.006	-0.131
	(0.015)***	(0.010)**	(0.021)**	(0.021)***	(0.002)***	(0.029)***
	[0.017]***	[0.010]**	[0.027]*	[0.027]***	[0.003]**	[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	-0.207	-0.135	-0.021	-0.173	-0.693
	(0.006)**	(0.046)***	(0.033)***	(0.006)***	(0.035)***	(0.195)***
	[0.005]**	[0.057]***	[0.040]***	[0.008]**	[0.045]***	[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	-0.153	-0.121	-0.036	-0.089	-0.101
	(0.007)***	(0.029)***	(0.026)***	(0.012)***	(0.019)***	(0.020)***
	[0.008]***	[0.034]***	[0.030]***	[0.013]***	[0.024]***	[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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to gang territory (separately for each side of the boundaries). Standard errors in brackets are adjusted to allow for spatial correlation within a 100 meter radius (Conley correction).

territory; areas to the right are controlled by the gangs. For all the outcome variables, there is a clear discontinuity at the boundaries of gang-controlled neighborhoods.[21]

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

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[21] In the Appendix, we illustrate the results for all the other outcome variables from Table I. Figure A.1 presents the results for dwelling characteristics, Figure A.2 for individual characteristics, and Figure A.3 for household characteristics.

Figure 2.—Socioeconomic Conditions After 10 Years of Gang Control

1st principal component of the:
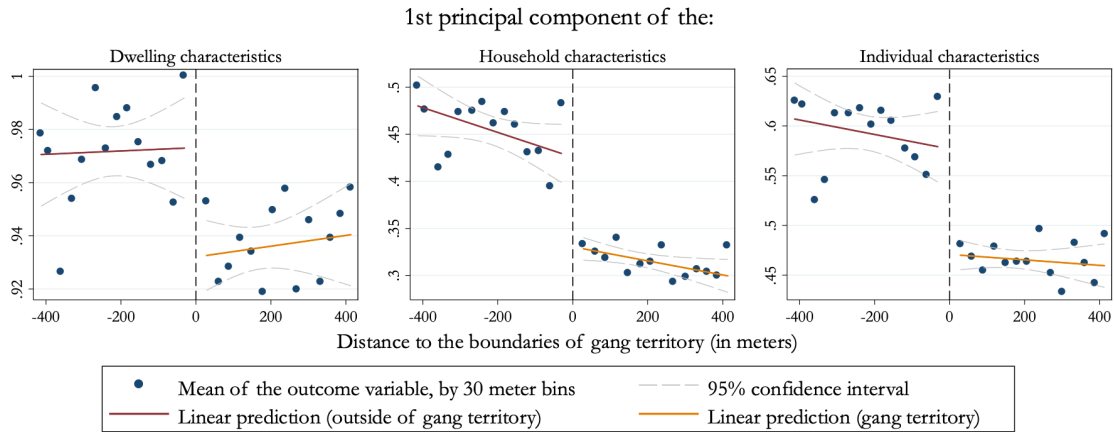
Note: By 2007, socioeconomic conditions had become significantly worse in gang-controlled areas. The figure illustrates the results for the 1st principal components of the dwelling, household, and individual characteristics from Table I. All the variables come from the 2007 census. The unit of observation 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 boundaries 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.

under gang control into one—household income—the data for which come from the 2019 survey. The left part of Appendix Figure A.4 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 nongang areas. Given that the average monthly income in our sample is $625, this discontinuity implies a substantial reduction in earnings. Table A.I 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 I to represent the causal effect of gang control on socioeconomic development.

Conditions before the arrival of the gangs. To ensure that nongang areas close to the boundaries of gang territory are the appropriate counterfactual for gang-controlled neighborhoods, we check whether, before the arrival of the gangs, those locations had 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 waterways, road density) and the socioeconomic character-

istics from the 1992 census (e.g., dwelling conditions, having a TV).[22] Columns 1–24 of Table II present the results. There are no discontinuities in any of the variables, confirming the notion that, initially, the locations on opposite sides of the boundaries were not different from one another. Appendix Figure A.5 illustrates these results for the first principal components of dwelling, household, and individual characteristics.[23]

Next, we estimate Specification (1) for the level of crime prior to the arrival of the gangs, measured by the number of people incarcerated in different parts of the city. Using the incarceration records from San Salvador's prisons, we geocode the residential addresses of the 4,726 individuals who had been incarcerated prior to 1997. Then, we calculate the number of incarcerations per square kilometer for each 10-meter bin, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).[24] Columns 25–30 of Table II present the results of estimating Specification (1) for different types of crimes, showing that locations on both sides of the boundaries had similar levels of crime prior to the arrival of the gangs.[25]

Overall, before the mid-1990s, gang and nongang locations had similar levels of socioeconomic development and crime, allowing us to conclude that nongang areas close to the boundaries are the appropriate counterfactual for gang neighborhoods in the absence of gang control.

Boundaries of gang territory from geographical barriers. To address any remaining concerns regarding the potential endogeneity of the boundaries, we perform the following analysis. We identify three major multilane roads—*Bulevar Venezuela*, *49 Avenida Sur*,

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[22]Some neighborhood characteristics (e.g., elevation or access to waterways) are time-invariant. Other neighborhood characteristics may change over time. For all the variables except for road density, we use the data from either before the arrival of the gangs or soon after their arrival. For road density, the data reflect 2020 infrastructure, making the pretreatment 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. We describe the data in detail in the Supplementary Materials.

[23]Figures S.1–S.4 in the Supplementary Materials present the results for each of the neighborhood, dwelling, household, and individual characteristics from Table II.

[24]We perform the calculation as follows. First, we divide the map of San Salvador into zones, denoting every 10 meters from the boundaries of gang territory, separately for gang and nongang areas (all nongang locations within 10 meters of the boundaries of gang territory, all nongang locations 10–20 meters away from gang territory, and so on). Then, for each of the zones, we calculate the number of geocoded addresses within it and divide that number by the area of the zone. We employ the same procedure for other outcome variables with the same unit of analysis.

[25]As we explain in footnote 18, we cannot report Conley standard errors in these specifications, because the unit of analysis includes areas from different parts of the city.

TABLE II

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 boundaries of gang territory had similar geographic and socioeconomic characteristics. The table presents the results of estimating Specification (1) for the neighborhood characteristics 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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries). 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 boundaries of gang territory).

and *Autopista Comalapa*—which together form more than 45 kilometers of natural barriers that largely determined the southern and western boundaries of gang territory.[26] Table III reports the results of estimating Specification (1) using these three roads, rather than the actual boundaries of gang territory, to predict the location of the borders. The results remain highly significant, demonstrating that they are not driven by the potential endogeneity of some gang-territory boundaries.

We also perform a placebo analysis in which we use major multilane roads that did not define 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 *Redondel Masferrer* in the west to *Avenida Independencia* in the east, that split San Salvador into two similar-size parts (see Figure 1). We then estimate whether the level of socioeconomic development changes at the placebo boundaries.[27] Appendix Table A.II 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 gangs emerged) and 2015, when EDH published the map of gang territory. If the EDH map does not accurately reflect which areas were controlled by the gangs in 2007, the

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[26]To ensure comparability of the census tracts on both sides of the regression discontinuity threshold, we exclude 25% of the largest census tracts, which are disproportionately present outside gang territory, and include dummies for the three remaining quartiles of the census tract size distribution. Table S.II in the Supplementary Materials reports the results of estimating the same regression specification without excluding the largest census tracts and, instead, including dummies for all four quartiles of the census tract size distribution.

[27]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 boundaries. The coefficient of interest is ψ_4, which estimates the change in socioeconomic conditions at the placebo boundaries. Similarly to the other regression specifications, we limit the sample to observations within 420 meters of the (placebo) discontinuity threshold. In addition, similarly to Table III, we exclude 25% of the largest census tracts, which are predominantly present outside gang territory, and include dummies for the three remaining quartiles of the census tract size distribution. Table S.III in the Supplementary Materials reports the results of estimating the same regression specification without excluding the largest census tracts, and instead, including dummies for all four quartiles of the census tract size distribution.

$$y_{ic} = \psi_0 + \psi_1\, distance_c + \psi_2\, distance_c \times north_c + \psi_3\, gang\ territory_c + \psi_4 north_c + \varepsilon_{ic}. \tag{2}$$

TABLE III

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	-0.096 (0.014)*** [0.021]***	0.047 (0.009)*** [0.012]***	-0.064 (0.014)*** [0.022]***	-0.226 (0.056)*** [0.102]**	0.004 (0.002)** [0.002]**	-0.287 (0.029)*** [0.101]***
Mean of dep. var.	0.947	0.021	0.966	0.050	0.002	0.097
Observations	7,424	6,312	6,348	6,348	6,348	6,056

	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	-0.021 (0.009)** [0.013]*	-0.606 (0.052)*** [0.155]***	-0.385 (0.032)*** [0.053]***	-0.045 (0.014)*** [0.014]***	-0.556 (0.062)*** [0.118]***	-2.061 (0.321)*** [0.398]***
Mean of dep. var.	0.033	0.305	0.671	0.957	0.256	2.814
Observations	6,021	6,080	6,098	6,119	6,086	6,348

	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	-0.167 (0.039)*** [0.038]***	-0.406 (0.032)*** [0.049]***	-0.233 (0.054)*** [0.107]**	-0.071 (0.009)*** [0.014]***	-0.246 (0.025)*** [0.059]***	-0.266 (0.028)*** [0.051]***
Mean of dep. var.	0.926	0.406	0.146	0.964	0.335	0.486
Observations	21,488	20,722	20,722	6,312	5,933	20,722

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. To ensure comparability of the census tracts on both sides of the regression discontinuity threshold, we exclude 25% of the largest census tracts, which are disproportionately present outside gang territory. We also include dummies for the three remaining quartiles of the census tract size distribution. Table S.II in the Supplementary Materials reports the results of estimating the same regression specification without excluding the largest census tracts and, instead, including dummies for all four quartiles of the census tract size distribution. 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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries). Standard errors in brackets are adjusted to allow for spatial correlation within a 100 meter radius (Conley correction).

estimates in Table I would be biased toward zero (i.e., against finding an effect).[28] Thus, the results in Table I should be interpreted as the lower bound of the effects of gang control.

[28]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, living conditions in the control group would be underestimated. In turn, the difference in living conditions between the gang and nongang areas would also be underestimated. Similarly, if the gangs actually controlled fewer neighborhoods than suggested by the map, then living conditions in the treatment group would be overestimated, which would also lead to a smaller difference between the treatment and control groups.

Nevertheless, in Appendix Subsection A.1, we demonstrate that the gang-territory boundaries have remained stable since they were first formed. 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.[29] As a result, by showing that, throughout the years, gang-related homicides consistently take place right at the boundaries from the EDH map, we are able to confirm the validity of that map and demonstrate the stability of those boundaries.

In addition, in 2023, we conducted a new survey of individuals from gang and nongang neighborhoods, in which, among other questions, the respondents were asked whether their neighborhood had been controlled by gangs 20 years ago, during the presidency of Francisco Flores Pérez (President of El Salvador in 1999–2004). As shown in Appendix Figure A.6, the share of respondents answering in the affirmative significantly increases at the boundaries of gang territory, suggesting that the borders have remained stable over time.

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 is what we call *in-sample migration*: individuals moving from a neighborhood on one side of the boundaries to an area on the other side of the boundaries while remaining in San Salvador and, thus, 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 is what we call *out-of-sample migration*: individuals moving from 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. To show that in-sample migration is not driving our findings, we leverage our 2019 survey, where, among other questions, we asked individuals whether they had lived in the exact same place their entire life: 77% of respondents said they had. This information allows us to compare the results for the full sample and for the subsample of

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

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 appear only in the full sample.

Notably, this exercise also allows us to determine that the results are not driven by wealthy and educated newcomers choosing to settle in nongang 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 we limit the sample this way, the results of the regression discontinuity analysis are practically unchanged. Appendix Figure A.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 presents the subsample of never-movers. The two plots are quite similar, suggesting that the results are not driven by selective in-sample migration. Table A.I in the Appendix reports the regression estimates for the socioeconomic characteristics from our 2019 survey, both for the full sample and for the sample of never-movers; Figure S.5 in the Supplementary Materials illustrates these results.[30]

For a detailed discussion of out-of-sample migration (i.e., individuals moving from San Salvador to a different municipality or abroad), see Appendix Subsection A.2.

Absence of pretrends. In Section 6, we also demonstrate the absence of pretrends in socioeconomic development between areas with and without gang presence. Specifically,

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[30]In the 2007 census, individuals were also asked whether they had 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. Coincidentally, however, the 2007 survey found that the share of population that had always lived in San Salvador municipality was 77%, the same percentage as the share of population that had always lived in the same location 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 of individuals who had always lived in the same municipality. Table S.IV in the Supplementary Materials presents the results, which are very similar to those presented in Table I, confirming that in-sample migration is not likely to be driving the results. In addition, for the two main outcome variables that are potentially affected by in-sample migration (i.e., the first principal components of household and individual characteristics), we perform a test in the spirit of Lee (2009). Focusing on individuals living within 100 meters of the gang boundaries, we calculate the bounds of the treatment effects under the very strong assumption that all individuals who have ever changed their municipality of residence did so in a way that biases our estimates. Even under this strong assumption, we find that the effects of gang control are bounded between -0.127 and -0.07 for household characteristics and -0.124 and -0.048 for individual characteristics. In the 2019 survey, a similar exercise bounds the effects on household income between -497.7 and -299.1. All the bounds are statistically different from zero.

we perform a difference-in-differences analysis using nighttime light density, household income, and firm openings to show that these variables only started to change after the deportation of the gang leaders from the United States to El Salvador.

4.4. *Robustness Checks*

Excluding areas close to the boundaries of gang territory. Appendix Table A.III presents the results of a "doughnut-hole" regression discontinuity design, in which we estimate Specification (1), excluding observations within 100 meters of the regression discontinuity cutoff.[31] This analysis serves the following three purposes. First, it demonstrates that our results are robust to potential inaccuracies in the location of the gang-territory boundaries and are not driven by outlier areas near the boundaries. Second, given that most gang-related homicides take place close to gang-territory boundaries, the doughnut-hole regression discontinuity design allows us to verify that the results in Table I are not driven by high levels of violence close to the boundaries. 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 nongang areas close to the boundaries.[32] The results in Appendix Table A.III are very similar to those in Table I.

Controlling for 300×300-meter fixed effects. A potential concern is that the results in Table I might be driven by the comparison of gang-controlled locations in one part of San Salvador to nongang 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.[33] 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. Appendix Table A.IV presents the results, which are very similar to those in Table I.

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[31]The results are robust to the choice of alternate doughnut-hole cutoffs. For instance, the results are very similar if we exclude observations within 50 meters or 150 meters of the gang-territory boundaries.

[32]We analyze this concern in Subsections 5.1 and A.3, where we show that local labor-market conditions and public goods provision do not change at the boundaries of gang territory.

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

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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 boundaries of gang territory with latitude and longitude, normalized to have a mean of zero. Table S.V in the Supplementary Materials presents the results.

Excluding 10% of the top observations from nongang 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 nongang areas that have the highest values of the first principal component of the dwelling, household, and individual characteristics.[34] As reported in Table S.VI in the Supplementary Materials, the estimates remain statistically significant.

Different bin size. We also present our main regression discontinuity plots for larger and smaller distance bins than in the baseline specification. Figure S.6 in the Supplementary Materials illustrates the results for the first principal components of the dwelling, household, and individual characteristics, using 60-meter and 20-meter distance bins.

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

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

Second, we consider a non-self-reported measure of individuals' wealth: rent paid for housing. Specifically, we analyze data on housing offers in various parts of San Salvador, which gives us landlords' assessments of individuals' ability to pay.[35] We then estimate Specification (1) with monthly housing rent as the outcome variable, controlling for ob-

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[34]When more than 10% of the observations have 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. We perform 1,000 iterations of this procedure and, for each variable, report the most conservative results.

[35]The data were scraped from OLX (now Encuentra24) (accessed April 8, 2020). We cannot observe whether a particular property was rented out. However, after two months, the majority of the offers were no longer available. Some of the cheapest properties are rented out on the informal market and not advertised 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.

servable housing characteristics (e.g., number of rooms, number of bathrooms, square meters). Table S.VII and Figure S.7 in the Supplementary Materials present the results. They suggest that housing rent is $200 lower in gang-controlled locations, confirming the notion that residents of those areas are poorer than residents of nongang neighborhoods.

Third, in Section 6, 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 underreported.

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. Table S.VIII in the Supplementary Materials presents the results, which 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 adversarial gangs are particularly close to each other, we estimate Specification (1), excluding gang-controlled neighborhoods located within 150 meters of the rival gang's territory. Table S.IX in the Supplementary Materials presents the results.

"Islands" of gang territory. As Figure 1 shows, most gang-controlled neighborhoods are located close to each other in the city's east side. However, smaller "islands" of gang territory exist 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. Table S.X in the Supplementary Materials presents the results, suggesting that both types of gang territory were similarly affected.

Estimating the effects separately for men and women. We verify that both male and female residents of gang areas have been affected by estimating Specification (1) for the individual characteristics from the 2007 census separately for women and men. Table S.XI in the Supplementary Materials presents the results.

Permutation test. To illustrate the relevance of the borders of gang territory, Figure S.8 in the Supplementary Materials presents the results of a permutation test in which the discontinuity threshold is shifted in both directions, by 50-meter increments. As expected, as distance from the actual gang boundaries increases, the estimates converge to zero.

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 nongang areas can be explained by higher dropout rates in gang-controlled neighborhoods. Finally, we investigate alternative mechanisms and find that the regression discontinuity results cannot be explained by differences in crime (i.e., homicides, extortion), the composition of firms at the boundaries of gang territory, or public goods provision.

In Appendix Subsection A.2, we show that our results are not driven by selective migration of individuals out of gang territory. Specifically, we estimate the rates of selective out-of-sample migration by considering the relationship between household wealth and the probability of a family member migrating abroad from 1997 through 2007, finding that selective migration accounts for no more than 14% of the gaps in socioeconomic development between gang and nongang areas.[36] In Appendix Subsection A.4, we also demonstrate that the regression discontinuity results cannot be explained by differences in occupational structure, such as unemployment, informal employment, or hours worked.[37]

5.1. *Restrictions on Mobility*

The presence of mobility restrictions. To document the presence of restrictions on individuals' mobility, we estimate Specification (1) for mobility questions from three different sources: the 2019 survey (columns 1–5), a follow-up survey that we conducted in 2023 (column 6), and cell phone ping data from early 2022 (columns 7–8). Table IV 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 boundaries of gang territory. Residents of gang territory are also

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[36]In Panel B of Appendix Table A.XIV, we also show that our results are not determined by positive selective internal migration within El Salvador. Specifically, we find that individuals who have previously lived in San Salvador but now reside in a different municipality have similar socioeconomic characteristics to individuals living in gang-controlled neighborhoods of San Salvador (see columns 5 and 7 of Appendix Table A.XIV).

[37]Notably, there is no discontinuity in the probability of being employed. The results of estimating Specification (1) suggest that residents of gang territory aged between 18 and 65 are only 0.2 percentage points less likely to be employed than individuals from nongang areas (with the standard error of 1.1 percentage points).

more likely to work in the same neighborhood where they live and are less likely to have traveled outside of San Salvador: the share of individuals who have ever been to the beach or visited Santa Ana department, which are both 30 to 60 kilometers away, discontinuously decreases at the boundaries of gang territory.

To further demonstrate the salience of restrictions on individuals' mobility, we show that residents of gang areas acknowledge the presence of these restrictions. First, in 2019, they were significantly less likely to say that there is freedom of movement in the neighborhood where they live (column 5 of Table IV). Second, in 2023, we conducted a new survey in San Salvador, in which the respondents were asked whether, in the past, the gangs' "invisible borders" prevented them from finding jobs in large firms in other parts of the city. While individuals outside of gang territory were also affected (e.g., due to gang areas blocking the routes between some nongang parts of the city), the impact was significantly stronger for the residents of gang neighborhoods (column 6 of Table IV).

Finally, in columns 7 and 8 of Table IV, we use cell phone ping data from early 2022 to illustrate that residents of gang territory are not generally less mobile than individuals living in other parts of the city, but that their movements are confined to gang-controlled areas. We begin with dividing the map of San Salvador into 100×100-meter grid cells and using the prevalence of pings during the night hours (from 9 p.m. to 7 a.m.) to identify the grid cell where an individual lives. Then, for each individual, we calculate the share of pings inside gang territory during the daytime (from 9 a.m. to 7 p.m.), excluding pings in their home grid cells.[38] Similarly, we calculate the average distance that an individual travels away from their home during the daytime. Columns 7 and 8 of Table IV present the results of estimating Specification (1) for these outcome variables. They confirm that residents of gang-controlled neighborhoods spend a substantially larger share of their time in gang territory than individuals on the other side of the regression discontinuity cutoff. However, within the areas to which they are confined, both groups of individuals travel the same distance throughout the day, suggesting that residents of gang neighborhoods do not have a lower capacity to travel away from home.[39]

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[38]Home grid cells are intentionally excluded to ensure that the results are not driven by individuals spending time at home. If home grid cells are not excluded, the estimate in column 7 of Table IV becomes three times larger.

[39]Figure 3 presents the regression discontinuity plots for the four most important variables in Table IV: the share of people working in gang territory, the share of time individuals spend in gang territory, the share of people who think there is freedom of movement in the area where they live, and the share of people who say that gang-imposed restrictions on mobility prevented them from finding jobs in large firms in other parts of the city.

TABLE IV

GANG CONTROL AND RESTRICTIONS ON INDIVIDUALS' MOBILITY

	Works in gang territory	Works in neighborhood where they live	Has been to Santa Ana	Has been to the beach
	(1)	(2)	(3)	(4)
Gang territory	0.495	0.111	-0.277	-0.064
	(0.039)***	(0.031)***	(0.043)***	(0.031)**
	[0.042]***	[0.050]**	[0.052]***	[0.032]**
Mean of dep. var.	0.334	0.302	0.495	0.872
Observations	1,738	2,071	2,314	2,314
	Freedom of movement where they live	Gang borders prevented you from getting jobs in large firms in other parts of the city	Share of time spent in gang areas, excluding time spent at home	Mean distance away from home during the day (in meters)
	(5)	(6)	(7)	(8)
Gang territory	-0.097	0.100	0.213	-52.82
	(0.039)**	(0.041)**	(0.039)***	(154.82)
	[0.039]**	[0.046]**	[0.034]***	[147.55]
Mean of dep. var.	0.811	0.407	0.222	1955.62
Observations	2,314	2,313	9,605	9,605

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the results of estimating Specification (1) for the questions related to mobility. The outcome variables in columns 1–5 come from the 2019 survey, the outcome variable in column 6—from the 2023 survey, and the outcome variables in columns 7–8 are based on cell phone ping data from SDK. Santa Ana is a neighboring municipality, which is approximately 60 kilometers away from San Salvador. The beach 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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries). Standard errors in brackets are adjusted for spatial correlation within a 100 meter radius (Conley correction).

We additionally investigate whether the results in Table IV can be determined by residents of gang areas having less access to personal transportation, such as cars and motorcycles. To address this question, we consider the heterogeneity of the effects of gang control on people who get to work by car or motorcycle and people who get to work in another way, controlling for the correlation between using personal transportation and the outcome variable.[40] Appendix Table A.V presents the regression estimates. The results suggest that, compared to their peers on the other side of the boundaries, residents of gang-controlled neighborhoods who get to work by car or motorcycle are still substantially more likely to work inside gang territory and, more generally, to have lower levels of mobility. They

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[40]The 2019 survey did not include a question about car ownership. However, for the question from the 2023 follow-up survey, the results are very similar regardless of whether we consider car ownership or the usage of a car or motorcycle to get to work (see columns 9–10 of Appendix Table A.V).
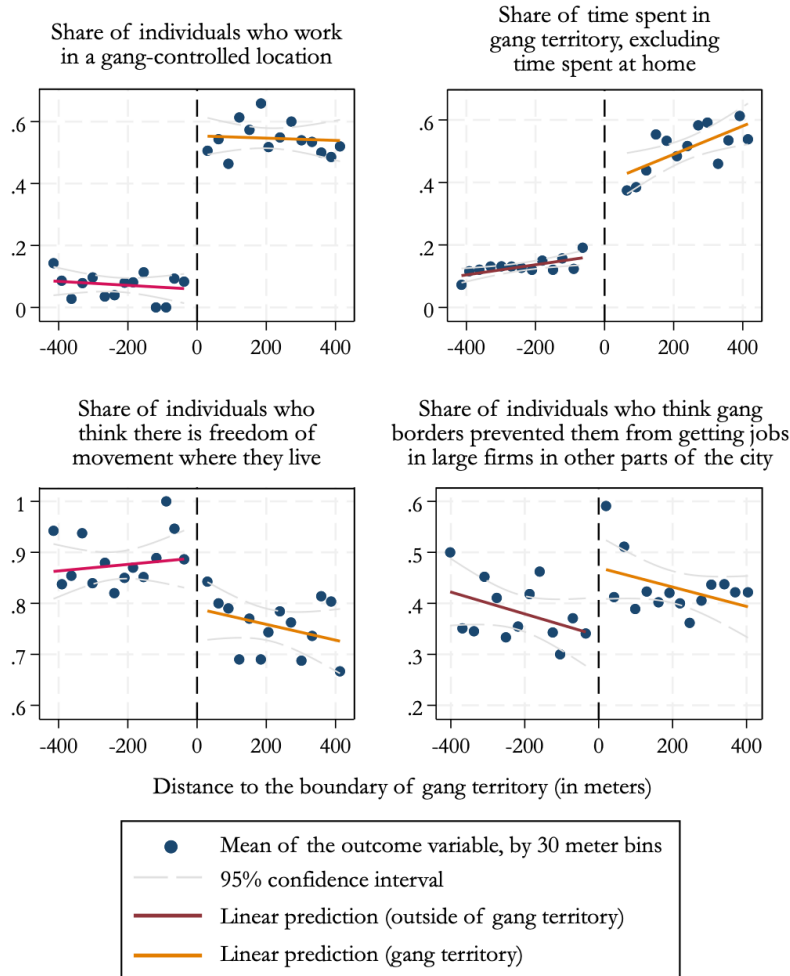
also have worse employment outcomes and are less likely to say that there is freedom of movement where they live. Finally, the results in columns 9–10 indicate that, regardless of car ownership, all residents of gang territory are significantly more likely to say that the gangs-imposed borders prevented them from finding jobs in large firms in other parts of the city. Thus, differences in individuals' mobility cannot be explained by differential access to personal transportation in gang and nongang neighborhoods.[41] Similarly, in Appendix Table A.VI, we show that these results also cannot be explained by differences in educational attainment between the two groups.

Labor-market consequences. The consequence of the 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. 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. Appendix Table A.VII presents the results, showing that, while, on average, residents of gang-controlled neighborhoods earn less income and work in smaller firms than individuals from nongang locations, these gaps are significantly smaller for residents of gang territory who are able to work outside gang areas. 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.[42] While these results should be treated as descriptive and interpreted with caution,

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[41]In a separate ongoing project, we analyze how individuals' mobility and socioeconomic conditions were affected by the Salvadoran government's unprecedented crackdowns on gang activity in mid-2022, which led to the de facto elimination of the gangs in San Salvador (Melnikov et al., 2024). We find that, after the crackdowns, while residents of former gang-controlled neighborhoods are still less likely to own a car, they no longer have lower mobility than individuals from other parts of the city. These results confirm the notion that, before the crackdowns, residents of former gang areas were primarily constrained in their mobility by the gangs rather than the lack of personal transportation.

[42]Note that household income is defined at the household level, 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 nongang 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.

FIGURE 3.—Gang Control and Mobility Constraints

Share of individuals who work
in a gang-controlled location

Share of time spent in
gang territory, excluding
time spent at home

Share of individuals who
think there is freedom of
movement where they live

Share of individuals who think gang
borders prevented them from getting jobs
in large firms in other parts of the city

Distance to the boundary of gang territory (in meters)

- Mean of the outcome variable, by 30 meter bins
- - - 95% confidence interval
— Linear prediction (outside of gang territory)
— Linear prediction (gang territory)

Note: The figure illustrates that residents of gang territory are more likely to work in a gang-controlled location, think that there are restrictions on the freedom of movement, and that these restrictions prevent them from finding jobs in large firms in other parts of the city. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundaries 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.

they are fully consistent with gang-imposed restrictions on mobility being a major factor determining individuals' labor-market outcomes.[43]

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[43] A potential competing explanation is that, instead of reflecting the costs of restrictions on individuals' mobility, the results in Appendix Table A.VII 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 columns 5 and 6 of Table IV, residents of gang territory acknowledge that they do not have freedom of movement and that gang-imposed restrictions on mobility prevented them from getting jobs in large firms in other parts of the city. Second, we exploit the fact that men are significantly more

Connection to labor-market conditions. Importantly, the differences in labor-market outcomes are not caused by a change in labor-market conditions at the boundaries of gang territory. To analyze this question, we use data from the 2005 economic census, which reported the location, number of employees, revenue, costs, and profits of all formal and informal firms in El Salvador. Using these data, we estimate Specification (1) and find that firm-level characteristics do not change at the boundaries of gang territory (columns 1–5 of Appendix Table A.IX). In column 6 of Appendix Table A.IX, we also demonstrate that, similarly, the number of business establishments per square kilometer is the same on both sides of the boundaries. This result is further verified in columns 7–10, using data from Google Maps instead of the 2005 economic census.

How can the absence of a change in labor-market conditions at the boundaries of gang territory be consistent with residents of gang neighborhoods being unable to work in the largest and best-paying firms? The answer is that, as we demonstrate in Section 6, after the arrival of the gangs, most of the growth in economic activity has taken place in areas further away from gang-controlled neighborhoods. Thus, while there is no change in labor-market conditions directly at the boundaries of gang territory, these conditions gradually improve with distance from gang neighborhoods. Appendix Figure A.8 illustrates these findings.

These results highlight the salience of gang-imposed restrictions on individuals' mobility. Since firm characteristics do not change at the boundaries of gang territory, individuals living in nongang neighborhoods close to those boundaries 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.

5.2. *School Dropout Rates*

Restrictions on individuals' mobility can account for a large part of the gap in labor-market outcomes between gang and nongang neighborhoods, but 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-

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likely than women to be affiliated with the gangs. As a result, if the differences in employment outcomes between residents of gang and nongang 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 A.VIII 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 nongang areas.

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controlled neighborhoods due to *(i)* recruitment by the gangs (e.g., see Sviatschi, 2022a,b), *(ii)* lower returns to education for people unable to work outside gang territory, and *(iii)* the poverty-induced need to work from a young age to help provide for one's family.

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 enrolled at the beginning of the year and the number of students who 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.

Appendix Table A.X 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 outside gang areas. 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).[44][45] Using the result from column 2 of Appendix Table A.X as the baseline (i.e., the difference in dropout rates before 2007), one can estimate that, 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 nongang areas. This estimate is fully consistent with the 14.6-percentage-point difference in school completion for the entire population reported in Table I.

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. During that period, much 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 II). For this reason, it is not surprising that after the end of the civil war, education of adults became an important priority for the

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[44]Given that women are less likely to be recruited by the gangs, the similarity of the effects for male and female students suggests that these effects are primarily driven by lower returns to education in gang-controlled areas. However, even though both MS-13 and 18th Street have denied membership to women in recent years, this was not always the case. Until the mid-2000s, women often joined the ranks of both gangs and held similar status to lower-level *homeboys*. In later years, women also often provided lower-level support to the day-to-day criminal activities of both groups. Thus, women may also have been partly affected by criminal recruitment.

[45]Table A.XI in the Appendix also presents the effect on the schools' average high school exit exam scores (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 nongang areas, potentially increasing the probability that they decide not to pursue further education.

government and was even explicitly mentioned in the Constitution, as well as in the General Law of Education (chapter VII, articles 28 to 33). From 1994 to 1997, the government rolled out the Program for Adult Literacy and Education (*Programa de Alfabetización y Educación Básica de Adultos*, PAEBA), a program designed to provide school-level education for the adult population. It was very popular: from 2000 to 2007, 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 nongang areas (Appendix Figure A.2 and Figure S.4 in the Supplementary Materials), one can see that the share of population with a high school degree increased throughout San Salvador, but 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 nongang 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 homes, the locations of which are unknown, making it impossible to compare enrollment in gang and nongang areas (Libreros et al., 2010). However, PAEBA was also partly implemented by the schools, which reported program completion rates to the central government. We leverage administrative data from the 2005–2017 annual school censuses to compare the dropout rates among adults in gang and nongang areas. Column 6 of Appendix Table A.X presents the results, showing that adults from gang territories were significantly more likely to drop out of the program. Moreover, on average, the difference in the dropout rate between gang and nongang neighborhoods was twice as large for adults as 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 nongang 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 A.VII, 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. *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 were 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 generally experienced gang activity in the area where it is situated. Table V presents the results, showing that firms' exposure to extortion (column 1) and gang activity (column 2) does not change at the boundaries of gang territory.

TABLE V

EXTORTION AND VIOLENCE

	Firm was extorted	Firm experienced gang activity	Amount firm paid in extortion	Person was extorted	Amount person paid in extortion	Gang homicides (per km^2): All years	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 boundaries 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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries). 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 boundaries of gang territory).

Second, we address the possibility that, although firms on both sides of the gang-territory boundaries have the same probability of being extorted, the extortion *amounts* 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, made to the gangs from 2012 through 2019. Column 3 of Table V presents

the results of estimating Specification (1) for the size of the extortion payments, showing that they also do not change at the boundaries of gang territory.[46]

Third, we consider the possibility that, while firms on both sides of the boundaries 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 V 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, we find no change at the boundaries of gang areas.

Finally, we analyze whether neighborhoods on both sides of the gang-territory boundaries have similar levels of gang-related homicides and robberies. Columns 6–8 of Table V present the results of estimating Specification (1) for the number of gang-related homicides and robberies per square kilometer as the outcome variables; they show no differences in the rates of these crimes.[47]

The results in Table V are not surprising. They 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.[48]

The results in Table V have two important implications. The first one is that, since there are no changes in extortion and other criminal activities at the boundaries of gang territory, these factors cannot be driving the results in Table I. The second one is that, since the gangs are active in both the treatment and the control groups, the regression discontinuity results in Table I should not be interpreted to represent the overall effects of gang presence.

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[46]We have also verified that the frequency of these payments is the same on both sides of the gang boundaries, confirming the results from column 1 of Table V.

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

[48]As shown in the fourth part of Appendix Figure A.8, in nongang areas, exposure to criminal activities does decrease with distance to the boundaries of gang territory, plausibly due to a combination of security concerns and capacity constraints on the part of the gangs, but there is no change directly at the boundaries of gang territory.

Instead, they should be interpreted to denote the effects of gangs' territorial control and accompanying restrictions on mobility.

In Section 6, we discuss this latter implication in much more detail and quantify the effects of exposure to overall gang presence, not just gang territorial control.

6. AGGREGATE EFFECTS OF GANG PRESENCE

As we previewed at the end of Subsection 5.3, the regression discontinuity results largely represent the socioeconomic costs of full territorial control by the gangs and not necessarily other forms of gang activity. In this section, we use data for all of El Salvador to analyze the broader consequences of gang presence on economic activity in the country.

6.1. *Theoretical Framework*

To clarify the distinction between gang presence and gang territorial control, we begin with presenting a simple conceptual framework for the interpretation of our results. Appendix Subsection A.5 provides a more detailed discussion of the model behind this conceptual framework, as well as an analysis of two counterfactual scenarios: the removal of restrictions on individuals' mobility and the full removal of gang presence.

We consider a one-dimensional city on a unit interval, where locations are characterized by their proximity to the gangs. Overall, the city is divided into three qualitatively different areas. Places in $[0, b]$ are fully controlled by the gangs, and individuals living there cannot work in other parts of the city. These locations are the equivalent of gang territory in the regression discontinuity design. Places in $[b, b + \delta]$ ($\delta > 0$) are not controlled by the gangs. Individuals living there are free to work in any nongang part of the city, but firms in $[b, b+\delta]$ are still exposed to extortion and other gang-related activities. Together, places in $[0, b + \delta]$ comprise what we refer to as areas with gang presence. Finally, places in $[b + \delta, 1]$ do not have any gang presence.

The differences in labor-market conditions between these three areas are determined by the production technology used by firms in that location. All firms can choose between two options: a simple technology that does not require any investment from the firms and a more productive technology that requires an initial investment at a fixed cost. In the absence of gangs, firms benefit from the adoption of the productive technology. However, productive firms in areas with gang presence face a high risk of their output being extorted, which makes them choose the simple technology instead. Thus, only firms in areas without

gang presence choose to increase their productivity. In turn, as we show in Appendix Sub-section A.5, under a realistic set of parameters, this results in increased employment and higher wages in those firms.

Despite labor-market conditions only being better in areas without gang presence, individuals living in $[b, b + \delta]$ are still able to take advantage of them because of their ability to commute to $[b + \delta, 1]$, whereas people living in $[0, b]$ cannot do so. This part of the mechanism highlights the importance of restrictions on mobility for people living in gang territory (i.e., $[0, b]$). At the same time, restrictions on mobility only matter due to higher economic growth in areas without gang presence: if firms in all parts of the city were the same, there would have been no need to commute to $[b + \delta, 1]$. Based on this conclusion, we now analyze whether, after the arrival of the gangs, locations without gang presence indeed experienced more economic growth than places exposed to gang activity.

6.2. *Difference-in-Differences: Empirical Strategy*

To analyze the aggregate impact of gang activity, we use data from all of El Salvador to perform a difference-in-differences analysis, comparing the evolution of economic activity in areas with varying levels of gang activity after 1996. Our analysis exploits two sources of variation: the timing of gang members' deportation 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 of the first wave of deportations from the United States, locations that would later experience different levels of gang activity had similar rates of economic development. However, after 1996, we expect to see higher rates of economic growth in areas with low levels of gang presence.

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 municipalities of birth of known gang leaders as a treatment variable for whether the municipality became exposed to gang activity.[49] We then estimate the following event study

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[49]We verify the relevance of this treatment variable by showing that gang leaders' birth municipalities were 80 percentage points more likely to experience a gang-related homicide in 2003–2004, the first years for which geocoded homicide data are available.

model (Specification 3) to measure the effect of gang presence on economic growth.

$$\textit{Econ. growth}_{i,t} = g_i + \gamma_t + \sum_{j \neq 1995} \beta_j \, \textit{gang presence}_i \times \mathbb{1}\{Year = j\}_t + \varepsilon_{i,t}. \quad (3)$$

Econ. growth represents various measures of economic growth in municipality i at time t. *gang presence* is a dummy for whether a gang leader was born in municipality i; g_i and γ_t represent municipality and year fixed effects, respectively. Standard errors are estimated using Conley standard errors with spatial correlation within a 5 km radius. The coefficients of interest are β_j, which represent the differences in economic growth between locations with and without gang presence relative to 1995—the year before the change in the United States immigration policy.

We use three outcome variables to measure municipality-level growth in economic activity. The first one is the opening of new business establishments. Specifically, we use data from the 2005 economic census, which includes information on when the firms were opened.[50] The second outcome variable is nighttime light density (or luminosity) which recent studies have found to be a good proxy for local-level economic activity (Chen and Nordhaus, 2011, Henderson et al., 2012). Finally, we use data on household income, which is based on annual household surveys conducted in 1992–2007 by DIGESTYC. In all three cases, the outcomes are measured in percentage points, normalized to be 100 percent in 1995–1996, both in areas with and without gang presence. In addition, given that the gangs were primarily attracted to large cities, to avoid the comparison between urban and rural locations, we limit our analysis to urban municipalities.

6.3. *Difference-in-Differences: Results*

Figure 4 presents the results of estimating Specification (3) for the three outcome variables.[51] It shows that, before the 1996 change in United States immigration policy, areas with and without future gang presence experienced similar growth in economic activity. However, after the arrival of the gangs in 1996–1997, municipalities with gang presence experienced significantly lower economic growth.

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[50]Given that the economic census was conducted in 2005, to be included in our sample, the firm must not have closed until that time. Thus, our results should be interpreted as illustrating an effect on the opening of moderately successful business establishments.

[51]The corresponding regression coefficients are reported in Table A.XII in the Appendix.

FIGURE 4.—Gang Presence and Economic Activity
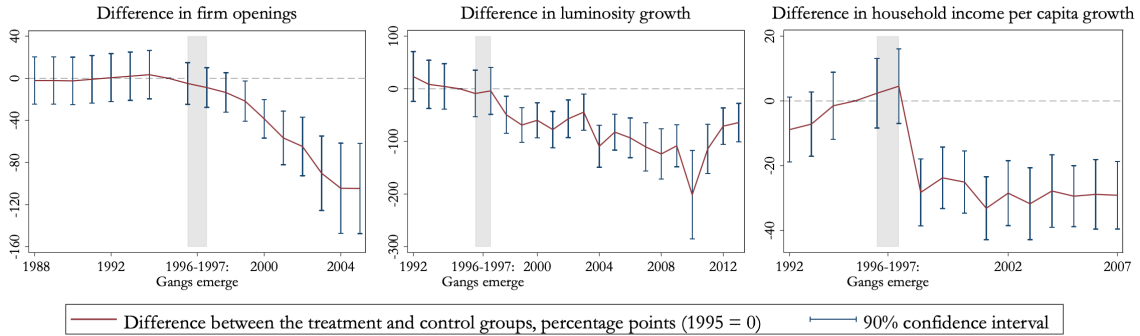
Note: The figure presents an event study graph for the differences in economic growth between municipalities with and without gang presence. For all three outcome variables, the data are in percentage points, normalized to be equal to 100 percent in 1995–1996, before the change in the United States immigration policy.

The magnitude of the effects is substantial. For example, by 2005, municipalities without gang presence had experienced a 105 percentage point higher rate of new business openings. Additionally, after 1997, on average, these areas had an 82 percentage point higher growth in nighttime light density and a 28.5 percentage point higher growth in household income.[52] Overall, these results confirm the notion that, after the arrival of the gangs, most economic growth has taken place in areas far away from gang territory, plausibly due to business owners' desire to avoid extortion and other forms of gang activity.

We also complement the difference-in-differences results by using household income data from our 2019 survey in San Salvador and performing a back-of-the-envelope calculation that compares locations without gang presence separately to fully gang-controlled neighborhoods and places with only some gang activities.[53] We find that, after 1997, areas with no gang presence experienced approximately 50 percentage points higher growth in household income than the former and approximately 9 percentage points higher growth than the latter. Thus, while proximity to places with the highest growth of employment

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[52]According to Henderson et al. (2012), a one percentage point change in luminosity corresponds to a 0.28 percentage point change in GDP. Thus, between 1998 and 2013, on average, areas without gang presence had approximately $82 \times 0.28 = 23$ percentage points higher GDP growth compared to areas with gang activity. This estimate closely aligns with the one for household income.

[53]According to the 2007 census, 60% of San Salvador's population lived in gang-controlled neighborhoods. Thus, the average household income in San Salvador is equal to $A = 0.4 GC + 0.6 GP$, where GC and GP represent household income from the 2019 survey in fully gang-controlled parts of the city and places with only some gang presence, respectively. Then, without gang presence, San Salvador would have been expected to have an average household income of $1.285A$, which, in turn, allows for a comparison with GC and GP.

opportunities positively affected individuals' earnings, it was residents of gang-controlled neighborhoods who were particularly negatively affected due to their inability to commute across the boundaries of gang territory.

We also analyze whether the effects of gang presence are different in the largest urban centers (e.g., San Salvador) and in the rest of the country. To address this question, we follow Arkhangelsky et al. (2021) and implement two types of synthetic difference-in-differences analyses. The first one defines the treatment variable in the same way as in the baseline difference-in-differences estimation. The second one narrows the treatment group to the four largest cities in El Salvador, all of which have had a substantial gang presence since the late 1990s: San Salvador, Soyapango, Santa Ana, and San Miguel. Appendix Figure A.9 presents the two sets of results. In general, we find the two specifications to be quite similar, suggesting that the largest cities were not differentially affected compared to other places with gang presence.

7. CONCLUDING REMARKS

Overall, the results presented in this paper indicate that, via a combination of restrictions on individuals' mobility and displacement of economic activity, nonstate armed actors can have a considerable negative impact on socioeconomic development. These findings have broad policy implications, shedding light on the long-term consequences of deporting individuals with criminal records to a country with low state capacity, suggesting that improvements in state capacity can significantly improve economic growth, and highlighting the importance of freedom of movement for socioeconomic development.

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ONLINE APPENDIX

A. ADDITIONAL INFORMATION AND ROBUSTNESS CHECKS

A.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 boundaries of gang territory (either between the gang and the state or between the two gangs). Panel A of Appendix Figure A.10 presents the number of gang-related homicides that took place in 2003-2008 by 10-meter bins on either side of the boundaries of gang territory; Panel B of Figure A.10 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.[54] In turn, the fact that the highest number of gang-related

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[54]Notably, as shown in Figure A.10, 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 I are robust to excluding observations from neighborhoods close to the regression discontinuity cutoff (see Table A.III). 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 I are not driven by areas with the highest numbers of gang-related homicides.

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.

A.2. *Selective Migration: Out-of-Sample Migration*

In Subsection 4.3, we demonstrated that our main results 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 I 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 I. 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) and "poor" if it does not. The only exception is the variable for not having a bathroom, which is defined in the opposite way. 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) 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 individuals 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.

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 boundaries of gang territory, separately for locations inside and outside of gang territory. We denote those numbers as G

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[55]If rich, educated individuals from nongang 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.

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.

$$\frac{(1-\alpha)x}{(1-\alpha)x + (1-\beta)(1-x)} = G. \tag{4}$$

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 nongang locations (i.e., $x = NG$).

Appendix Table A.XIII 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 I. 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.[56] 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 San Salvador is only $625. Thus, even to send one family member abroad, Salvadoran households have to save up for a 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.

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[56]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.

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Appendix Table A.XIV 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 boundaries 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 nongang areas are not statistically different from one another. Moreover, although rich households are more likely to have a family member who moved abroad, the magnitude of that effect is much smaller than the rates of selective out-of-sample migration from Appendix Table A.XIII 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 A.XIII 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 I.[57][58]

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[57]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 nongang areas, as suggested by the results in Table A.XIV, 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 A.XIV would overestimate the probability of individuals from rich households migrating out of sample. Finally, the 50% number required to generate the discontinuities in Table I 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.

[58]We also perform a test in the spirit of McCrary (2008) to check whether, at the boundaries 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 boundaries of gang territory. The results in Table S.XII in the Supplementary Materials demonstrate that there are no discontinuous changes in household and population density at the boundaries 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.

Subsection S.3 of the Supplementary Materials 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.[59]

A.3. *Public Goods Provision*

We analyze whether public goods provision can explain the differences in socioeconomic development between gang and nongang neighborhoods. If neither the government nor the gangs are able and willing to provide public goods in those locations, it could greatly impact 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.[60] Second, we use data from our 2019 survey, where individuals were asked to rate (on a seven-point scale) their satisfaction with the availability and quality of health services, education centers, roads, and electricity service. Appendix Table A.XV presents both sets of results, showing that there are no discontinuities in any of these variables.[61] In addition, as was presented in Table II, we also find no differences in road density or 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 Appendix Table A.XV can be explained by the fact that the government has been willing to invest in social, educational, and job-training programs in gang areas, partly 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 our 2019 survey, we test this

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[59]These results are also consistent with previous findings in Sviatschi (2022b), showing that migration is high in contested areas with high levels of violence and not in areas that are under stable gang control.

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

[61]In the Supplementary Materials, Figure S.9 illustrates the results for the number of schools and hospitals per square kilometer and for individuals' satisfaction with the availability and quality of public goods.

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.[62] Appendix Table A.XVI presents the results, showing that respondents from gang areas are not more likely to seek help from the gangs than residents of nongang 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.

A.4. *Occupational Structure and Hours Worked*

We show that the differences in socioeconomic development in Table I 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).[63] Table S.XIII in the Supplementary Materials presents the results. If anything, the differences in socioeconomic conditions are even larger for employed individuals than for the full sample. Similarly, there is no discontinuity in the probability of being employed. Focusing on individuals aged between 18 and 65, we find that residents of gang territory are only 0.2 percentage points less likely to be employed than individuals from nongang areas, with a standard error of 1.1 percentage points. 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, but they generally find some form of employment.

We also demonstrate that the differences in socioeconomic development cannot be explained by higher levels of informal employment in gang territory. Table S.XIV in the Supplementary Materials 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.

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

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

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 S.XV in the Supplementary Materials presents the results of estimating Specification (1) for these outcome variables, showing that individuals on both sides of the boundaries of gang territory work the same number of hours and have similar willingness to work.

A.5. *Details of the Theoretical Framework*

In this subsection of the Appendix, we present the details of the theoretical framework outlined in Subsection 6.1 of the paper and provide a detailed discussion of two counterfactual scenarios: the removal of restrictions on individuals' mobility and the full removal of gang presence.

Model. Consider a one-dimensional mapping of a city on an interval $[0,1]$. Locations in this linear city are characterized by distance to the boundaries of gang territory, which are located in point $b \in (0,1)$. Thus, areas $[0,b]$ are fully controlled by the gangs, while areas $(b,1]$ are not. At each point of the linear city, there is a mass of ex-ante identical firms that produce the same good. The price for the good is set in a competitive market and is identical for all the firms, regardless of their location. We, therefore, normalize the price to be equal to 1.

We focus on the following two-period model. In the first period, the firms decide whether to produce in the market, and each firm faces the following production choice. All the firms can use a simple labor-only technology that yields the following production function: $F_1(L) = L^\alpha$. This technology does not require any investment on the part of the firm. Alternatively, a firm can choose to purchase equipment that would make its workers more productive yielding the production function $F_2(L) = \bar{K}L^\alpha$, where $\bar{K} > 1$. To adopt this technology, the firm needs to pay a fixed cost of r, where r is exogenously determined for the entire city.[64] To operate, all the firms also have to pay a fixed cost of c, regardless of

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[64]For simplicity, this version of the model assumes that the firm cannot choose a level of K other than $\bar{K}$. This assumption can be interpreted as a technology package (e.g., software subscription) that affects all the workers.

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their technology choice. The wages that the firms pay to their workers (w_l) are set in a competitive *location-specific* market.

In the second period, depending on their location and technology choice, the firms face different levels of extortion by the gangs, who can appropriate the firms' revenue. A firm can only be extorted by the gangs if it is located in $[0, b + \delta]$, where $\delta > 0$. In other words, the gangs are only able to extort the firms in their territory or within δ of their boundaries. The gangs can also only extort the firms that choose to purchase the productivity-enhancing equipment (e.g., because the equipment can only be accessed from a specific location which can be targeted by the gangs, while labor-only production is easier to hide).

Given this setting, in the second period, the gangs appropriate the revenue of all the productive firms located in $[0, b + \delta]$. Anticipating this fact, the firms located in $[0, b + \delta]$ do not purchase the productivity-enhancing equipment and use the labor-only technology. In turn, we assume that $\bar{K}$ and r are such that, in the absence of extortion, it is profitable for the firms to purchase the productivity-enhancing equipment (i.e., the firms in $(b + \delta, 1]$ purchase it). We describe the condition for this choice below[65]

Thus, firms in location $l \in [0, b + \delta]$ face the following profit maximization problem.

$$\max_{L} \left\{ L^{\alpha} - w_l L - c \right\}. \tag{5}$$

The solution to the profit maximization problem of these firms then yields

$$L(w_l) = \left[\frac{\alpha}{w_l} \right]^{\frac{1}{1-\alpha}}. \tag{6}$$

$$\pi(w_l) = w_l^{\frac{\alpha}{\alpha - 1}} \left[\alpha^{\frac{\alpha}{1-\alpha}} - \alpha^{\frac{1}{1-\alpha}} \right] - c. \tag{7}$$

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[65]In the simplest version of the model, there is a change in firm structure precisely at $b + \delta$. However, the model can be extended to generate a more gradual change in firm structure. To generate this dynamic, one can, for instance, consider a two-dimensional city, where δ is randomly distributed across different parts of it (e.g., due to the presence of natural barriers).

The free entry condition for the firms implies that firms will continue entering the market while their profits are greater than zero. Thus, in equilibrium:

$$w_l^{*\frac{\alpha}{\alpha-1}}\left[\alpha^{\frac{\alpha}{1-\alpha}} - \alpha^{\frac{1}{1-\alpha}}\right] - c = 0 \implies w_l^{*\frac{\alpha}{1-\alpha}} = \frac{\alpha^{\frac{\alpha}{1-\alpha}} - \alpha^{\frac{1}{1-\alpha}}}{c} \implies \tag{8}$$

$$\implies w_l^* = \left(\frac{\alpha^{\frac{\alpha}{1-\alpha}} - \alpha^{\frac{1}{1-\alpha}}}{c}\right)^{\frac{1-\alpha}{\alpha}} \implies L^* = \frac{\alpha^{\frac{1}{1-\alpha}}c^{\frac{1}{\alpha}}}{\left(\alpha^{\frac{\alpha}{1-\alpha}} - \alpha^{\frac{1}{1-\alpha}}\right)^{\frac{1}{\alpha}}}.$$

In turn, firms in location $l \in (b + \delta, 1]$ face the following profit maximization problem.

$$\max_L \left\{\bar{K}L^\alpha - w_l L - c - r\right\}. \tag{9}$$

The solution to the profit maximization problem of these firms yields

$$L(w_l) = \left[\frac{\alpha\bar{K}}{w_l}\right]^{\frac{1}{1-\alpha}}. \tag{10}$$

$$\pi(w_l) = w_l^{\frac{\alpha}{\alpha-1}}\bar{K}^{\frac{1}{1-\alpha}}\left[\alpha^{\frac{\alpha}{1-\alpha}} - \alpha^{\frac{1}{1-\alpha}}\right] - c - r. \tag{11}$$

The free entry condition implies that, in equilibrium, the firms' profits are equal to zero.

$$w_l^{**\frac{\alpha}{\alpha-1}}\bar{K}^{\frac{1}{1-\alpha}}\left[\alpha^{\frac{\alpha}{1-\alpha}} - \alpha^{\frac{1}{1-\alpha}}\right] - c - r = 0 \implies w_l^{**\frac{\alpha}{1-\alpha}} = \frac{\bar{K}^{\frac{1}{1-\alpha}}\left[\alpha^{\frac{\alpha}{1-\alpha}} - \alpha^{\frac{1}{1-\alpha}}\right]}{c + r} \implies$$
$$\tag{12}$$

$$\implies w_l^{**} = \left(\frac{\bar{K}^{\frac{1}{1-\alpha}}\left[\alpha^{\frac{\alpha}{1-\alpha}} - \alpha^{\frac{1}{1-\alpha}}\right]}{c + r}\right)^{\frac{1-\alpha}{\alpha}} \implies L^{**} = \frac{\alpha^{\frac{1}{1-\alpha}}(c+r)^{\frac{1}{\alpha}}}{\bar{K}^{\frac{1}{\alpha}}\left(\alpha^{\frac{\alpha}{1-\alpha}} - \alpha^{\frac{1}{1-\alpha}}\right)^{\frac{1}{\alpha}}}.$$

Empirically we observe that firms far away from gang territory (i.e., in $(b + \delta, 1]$) pay higher wages and hire more workers. For the model to match these empirical findings, the

following conditions need to be satisfied.

$$\left(\frac{\bar{K}^{\frac{1}{1-\alpha}}\left[\alpha^{\frac{\alpha}{1-\alpha}}-\alpha^{\frac{1}{1-\alpha}}\right]}{c+r}\right)^{\frac{1-\alpha}{\alpha}} > \left(\frac{\alpha^{\frac{\alpha}{1-\alpha}}-\alpha^{\frac{1}{1-\alpha}}}{c}\right)^{\frac{1-\alpha}{\alpha}} \implies \bar{K} > \left(1+\frac{r}{c}\right)^{1-\alpha} \quad (13)$$

$$\frac{\alpha^{\frac{1}{1-\alpha}}(c+r)^{\frac{1}{\alpha}}}{\bar{K}^{\frac{1}{\alpha}}\left(\alpha^{\frac{\alpha}{1-\alpha}}-\alpha^{\frac{1}{1-\alpha}}\right)^{\frac{1}{\alpha}}} > \frac{\alpha^{\frac{1}{1-\alpha}}c^{\frac{1}{\alpha}}}{\left(\alpha^{\frac{\alpha}{1-\alpha}}-\alpha^{\frac{1}{1-\alpha}}\right)^{\frac{1}{\alpha}}} \implies \bar{K} < 1+\frac{r}{c} \quad (14)$$

Together, these two conditions yield $\bar{K} \in \left(\left(1+\frac{r}{c}\right)^{1-\alpha}, 1+\frac{r}{c}\right)$.[66] Intuitively, condition (13) states that $\bar{K}$ needs to be sufficiently high for the productivity gains from $\bar{K}$ to offset the decrease in demand due to the necessity of paying r to adopt the technology. In turn, condition (14) states that firms will only hire more workers if $\bar{K}$ is sufficiently low that the increase in wages does not negate the increase in labor demand due to higher productivity.

Finally, to ensure that the described situation represents an equilibrium in this market, we need to ensure that firms far away from gang territory (i.e., in $(b+\delta, 1]$) have incentives to purchase the productivity-enhancing equipment instead of using the labor-only technology. Given (12), this condition requires that

$$w_l^{**\frac{\alpha}{\alpha-1}}\left[\alpha^{\frac{\alpha}{1-\alpha}}-\alpha^{\frac{1}{1-\alpha}}\right] - c < 0 \implies \bar{K} > \left(1+\frac{r}{c}\right)^{1-\alpha}. \quad (15)$$

Thus, (13) guarantees that the firms do not have incentives to change their production behavior.

Counterfactual analysis. Using the theoretical framework outlined above, we now provide a counterfactual analysis of two hypothetical scenarios: the elimination of gang-imposed restrictions on individuals' mobility and the full removal of gang presence.

In the setting of our model, under the former scenario, firms in $[0, b+\delta]$ would still be unwilling to adopt the productive technology. As a result, both aggregate production and aggregate employment in productive firms, which is determined by the free entry condition, would remain the same. Individuals living in $[0, b]$ would still benefit from their ability to

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[66]For instance, this condition would be satisfied for $\bar{K} = 2$, $r = 2$, $c = 1$, and $\alpha = 0.5$.

commute to work in high-productivity firms, but given the zero-sum nature of this economy, these benefits would come at the expense of workers living in $[b, 1]$.

On the other hand, if gang presence were fully eliminated, firms in $[0, b+\delta]$ would find it profitable to adopt the productive technology, leading to both higher aggregate production and higher demand for labor. Consequently, benefits would accrue to individuals living in all parts of the city, although residents of former gang-controlled neighborhoods would gain the most due to their previous inability to work in high-productivity firms.

In mid-2022, El Salvador witnessed unprecedented government-led crackdowns on criminal activity, leading to the de facto implementation of this latter scenario. In a separate project, we provide a detailed analysis of the consequences of these crackdowns, showing how former gang-controlled neighborhoods experienced significant improvements in mobility (Melnikov et al., 2024).

ONLINE APPENDIX TABLES

TABLE A.I

SOCIOECONOMIC CHARACTERISTICS FROM THE 2019 SURVEY

	Has a high school degree	Has a university degree	Household income	Works in a firm with ≥ 100 employees	Works in a firm with ≥ 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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

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TABLE A.II

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	-0.147 (0.151)	-0.018 (0.044)	0.026 (0.036)	0.033 (0.059)	-0.008 (0.028)	0.010 (0.076)
Mean of dep. var.	0.883	0.033	0.979	0.064	0.012	0.074
Observations	6,716	5,623	5,714	5,714	5,714	5,374

	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	0.007 (0.014)	-0.048 (0.147)	-0.091 (0.150)	-0.022 (0.035)	-0.016 (0.106)	-0.130 (0.377)
Mean of dep. var.	0.026	0.222	0.528	0.936	0.171	2.427
Observations	5,308	5,411	5,434	5,475	5,419	5,714

	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	-0.034 (0.028)	0.022 (0.080)	0.007 (0.059)	-0.035 (0.081)	-0.009 (0.054)	0.001 (0.050)
Mean of dep. var.	0.892	0.299	0.0920	0.930	0.313	0.360
Observations	19,130	18,563	18,563	5,623	5,238	18,563

	Demographic characteristics		Neighborhood characteristics			
	Female	Age	Urban territory	Road density	Elevation	Tree coverage
	(19)	(20)	(21)	(22)	(23)	(24)
Placebo treatment group	0.016 (0.017)	-0.741 (1.920)	-0.002 (0.062)	-9.353 (9.426)	-51.593 (52.059)	-0.010 (0.016)
Mean of dep. var.	0.541	29.63	0.954	19.54	676.8	0.008
Observations	20,967	20,967	47	47	47	47

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. Similarly to Table III, we exclude 25% of the largest census tracts, which are predominantly present outside gang territory. We also include dummies for the three remaining quartiles of the census tract size distribution. Table S.III in the Supplementary Materials reports the results of estimating the same regression specification without excluding the largest census tracts, and instead, including dummies for all four quartiles of the census tract size distribution. The unit of observation is a dwelling, household, individual, or census tract, 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 boundaries, separately for locations on each side of the placebo boundaries and on each side of the boundaries of gang territory. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the placebo boundaries (separately for each side of the boundaries).

TABLE A.III

EXCLUDING OBSERVATIONS WITHIN 100 METERS OF THE BOUNDARIES 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 boundaries 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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

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TABLE A.IV

CONTROLLING FOR 300×300 METER FIXED EFFECTS

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	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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE A.V

RESTRICTIONS ON INDIVIDUALS' MOBILITY AND LABOR-MARKET OUTCOMES, BY CAR AVAILABILITY

	Works in gang territory	Works in same neighborhood where they live	Has been to Santa Ana	Has been to the beach	Freedom of movement where they live
	(1)	(2)	(3)	(4)	(5)
Gang territory × × Gets to work by car or motorcycle	0.238*** (0.059)	0.102** (0.044)	-0.228*** (0.052)	-0.090** (0.042)	-0.105* (0.055)
Gang territory × × Gets to work in another way	0.532*** (0.041)	0.062* (0.035)	-0.214*** (0.044)	-0.044 (0.034)	-0.105** (0.040)
Mean of dep. var.	0.334	0.302	0.511	0.876	0.809
Observations	1,738	2,071	2,071	2,071	2,071

	Household income	Works in a firm with ≥ 100 employees	Works in a firm with ≥ 200 employees	Gang borders prevented you from finding jobs in large firms in other parts of the city	
	(6)	(7)	(8)	(9)	(10)
Gang territory × × Gets to work by car or motorcycle	-401.78** (165.87)	-0.144*** (0.037)	-0.153*** (0.047)	0.132** (0.050)	
Gang territory × × Gets to work in another way	-257.37*** (92.81)	-0.080*** (0.024)	-0.073** (0.031)	0.091** (0.042)	
Gang territory × Has a car					0.089* (0.048)
Gang territory × Does not have a car					0.105** (0.046)
Mean of dep. var.	629	0.169	0.133	0.407	0.407
Observations	2,071	2,071	2,071	2,313	2,313

Note: *** p<0.01, ** p<0.05, * p<0.1. Columns 1–9 of the table present the results of estimating Specification (1) for mobility and labor-market outcomes with the dummy for gang territory replaced with dummies for individuals in gang territory who get to work by car or motorcycle and individuals in gang territory who get to work in some other way. In Column 10, the dummy for gang territory is replaced with similar dummies for individuals in gang territory who own a car and individuals in gang territory who do not. The sample consists only of survey respondents who have a job. Santa Ana is a neighboring municipality, which is approximately 60 kilometers away from San Salvador. The beach 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 boundaries of gang territory, separately for locations on each side of the boundaries, as well as a dummy for getting to work by car or motorcycle (in Column 10, a dummy for owning a car). Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

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TABLE A.VI

RESTRICTIONS ON INDIVIDUALS' MOBILITY AND LABOR-MARKET OUTCOMES, BY EDUCATION

	Works in gang territory	Freedom of movement where they live	Gang borders prevented you from finding jobs in large firms in other parts of the city	Household income	Works in a firm with ≥100 employees	Works in a firm with ≥200 employees
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory × × High school degree	0.323*** (0.043)	-0.072* (0.041)	0.115** (0.042)	-378.77*** (113.63)	-0.085*** (0.028)	-0.087** (0.036)
Gang territory × × No high school degree	0.577*** (0.035)	-0.106** (0.043)	0.083* (0.047)	-158.74 (106.20)	-0.052* (0.028)	-0.057* (0.030)
Mean of dep. var	0.330	0.812	0.407	628.3	0.170	0.133
Observations	1,707	2,275	2,313	2,275	2,033	2,033

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 by education. The unit of observation is an individual. Omitted controls include a dummy for having a high school degree and a linear trend in distance to the boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE A.VII

CONSEQUENCES OF LOW LABOR MOBILITY

	Household income			Works in a firm with ≥ 100 employees			Works in a firm with ≥ 200 employees		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lives in gang territory	-352.60 (112.22)*** [84.97]***	-429.99 (127.82)*** [98.80]***	-235.09 (112.56)** [81.33]***	-0.123 (0.019)*** [0.042]***	-0.210 (0.022)*** [0.046]***	-0.105 (0.023)*** [0.041]***	-0.115 (0.028)*** [0.035]***	-0.187 (0.025)*** [0.038]***	-0.102 (0.030)*** [0.035]***
Lives in gang territory, works in nongang territory		167.64 (32.69)*** [37.08]***	85.39 (30.23)*** [38.73]**		0.182 (0.026)*** [0.025]***	0.129 (0.025)*** [0.024]***		0.152 (0.027)*** [0.024]***	0.110 (0.026)*** [0.023]***
Has a high school degree			89.11 (19.90)*** [26.78]***			0.124 (0.021)*** [0.020]***			0.088 (0.018)*** [0.019]***
Has a university degree			445.46 (76.96)*** [62.62]***			0.148 (0.029)*** [0.032]***			0.132 (0.027)*** [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 boundaries of gang territory, separately for locations on each side of the boundaries, 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 boundaries of gang territory, separately for each side of the boundaries. Standard errors in brackets are adjusted to allow for spatial correlation within a 100 meter radius (Conley correction).

TABLE A.VIII

RESTRICTIONS ON INDIVIDUALS' MOBILITY AND LABOR-MARKET OUTCOMES, BY GENDER

	Works in gang territory	Freedom of movement where they live	Gang borders prevented you from finding jobs in large firms in other parts of the city	Household income	Works in a firm with ≥100 employees	Works in a firm with ≥200 employees
	(1)	(2)	(3)	(4)	(5)	(6)
Gang territory × Male	0.454***	-0.077*	0.119**	-370.07***	-0.138***	-0.116***
	(0.042)	(0.043)	(0.050)	(114.52)	(0.034)	(0.037)
Gang territory × Female	0.520***	-0.107**	0.084**	-332.33***	-0.108***	-0.110***
	(0.045)	(0.041)	(0.041)	(107.53)	(0.019)	(0.030)
Mean of dep. var	0.334	0.811	0.407	625	0.169	0.133
Observations	1,738	2,314	2,313	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 by gender. The unit of observation is an individual. Omitted controls include a dummy for being female and a linear trend in distance to the boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE A.IX

FIRMS' LOCATION, PROFITS, REVENUE, AND COSTS

	Log of the firm's:					Census:	Google Maps:			
	Profits	Revenue	Costs	Employees	Costs per employee	All firms	All firms	Cafes & restaurants	Grocery stores	Pharmacies
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Gang territory	-0.198	-0.027	0.094	-0.019	0.133	-0.303	-0.003	-0.229	0.088	-0.052
	(0.362)	(0.332)	(0.330)	(0.121)	(0.239)	(0.406)	(0.111)	(0.185)	(0.121)	(0.144)
Mean of dep. var.	9.767	10.97	10.44	1.756	8.679	5.062	4.860	2.394	1.882	1.251
Observations	5,631	6,118	6,083	6,120	6,083	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 and their characteristics. The results in columns 1–6 are based on the supplement to the 2005 economic census. In columns 1–5, the unit of observation is a firm; in columns 6—a sector, the analogue of the census tract in the economic census. The data on the number of business establishments in columns 7–10 come from Google Maps. In these regressions, the unit of observation is a 10 meter bin, denoting distance to the boundaries of gang territory, weighted by the size of the area of the distance bins. Omitted controls include a linear trend in distance to the boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE A.X

GANG CONTROL AND DROPOUT RATES

Subsample:	Dropout rate					
	All obs.	Year ≤ 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 × Standard program						0.019
						(0.004)***
						[0.007]***
Gang territory × 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 boundaries of gang territory, separately for locations on each side of the boundaries. 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 boundaries of gang territory, separately for each type of program on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries). Standard errors in brackets are adjusted to allow for spatial correlation within a 100 meter radius (Conley correction).

TABLE A.XI

GANG CONTROL AND EXAM SCORES

Subsample:	Math		Natural sciences		Social sciences		Languages & literature	
	All obs.	Year ≤ 2007	All obs.	Year ≤ 2007	All obs.	Year ≤ 2007	All obs.	Year ≤ 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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE A.XII

DIFFERENCE-IN-DIFFERENCES ESTIMATES

	Firm openings		Nighttime light density		Household income	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Baseline Difference-in-Differences Estimates						
Gang presence × Year = 1990	-2.46 (13.70)					
× Year = 1991	-0.95 (13.73)					
× Year = 1992	0.57 (13.89)		23.33 (28.81)		-8.85 (6.09)	
× Year = 1993	1.96 (13.94)		8.46 (27.89)		-7.15 (6.04)	
× Year = 1994	3.45 (13.98)		4.48 (26.31)		-1.49 (6.29)	
× Year = 1996	-4.93 (12.03)		-8.87 (26.82)		2.39 (6.52)	
× Year = 1997	-8.78 (11.43)		-3.87 (27.12)		4.56 (6.99)	
× Year = 1998	-13.51 (11.41)		-49.26** (21.38)		-28.23*** (6.29)	
× Year = 1999	-21.65* (11.59)		-68.85*** (20.02)		-23.73*** (5.78)	
× Year = 2000	-38.51*** (11.14)		-59.79*** (20.23)		-25.04*** (5.83)	
× Year = 2001	-56.64*** (15.49)		-77.45*** (21.02)		-33.13*** (5.91)	
× Year = 2002	-64.74*** (16.94)		-57.00*** (21.79)		-28.46*** (6.10)	
× Year = 2003	-90.24*** (21.53)		-44.26** (20.90)		-31.73*** (6.74)	
× Year = 2004	-104.49*** (26.03)		-109.25*** (24.22)		-27.80*** (6.80)	
× Year = 2005	-104.69*** (26.04)		-82.28*** (20.75)		-29.39*** (5.73)	
× Year = 2006			-93.16*** (22.94)		-28.84*** (6.52)	
× Year = 2007			-110.30*** (27.78)		-29.10*** (6.33)	
× Year = 2008			-123.75*** (29.03)			
× Year = 2009			-108.28*** (24.22)			
× Year = 2010			-201.26*** (51.07)			
× Year = 2011			-114.14*** (28.52)			
× Year > 1997		-60.26*** (6.85)		-93.54*** (9.35)		-25.57*** (3.17)
Observations	1,818	1,818	2,222	2,222	160,597	160,597
Panel B: Baseline Synthetic Difference-in-Differences						
Gang presence × Year > 1997		-34.42*** (7.70)		-86.77*** (22.26)		-30.26** (13.20)
Panel C: Synthetic Difference-in-Differences for Largest Cities						
Gang presence × Year > 1997		-34.54*** (10.16)		-84.67*** (20.32)		-41.15*** (15.43)

Note: *** $p<0.01$, ** $p<0.05$, * $p<0.1$. The table presents the results of the difference-in-differences and synthetic difference-in-differences analyses for firm openings, nighttime light density, and household income, all of which are measured in percentage points. The outcome variables are normalized to be 100 percent in 1995–1996, both in gang and nongang areas. Omitted controls include year dummies and municipality fixed effects. In columns 5–6, we additionally include municipality-zone fixed effects. Due to lack of space, in column 1, we do not report the estimates for 1988–1989, and in column 3, we do not report the estimates for 2012–2013. Standard errors in parentheses are adjusted for spatial correlation within a 5 kilometer radius (Conley correction).

TABLE A.XIII

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 motorcycle	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 I 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 A.XIV

SELECTIVE OUT-OF-SAMPLE MIGRATION

Panel A: Migration abroad	Family member moved abroad in 1997-2007		
	(1)	(2)	(3)
Gang territory	-0.002 (0.005)	0.000 (0.004)	-0.008 (0.007)
1st principal component of household characteristics	0.063*** (0.008)	0.061*** (0.008)	
1st principal component of household characteristics ×			
× Nongang 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	✓		✓

Panel B: Internal migration	1st principal component of Individual characteristics		1st principal component of Household characteristics	
	(4)	(5)	(6)	(7)
Previously lived in San Salvador	-0.018 (0.035)	0.037 (0.035)	-0.047* (0.028)	0.004 (0.028)
Mean dep. var	0.411	0.381	0.356	0.327
Observations	343,860	250,351	106,303	79,489
Comparison with:	All areas in San Salvador	Gang areas in San Salvador	All areas in San Salvador	Gang areas in San Salvador

Note: Panel A of the table presents the results of estimating the rates of out-of-sample migration from San Salvador. Panel B of the table compares individuals who have previously lived in San Salvador but now live in another municipality of El Salvador to all individuals in the regression discontinuity sample (columns 4 and 6) and residents of gang-controlled neighborhoods in El Salvador (columns 5 and 7). All the variables come from the 2007 census. In columns 1–3 and 6–7, the unit of observation is a household; in columns 4 and 5—an individual. In columns 6–7, we use information on whether the head of the household has previously lived in San Salvador. Omitted controls include a linear trend in distance to the boundaries of gang territory, separately for locations on each side of the boundaries. In columns 1–3, standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries). In columns 4–7, standard errors in parentheses are clustered by municipality.

TABLE A.XV

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 boundaries of gang territory, separately for each side of the boundaries. Omitted controls include a linear trend in distance to the boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries). 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 boundaries of gang territory).

TABLE A.XVI

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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

ONLINE APPENDIX FIGURES

FIGURE A.1.—Socioeconomic Conditions After 10 Years of Gang Control: Dwelling Characteristics
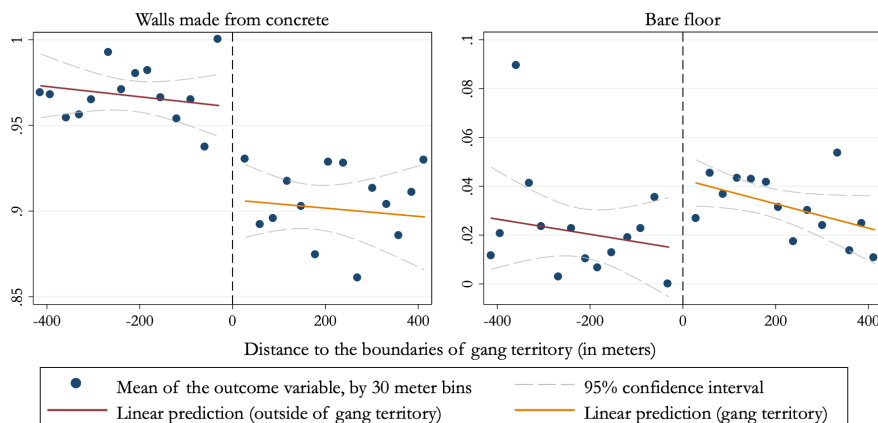
Note: The figure illustrates the results for the dwelling characteristics from Table I. All the variables come from the 2007 census. The unit of observation is a dwelling. All the variables represent the share of dwellings that have the outcome variable (walls from concrete and a bare floor). The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundaries 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 A.2.—Socioeconomic Conditions After 10 Years of Gang Control: Individual Characteristics

Note: The figure illustrates the results for the individual characteristics from Table I. 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 boundaries 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 A.3.—Socioeconomic Conditions After 10 years of Gang Control: Household Characteristics

X-axis: Distance to the boundaries of gang territory (in meters)

- Mean of the outcome variable, by 30 meter bins
- Linear prediction (outside of gang territory)
- 95% confidence interval
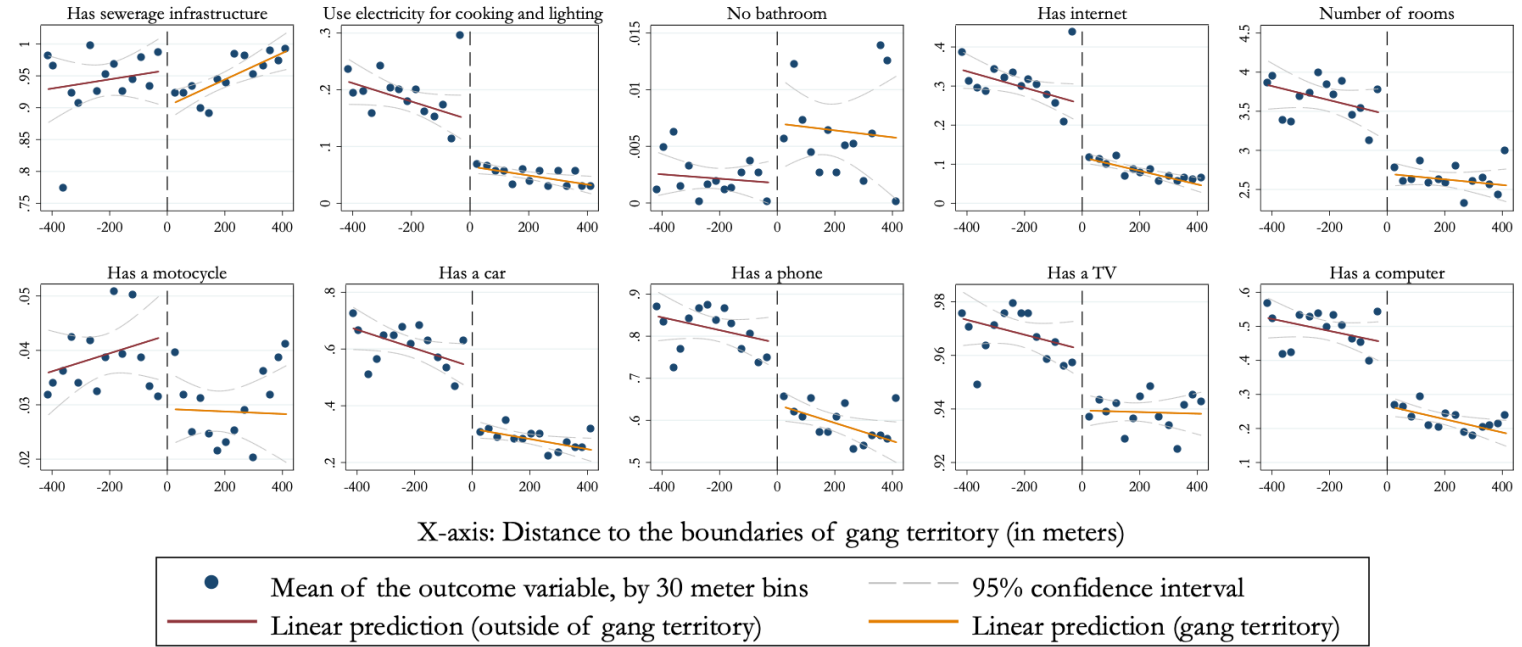- Linear prediction (gang territory)

Note: The figure illustrates the results for the households characteristics from Table I. 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 boundaries 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 A.4.—Household Income After 22 Years of Gang Control
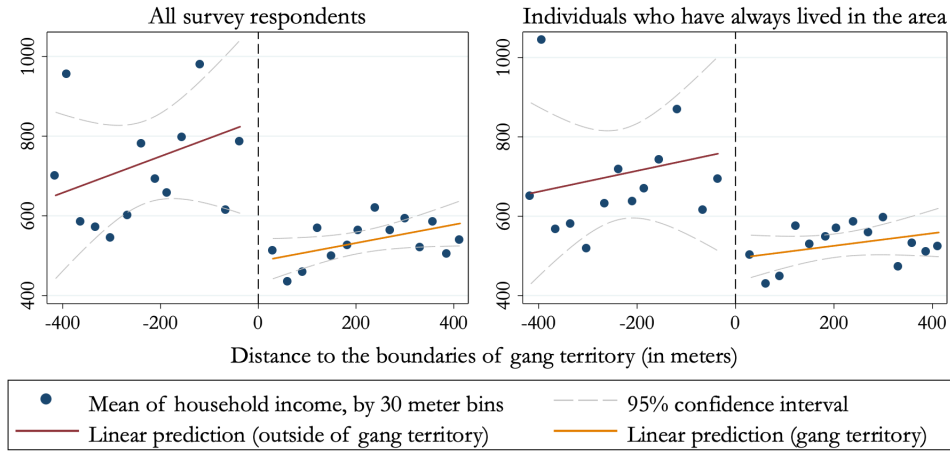
Note: The figure illustrates the results for household income from Appendix Table A.I. The left-hand side of the figure presents the results for the full sample (Panel A of Appendix Table A.I), the right-hand side—for the subsample of individuals who have lived in the same location all their life (Panel B of Appendix Table A.I). The results are very similar. The vertical axis represents the average value of household income; the horizontal axis—distance (in meters) to the boundaries 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 A.5.—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 II. 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 boundaries 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 A.6.—Stability of the Boundaries of Gang Territory
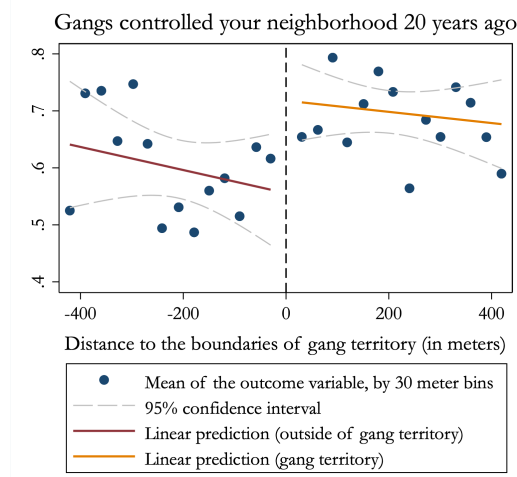
Note: The outcome variable comes from the 2023 individual survey. The vertical axis represents the average share of survey respondents who agree with the statement that the gangs controlled their neighborhood 20 years ago, during the presidency of Francisco Flores Pérez (President of El Salvador from 1999 to 2004); the horizontal axis—distance (in meters) to the boundaries 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 A.7.—Excluding Observations Within 100 Meters of the Boundaries 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 boundaries 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 boundaries 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 A.8.—Firm Characteristics, by Distance to the Boundaries of Gang Territory
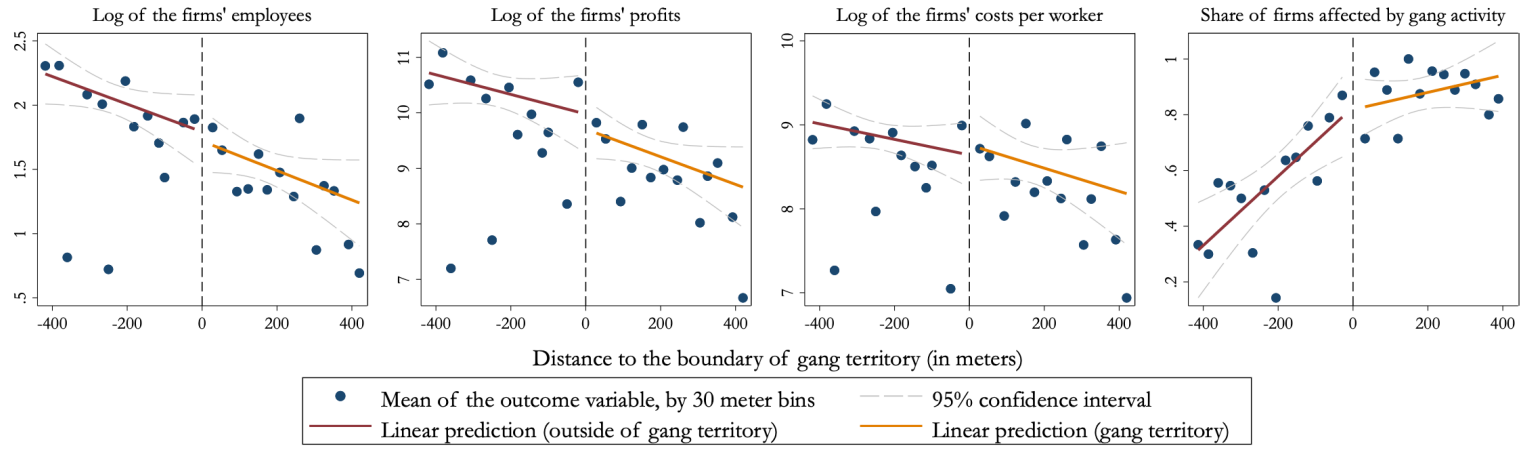
Note: The figure illustrates the results for firm characteristics from columns 1, 4, and 5 of Table A.IX and column 2 of Table V. The first three variables come from the 2005 economic census; the fourth one—from the 2015 survey of firms conducted by FUSADES. The unit of observation is a firm. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundaries 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 A.9.—Synthetic Difference-in-Differences

Number of firms in areas with and without gang presence, percentage points

Treatment group: Gang leaders'
municipalities of birth

Treatment group: Largest cities
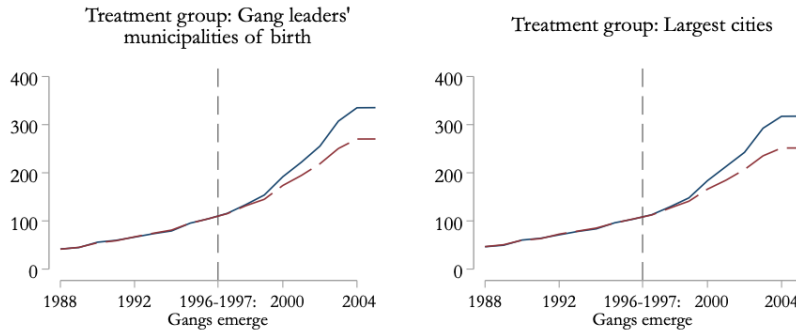
Luminosity in areas with and without gang presence, percentage points

Treatment group: Gang leaders'
municipalities of birth

Treatment group: Largest cities
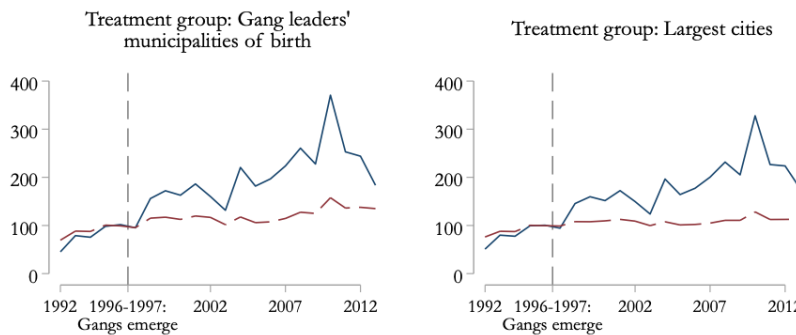
Household income per capita in areas with and without gang presence, percentage points

Treatment group: Gang leaders'
municipalities of birth

Treatment group: Largest cities
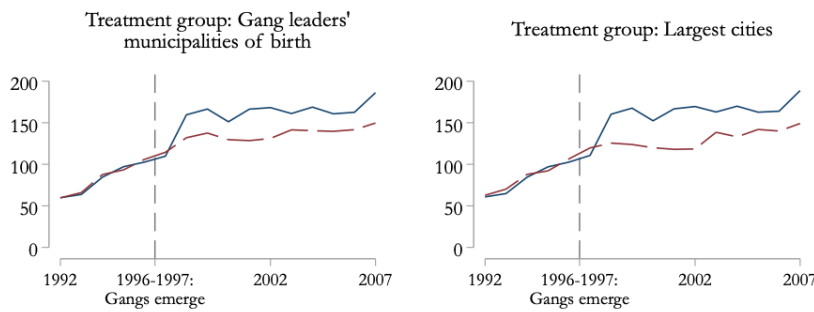
——— Control group   – – – Treatment group

Note: The figure illustrates the results of the synthetic difference-in-differences analysis. The plots on the left side of the figure represent the effects of gang presence when the treatment group is defined in the same way as in the baseline difference-in-differences analysis. The plots on the right side of the figure present the same analysis with the treatment group narrowed down to the four largest cities in El Salvador, all of which have had a substantial gang presence since the late 1990s.

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FIGURE A.10.—Gang-related Homicides, by Distance to the Boundaries of Gang Territory

Panel A

Number of gang-related homicides in 2003-2008

Distance to the boundaries of gang territory (in meters)

- Mean of the outcome variable, by 10 meter bins
- Predicted value (lpoly), outside gang territory
- Predicted value (lpoly), gang territory

Panel B

Number of gang-related homicides in 2009-2014

Distance to the boundaries of gang territory (in meters)

- Mean of the outcome variable, by 10 meter bins
- Predicted value (lpoly), outside gang territory
- Predicted value (lpoly), gang territory

Note: The figure illustrates the number of gang-related homicides in 2003-2008 (Panel A) and 2009-2014 (Panel B), by distance to the boundaries of gang territory. In both cases, the largest number of the homicides took place right at the boundaries of gang territory. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundaries 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.

S.1. *Additional Data Sources*

Homicides and robberies. The data on gang-related homicides come from the PNC and cover 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) and cover 2014 to 2015. They contain information about 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 incarcerated in El Salvador since the mid 1980s. The records contain information about the crimes the individual committed, the date of incarceration, the municipality of birth, and the last known address. For inmates who entered prison before 1997 and whose last 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 pretreatment period.

Household surveys. To analyze household income data beyond San Salvador, we obtained yearly household surveys from DIGESTYC spanning 1992 to 2007. These surveys sample over 10,000 households and include a broad range of questions. In our analysis, we focus on the question related to household income which was asked throughout the years.

2023 survey. In the summer of 2023, we conducted a follow-up survey in gang and nongang neighborhoods in San Salvador, following a similar sampling protocol as our 2019 survey described in Section 3. This survey included in-person interviews with questions about individuals' mobility and employment. Due to improved security in the country, we were also able to ask about gang activity in their neighborhoods, including questions related to the gangs' system of borders.

Cell phone GPS pings. We purchased cell phone ping data from Quexopa, a data aggregator specializing in Latin America, covering January and February of 2022.[67] The dataset includes a unique cell phone identifier, time of capture, operating system, GPS coordinates, and accuracy metrics.

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.[68] 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.[69] 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 in the country in March 2020.[70] We then transform the feature-based map into a binary raster file with the resolution of 1 meter×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).[71] 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. We convert the feature-based map into a binary raster, equal to one for areas that are used for coffee

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[67]Although we sought data from 2019, this was the earliest period available. Due to the large volume of data, it is common practice to delete records older than one year for storage reasons.

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

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

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

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

production. Then, for each of the census tracts from the 2007 census, we calculate the share of their territory that is used for coffee production.

Tree coverage. The data on tree coverage in 2000 come from Global Forest Watch.[72] The 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 nondisclosed 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 nongang 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.[73] 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).

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

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

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.[74] 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).

Housing rent. To obtain information on housing rent, in August-September 2018, we scraped the data from the most popular website for rent listings in El Salvador, OLX (now Encuentra24).[75] We focused on noncommercial 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 boundaries 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.[76] 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

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[74]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 qualitatively very similar.

[75]The Salvadoran version of the website can be accessed here: OLX (now Encuentra24).

[76]The data and a detailed description of it are available here: DMSP-OLS (accessed on May 4, 2020).

(NCEI). If for a particular year, the data were available from more than one satellite, we take the average of the two.

The resolution of the data on nighttime light density is 30 arc seconds×30 arc seconds (i.e., approximately 1 kilometer×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 committed to the criminal records from the Ministry of Justice and Public Security of El Salvador, which contain information on the offender's municipality of birth.

S.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 boundaries 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 boundaries (i.e., 15-44 meters to the boundaries, etc.). After that we randomly selected 10 census tracts from each bin and surveyed 8-10 people in each of them.[77] 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 ar-

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

eas 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 when the boundaries were formed. 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 boundaries 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, for the locations outside of gang territory, it does sometimes affect the distance from them to the boundaries 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 implement 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 boundaries of gang territory. Thus, the distance between a particular location and the boundaries 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 northwestern 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.[78]

Extortion. Our measures on firm and household extortion payments draw from 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 experienced 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.[79] 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.[80] 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.[81] First, we would not have been able to ask questions about extortion in in-person interviews because that would have posed a significant risk to the safety of the enumerators.

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[78]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.

[79]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).

[80]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.

[81]Before conducting the survey, we verified the respondent's address to ensure that the observations are correctly geocoded.

Second, the lockdown restrictions due to the COVID-19 pandemic made it very difficult to conduct in-person interviews.

S.3. *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 by 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 nongang neighborhoods have higher income, the costs of living outside of gang territory are also higher: in Table S.VII in the Supplementary Materials, we show that residents of nongang 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 nongang 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 (Immigration and Refugee Board of Canada, 2016; Internal Displacement Monitoring Centre, 2018;). 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 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 (Blitzer, 2017; Fredrick and Volpe, 2017; Vázquez Ruiz, 2019). 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. For this reason, 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 Appendix Subsection A.2, 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 13.7% of the gaps in Table I.

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TABLE S.I: Summary Statistics of the Variables Used in the Estimation

	Mean	SD	Obs.	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 motorcycle, 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 motorcycle, 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 ≥100 employees, 2019	0.169	0.375	2,071	2019 survey
Works in a firm with ≥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

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TABLE S.II

BOUNDARIES OF GANG TERRITORY FROM GEOGRAPHICAL BARRIERS,
WITHOUT EXCLUDING THE LARGEST CENSUS TRACTS

	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	-0.078** (0.036)	0.045** (0.016)	-0.054*** (0.015)	-0.073 (0.052)	0.008* (0.004)	-0.072 (0.055)
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	-0.011 (0.007)	-0.274** (0.106)	-0.184*** (0.060)	-0.031** (0.015)	-0.220** (0.091)	-0.959** (0.371)
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	-0.080** (0.035)	-0.248*** (0.062)	-0.178** (0.068)	-0.063** (0.028)	-0.104*** (0.035)	-0.168*** (0.042)
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. We additionally control for dummies for the four quartiles of the census tract size distribution. 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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE S.III

PLACEBO: EFFECTS OF MAJOR ROADS THAT DID NOT DEFINE THE BORDERS OF GANG TERRITORY, WITHOUT EXCLUDING THE LARGEST CENSUS TRACTS

	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	0.002 (0.127)	-0.042 (0.036)	0.034 (0.030)	0.124 (0.087)	-0.005 (0.016)	0.082 (0.091)
Mean of dep. var.	0.897	0.030	0.980	0.113	0.010	0.147
Observations	9,441	7,678	7,806	7,806	7,806	7,296
	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	0.029** (0.013)	0.022 (0.127)	-0.064 (0.096)	-0.012 (0.030)	0.035 (0.099)	0.191 (0.498)
Mean of dep. var.	0.028	0.321	0.591	0.941	0.249	2.729
Observations	7,175	7,343	7,370	7,410	7,344	7,806
	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	-0.009 (0.040)	0.032 (0.061)	0.026 (0.051)	0.043 (0.071)	0.029 (0.051)	0.019 (0.045)
Mean of dep. var.	0.896	0.355	0.141	0.935	0.355	0.399
Observations	25,509	24,817	24,817	7,678	7,044	24,817
	Demographic characteristics		Neighborhood characteristics			
	Female	Age	Urban territory	Road density	Elevation	Tree coverage
	(19)	(20)	(21)	(22)	(23)	(24)
Placebo treatment group	0.010 (0.017)	0.945 (1.898)	0.016 (0.051)	-9.439 (7.260)	-47.112 (48.435)	-0.030 (0.020)
Mean of dep. var.	0.545	31.25	0.938	19.48	688.7	0.0144
Observations	27,865	27,865	63	63	63	63

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. We additionally control for dummies for the four quartiles of the census tract size distribution. The unit of observation is a dwelling, household, individual, or census tract, 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 boundaries, separately for locations on each side of the placebo boundaries and on each side of the boundaries of gang territory. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the placebo boundaries (separately for each side of the boundaries).

TABLE S.IV

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*** (0.015)	0.026** (0.010)	-0.058** (0.023)	-0.076*** (0.019)	0.005*** (0.002)	-0.132*** (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** (0.007)	-0.225*** (0.044)	-0.145*** (0.033)	-0.024*** (0.006)	-0.179*** (0.037)	-0.734*** (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*** (0.006)	-0.151*** (0.029)	-0.120*** (0.028)	-0.036*** (0.012)	-0.094*** (0.019)	-0.098*** (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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE S.V

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 boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE S.VI

Excluding 10% of the Observations with the Highest Values of the 1st Principal Components from Nongang 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** (0.016)	0.023** (0.010)	-0.047** (0.022)	-0.031* (0.017)	0.005*** (0.002)	-0.064*** (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 (0.006)	-0.165*** (0.046)	-0.116*** (0.033)	-0.018*** (0.006)	-0.124*** (0.033)	-0.500*** (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*** (0.007)	-0.103*** (0.028)	-0.040* (0.022)	-0.032** (0.012)	-0.057*** (0.018)	-0.055*** (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 nongang 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 conservative 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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE S.VII

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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE S.VIII

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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE S.IX

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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

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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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE S.XI

EFFECT ON THE INDIVIDUAL CHARACTERISTICS, BY GENDER

Subsample:	Can read and write		Has a high school degree		Has a university degree		1st principal component	
	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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE S.XII

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 boundaries of gang territory, separately for locations on each side of the boundaries. 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 boundaries of gang territory (separately for each side of the boundaries).

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TABLE S.XIII

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 motorcycle
	(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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

TABLE S.XIV

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 motorcycle
	(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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).
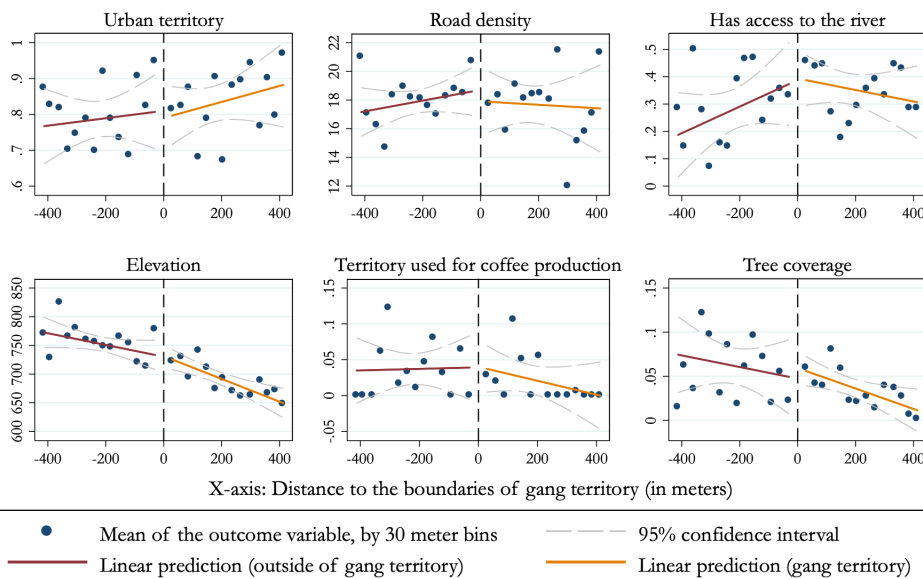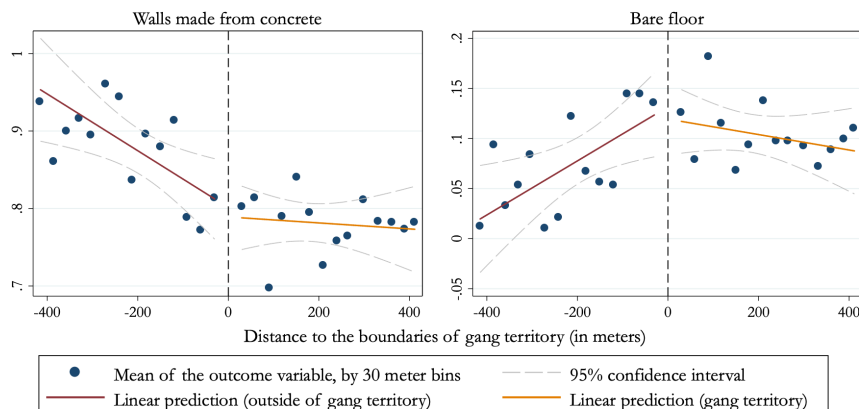
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TABLE S.XV
HOURS WORKED

	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 boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors in parentheses are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

FIGURES

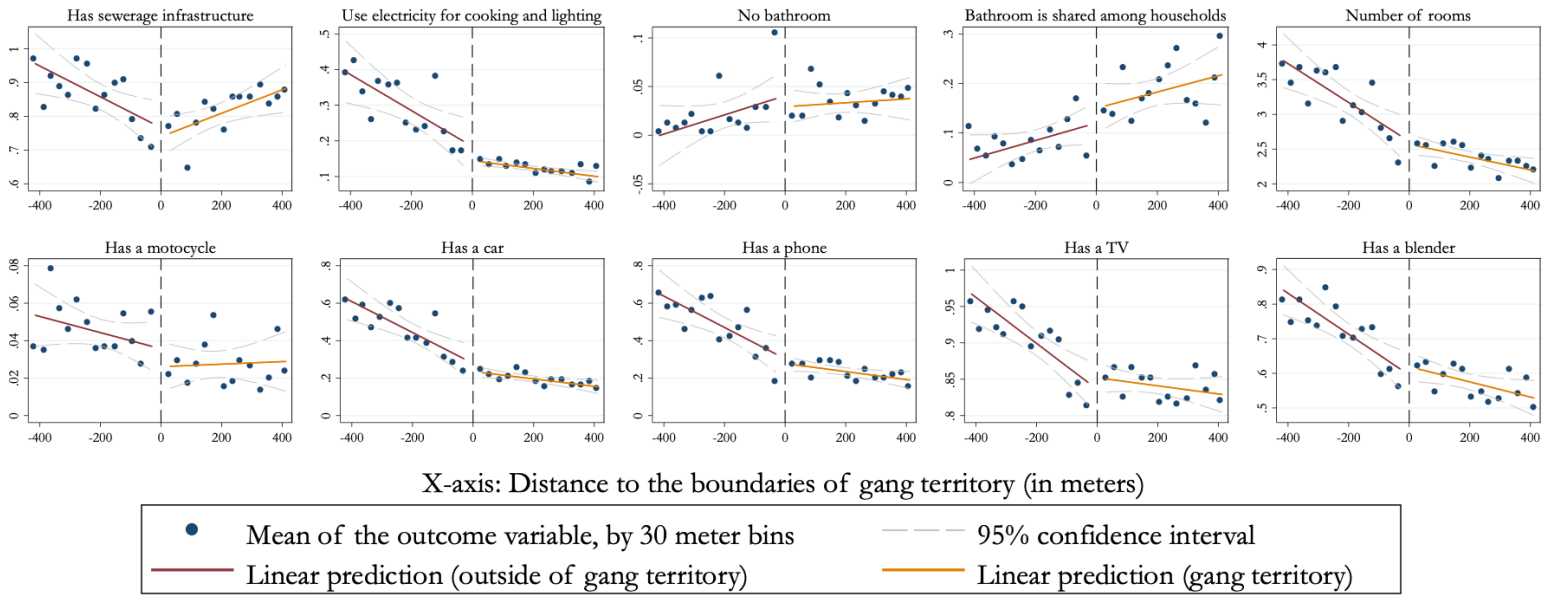FIGURE S.1.—Socioeconomic Conditions Before the Gangs' Arrival: Neighborhood Characteristics

X-axis: Distance to the boundaries of gang territory (in meters)

| ● Mean of the outcome variable, by 30 meter bins | 95% confidence interval |
| Linear prediction (outside of gang territory) | Linear prediction (gang territory) |

Note: The figure illustrates the results for the neighborhood characteristics from Table II. 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 boundaries 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 S.2.—Socioeconomic Conditions Before the Gangs' Arrival: Dwelling Characteristics

Distance to the boundaries of gang territory (in meters)

| ● Mean of the outcome variable, by 30 meter bins | 95% confidence interval |
| Linear prediction (outside of gang territory) | Linear prediction (gang territory) |

Note: The figure illustrates the results for the dwelling characteristics from Table II. All the variables come from the 1992 census. The unit of observation is a dwelling. The variables represent the share of dwellings that have the outcome variable (e.g., walls from concrete). The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundaries 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.

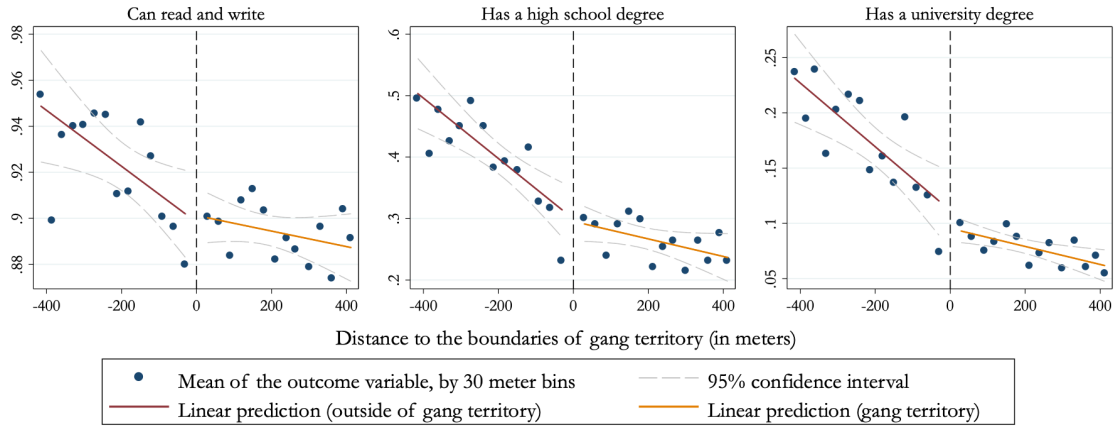FIGURE S.3.—Socioeconomic Conditions Before the Gangs' Arrival: Household Characteristics

X-axis: Distance to the boundaries of gang territory (in meters)

- Mean of the outcome variable, by 30 meter bins
- 95% confidence interval
- Linear prediction (outside of gang territory)
- Linear prediction (gang territory)

Note: The figure illustrates the results for the households characteristics from Table II. 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 boundaries 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 S.4.—Socioeconomic Conditions Before the Gangs' Arrival: Individual Characteristics

Note: The figure illustrates the results for the individual characteristics from Table II. 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 boundaries 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.
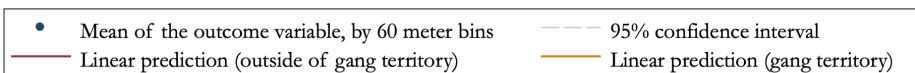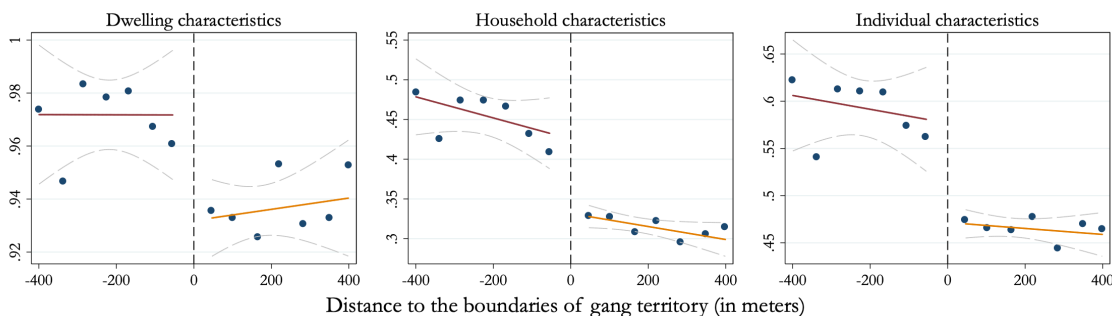
110

FIGURE S.5.—In-sample Migration Is Not Driving the Results: Education and Firm Size

Distance to the boundaries of gang territory (in meters)

● Mean of the outcome variable, by 30 meter bins
- - - 95% confidence interval
—— Linear prediction (outside of gang territory)
—— Linear prediction (gang territory)
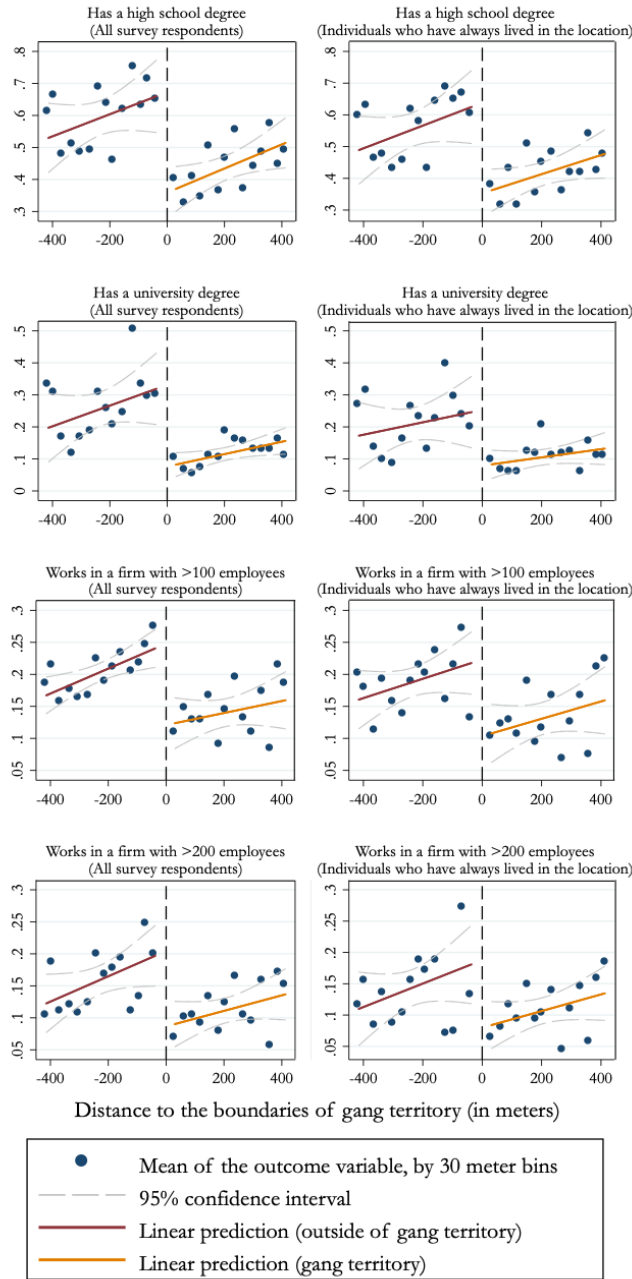
Note: The figure illustrates the results from Appendix Table A.I. The left-hand side of the figure presents the results for the full sample (Panel A of Appendix Table A.I), the right-hand side—for the subsample of individuals who have lived in the same location all their life (Panel B of Appendix Table A.I). The results are very similar. The vertical axis represents the average value of the outcome variable; the horizontal axis—distance (in meters) to the boundaries 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 S.6.—Alternative Bin Size

Panel A: 60-Meter Bins

1st principal component of the:

Distance to the boundaries of gang territory (in meters)

- Mean of the outcome variable, by 60 meter bins — 95% confidence interval
- Linear prediction (outside of gang territory) — Linear prediction (gang territory)

Panel B: 20-Meter Bins

1st principal component of the:
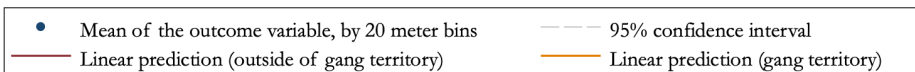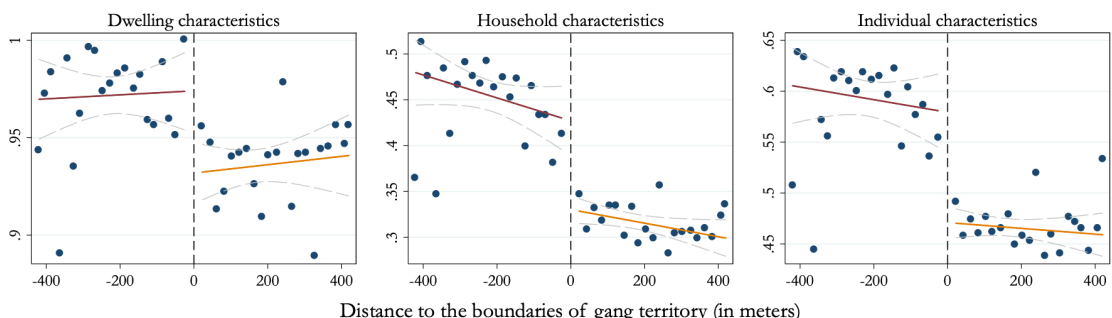
Distance to the boundaries of gang territory (in meters)

- Mean of the outcome variable, by 20 meter bins — 95% confidence interval
- Linear prediction (outside of gang territory) — Linear prediction (gang territory)
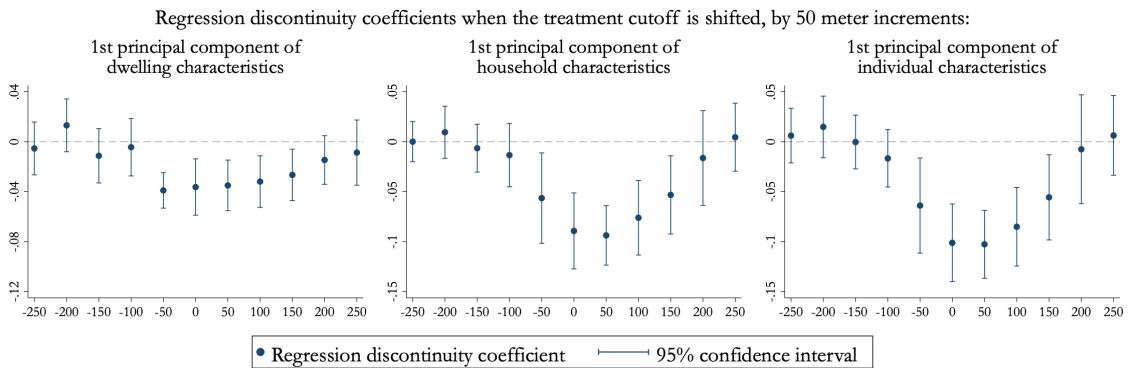
Note: The figure illustrates the regression discontinuity plots for the 1st principal components of the dwelling, household, and individual characteristics from the 2007 census, using a different bandwidth than in the baseline specification. In Panel A, the dots represent the average value of the outcome variable for 60 meter bins. In Panel B, 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 boundaries 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 S.7.—Housing Rent
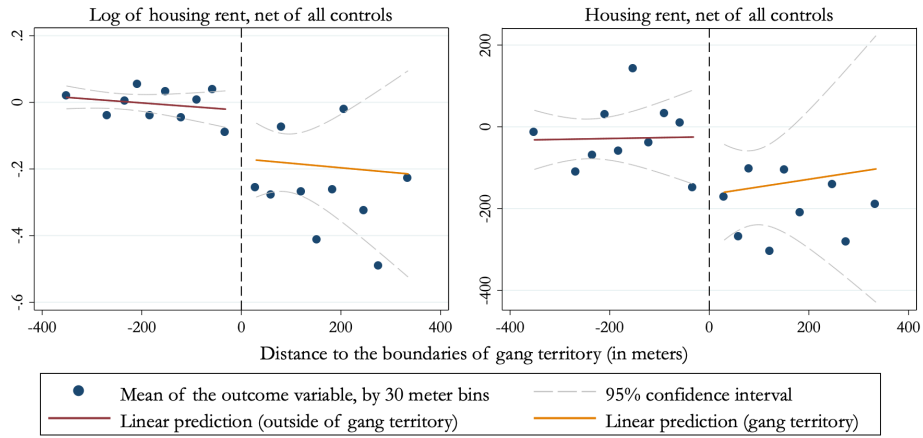
Note: The figure illustrates the regression discontinuity plots for the residual of housing rent and log housing rent after subtracting the effects of all the controls. The unit of observation is an apartment listing. The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundaries 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 boundaries of gang territory, separately for locations on each side of the boundaries.

FIGURE S.8.—Gang Border Permutations

Note: The figure presents the results of a permutation test, illustrating how the regression discontinuity estimates for the three main outcome variables change when the borders of gang territory are shifted in either direction. Each estimate comes from a separate regression specification. The x-axis characterizes the shift in the boundaries of gang territory (in meters). Omitted controls include a linear trend in distance to the boundaries of gang territory, separately for locations on each side of the boundaries. Standard errors are clustered by 30 meter bins, denoting the distance to the boundaries of gang territory (separately for each side of the boundaries).

FIGURE S.9.—Availability and Quality of Public Goods
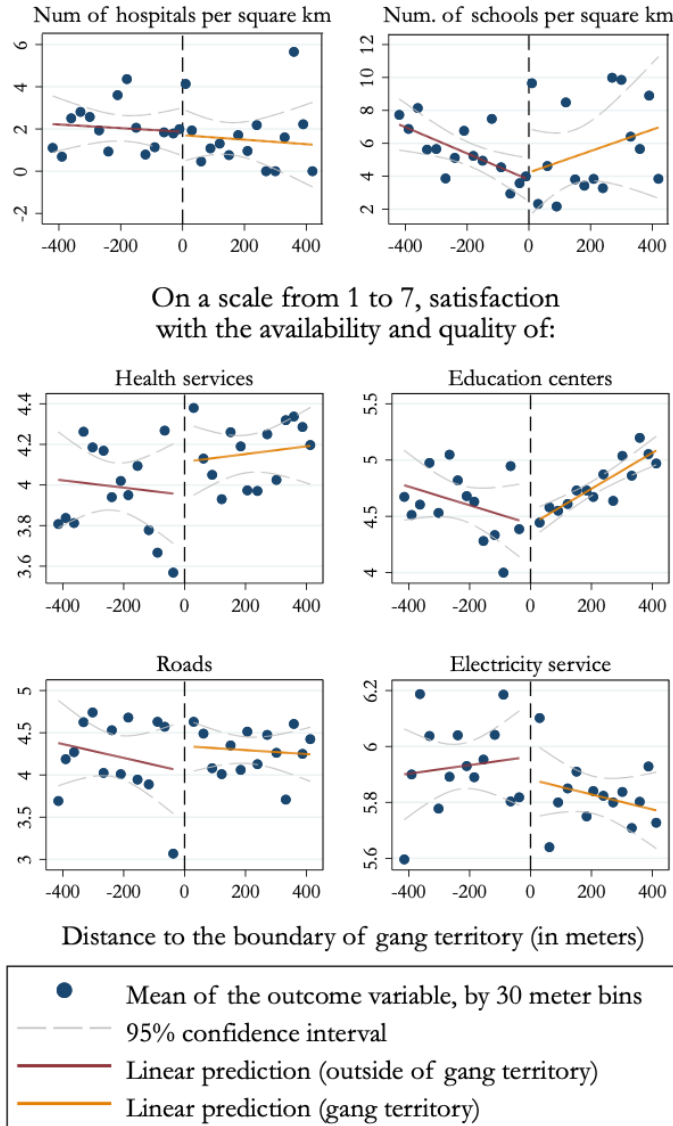
Note: The top part of the figure presents the regression discontinuity plots for the number of hospitals and schools per square kilometer; the lower part of the figure presents the regression discontinuity plots for the questions about satisfaction with the availability and quality of public goods from the 2019 survey. In the top part of the figure, the unit of observation is a 10 meter bin, denoting distance to the boundaries of gang territory. In the lower part of the figure, the unit of observation is an individual. For the questions about satisfaction with the availability and quality of public goods, the respondents were asked to rate the availability and quality of public goods on a scale from 1 (extremely unsatisfied) to 7 (extremely satisfied). The vertical axis represents the average value of the outcomes variable; the horizontal axis—distance (in meters) to the boundaries 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.