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# Crime as an excuse for not providing internet in specific neighbourhoods: a quantitative approach to broadband 'Red Zones' in Santiago de Chile

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## ABSTRACT

While internet connectivity is a key promise of progress and the rule of law, criminal contestation of state control over territory is considered one of the main obstacles for development. This article provides the first known quantitative approach to the link between urban lawlessness and internet provision. Taking the Santiago Metropolitan Region (SMR) – the capital of Chile – as a case study, the authors discuss the origins of Red Zones (areas where telecommunication companies do not provide fixed broadband). A first hypothesis is based on the corporate excuse given by telcos for Red Zones: criminal activities – and not just socioeconomic discrimination – are a force majeure that impede internet connectivity in specific neighbourhoods. An alternative hypothesis acknowledges criminal governance in Latin American cities, admitting the possibility of criminal redistribution being favourable to internet connectivity where state control is contested. Employing a random effects regression model with panel data from 52 boroughs during the 2012–2020 period, the two hypotheses are tested. Contestation of the territorial control by the state is significantly and positively correlated to fixed broadband connectivity in the SMA. In contrast, lower connectivity is linked to higher presence of poor households, favouring a profit-based explanation for the Red Zones. The results hold when replacing the percentage of contested territory per borough with the murder rates. This research contributes to heterodox views within institutional economics and highlights the need of state-led redistribution in order to retake control of contested territories.

## ARTICLE HISTORY



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## 1. Introduction

During the last twenty years, thanks to concepts such as e-commerce and the digital divide, internet connectivity has penetrated mainstream discourses about economic development in the Global South (Graham, 2008). During these two decades, the characteristics of internet supply have evolved from dial up networking to broadband, mobile

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internet and 5G (World Bank Group, 2016). Yet, after 2020, the COVID-19 pandemic dramatically increased the urgency of expanding household broadband connections, especially in relation to the requirements of online work and education during lockdowns (Azubuike et al., 2021; Ramsetty & Adams, 2020).

Internet connectivity became thus a fundamental promise of development. Yet, the road to development is a contentious one. During most of the twentieth century, a limited pool of development receipts was part of mainstream policy orientations, conditioned by the position adopted by each country in the midst of the Cold War (Goldman, 2015). However, since the 2000s, more diverse perspectives are available, as development economics has intensely debated the role that institutions have in leading countries to succeed or to fail (as famously put by Robinson & Acemoglu, 2012).

This article focuses on the relationship between institutions, and particularly the rule of law, and the provision of the internet as a fundamental component of development in cities of the Global South. Using the Santiago Metropolitan Region (SMR), the capital of Chile, as a case study, the article provides an empirical econometric approach to the factors associated with physical internet access. The research question is: what is the relationship between lawlessness, due to territorial control by criminal organisations, and physical internet access?

Since the 2010s, the internet 'Red Zones' [zonas rojas] have been a polemic issue regarding the Chilean internet markets. These zones are specific neighbourhoods, or smaller delimited polygons within them, in which any customer that requests an internet connection gets a 'no technical feasibility' answer from big telecommunication companies (Valenzuela-Levi, 2021, 2022). The aim of this article is, first, to empirically test the official 'corporate excuse' that is given by transnational telecommunication companies and public officials for not providing services in the Red Zones: lawlessness, public disorder, and local gangs, who steal cables and assault technicians, allegedly are a force majeure that keep providers from serving those communities. This excuse is aligned with the mainstream discourses on the link between institutions and development, in which an ideal type of Weberian state delivers the rule of law through an uncontested control of the whole territory. The enforcement of this rule of law diminishes transaction costs and therefore enhances economic development. The absence of this rule of law is, therefore, the cause of state failure, underdevelopment, and in this case, less internet access. In what follows, the article discusses the theoretical implications of this official explanation in full, and provides an empirical strategy to test it as a hypothesis.

However, a second aim is to consider an alternative view on the institutional nuances that can be present in territories such as the Latin American metropolitan areas, in which state territorial control is less ubiquitous than in the ideal mainstream Weberian vision. In these territories, criminal governance might produce a duopoly instead of a monopoly of the use of force. Considering the role that drug trafficking has on generating income among the poor (Rodgers, 2020) in the extremely unequal Latin American countries (Palma, 2011, 2014): how does a potential rise in ability to pay due to drug-related criminal activities interact with physical internet access? We thus admit a more heterodox approach to institutions, in order to consider the possible links between criminal governance and informal institutions in the telecommunications market. We consider both the possibilities of criminal redistribution influencing physical internet access, and of top-down informalities being masked by corporate excuses and government inaction.

## 2. Broadband internet and lawlessness in the Santiago Metropolitan Region

### 2.1. Inequalities in broadband access and the Red Zones

In Chile, 82.3 percent of the population uses the internet (The World Bank, 2022). However, the averages hide striking inequalities. According to recent data, by 2017, while 75 percent of the richest twenty percent of households had access to broadband, only 25 percent had it among the poorest quintile (Subsecretaría de Telecomunicaciones, 2017). Furthermore, according to a study by the Chilean Ministry of Education and the World Bank (Ministerio de Educación, 2020), 90 percent of children from the richest twenty percent of households had online classes during lockdown periods, while among the poorest group less than 30 percent had them.

Those excluded from digital connectivity are of course affected by many factors that are part of the three levels of the digital divide: access, skills and benefits (Van Deursen & Helsper, 2015). These factors are associated with gender, social class, age, education, territorial segregation, among others. However, a fundamental part of the gap has to do with network disadvantage (Valenzuela-Levi, 2021). As mentioned, one particular debate that has become prominent in the SMR centres on the ‘Red Zones’ of broadband internet – ‘Zonas Rojas’ in Spanish. These zones are specific areas of the city where users receive a ‘no technical feasibility’ answer when they request to hire the service (Valenzuela-Levi, 2021, 2022).

The causes and lawfulness of this corporate answer has generated a notable public debate. The main question is whether lawlessness due to criminal activity in specific neighbourhoods is a force majeure that does not allow companies to operate, or rather alleged presence of crime is being used as a corporate excuse for discriminating against less profitable communities. For instance, a notorious discussion happened in 2017 when the Undersecretary of Telecommunications – the head of the office in charge of regulating telecommunications – published a column claiming that, given that telcos operate on the legal basis of a public concession by the state, setting Red Zones motivated by lower profitability of some neighbourhoods would be illegal. He then established that, given that commercially-motivated redlining is illegal, Red Zones of such nature cannot and therefore do not exist. He closes by writing: ‘here is no such thing as saying that poor commercial appeal can be disguised as crime, ghetto or recurring vandalism. Nor zones of any colour’ (translated from Ramírez, 2017, p. 1).

This notable statement by the undersecretary in office motivated an even more notable written response from his immediate predecessor, part of the same government coalition. He starts: ‘With some surprise and astonishment, I read an opinion column by the current Undersecretary of Telecommunications, where he stated, and I quote: there are no ‘Red Zones’ in telecommunications!’ (Huichalaf, 2017, p. 1). He later continues mentioning marginalised neighbourhoods in the SMR and in rural areas all across the country as examples of the actual existence of Red Zones, and adds: ‘therefore, I would invite Rodrigo [the given name of the then current undersecretary] to step outside his office and tour these [marginalised] and rural areas, as I personally did many times. It is the duty of the regulator not only to ignore realities but to act to solve them through public policies aimed at improving the quality of life of Chileans through telecommunications’ (translated from Huichalaf, 2017, p. 1).

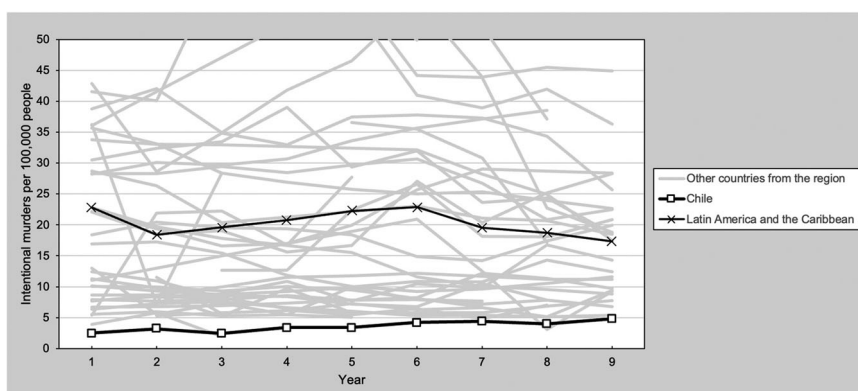
As this exchange shows, the Red Zones are perceived as a critical issue in terms of inequality and the digital divide, and the approach by those in charge of regulating the market illustrates the tensions between ideal formal institutions and informal ones that seem to be present in the daily life of the Chilean people in general, and the Santiaguineans in particular. The same tensions between ideal and real rule-systems have been found in qualitative studies interviewing authorities, managers and workers from companies, and community leaders (Valenzuela-Levi, 2021, 2022).

This is the context in which the Red Zones emerge as a relevant economic, social and political phenomenon. No specific studies have been produced about the link between territorial lawlessness, understood as criminal contestation of the territorial presence of the state, and internet access – neither in Santiago nor any other city. By using new data and confronting these socially relevant phenomena, the authors expect to contribute both to the debates around the specific case of Santiago, and to the broader issue of institutions, development, internet access, and contestation of the monopoly of legitimate violence by the state in cities of the Global South.

## 2.2. Crime and lawlessness in neighbourhoods of Santiago

Chile was the country with the lowest murder rates in Latin America and the Caribbean during the 2012–2020 period (United Nations, 2022a). However, as shown in Figure 1, behind this advantaged position regarding crime control in the region, lies a process of growth in violence and contestation of state control. Besides keeping its privileged place in the rankings, intentional murders per 100,000 people almost doubled in the same period. State authorities associate this phenomenon to a new role acquired by Chile in the international drug market (Fiscalía de Chile, 2022).

At least three elements are key in this new role. First, the porous Andinean triple-border between Chile, Perú and Bolivia is the entrance for cocaine and other drugs produced in neighbouring countries. The latter is accompanied by additional forms of trafficking that involve arms, humans, and can bring along industries of kidnapping, corruption, and other illegal activities (Troncoso Zúñiga, 2017). Second, the Chilean ports,



**Figure 1.** Intentional murder rates in Chile compared to Latin America and the Caribbean. Source: United Nations, 2022a.

intensively used for exporting commodities to Europe, the United States and China, are increasingly used as new ways to transport drugs to consumer markets (Fiscalía de Chile, 2022). Although the Chilean ports are not regarded as traditional hubs for drugs, after the COVID-19 pandemic Chile became the third country from which Europe receives the most containers carrying cocaine (Sampó & Troncoso, 2022). During 2021, examples of notable cocaine seizures in Chilean ports were 3,499 kilos in San Vicente with destination Rotterdam, 1,057 kilos in San Antonio with destination Amsterdam plus 800 kilos for London, and 541 kilos in Valparaíso destined to Valencia (Fiscalía de Chile, 2022). Third, a growing city like Santiago, with its 7 million inhabitants, has become an increasingly interesting consumer market by itself, in a context in which Chile ranked 14 out of 101 registered countries in terms of average prevalence of cocaine consumption among adults in the 2002–2020 period (United Nations, 2022c).

Beyond these geoeconomic conditions, four phenomena have generated a particular context in which contestation of the rule of law by illegal actors has found new opportunities in Chile. These phenomena have all accelerated between 2017 and 2020.

The first was the humanitarian crisis in Venezuela (Torres & Castro, 2019), which speeded up the Venezuelan exodus in 2017, and by 2022 involved more than 7 million migrants, most of which arrived to other Latin American countries, including Chile (United Nations, 2022b). The migratory pressure was particularly felt in the Andinean triple-border and the capital Santiago, generating new demands for smuggling services and strengthened transnational crime networks (Troncoso Zúñiga, 2017).

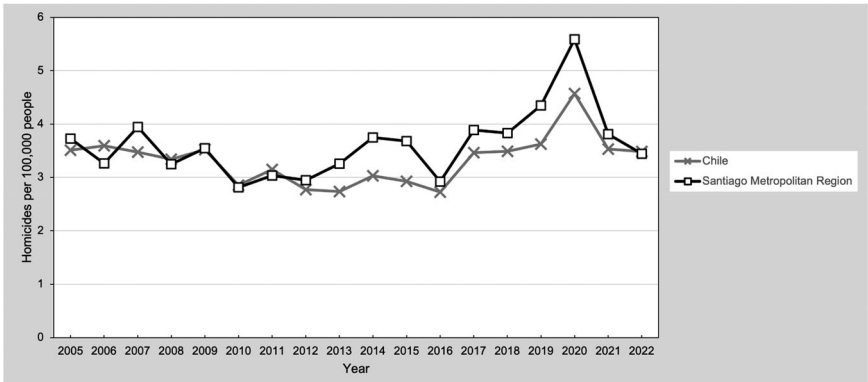
The second was a series of corruption and human rights scandals in the Chilean military police force – the main law enforcement body –, which started in 2017 and led to widespread delegitimization of their command, presence and methods (Tagle Montt et al., 2021; Viollier Bonvin & Ortega Romo, 2019).

The third was the so called ‘Social Outburst’ that broke in during October 2019 in Chile, which involved unprecedented levels of protest, civil unrest and state violence, unseen since the end of the Dictatorship led by Augusto Pinochet between 1973 and 1990 (Somma et al., 2021). Being already delegitimized immediately before the outburst, the Chilean military police experienced an enormous demand for personnel deployment, destruction of equipment, and was accused of reiterated human rights violations (Human Rights Watch, 2019).

Finally, during March 2020 the first SARS-CoV-2 significant cases started to spread and by June that year Chile had one of the worst infection rates in the world (Pablos-Méndez et al., 2020), which led to one of the longest and most stringent lockdowns in the Americas (University of Oxford, 2023).

In this context, authorities claim that organised crime in Chile has increased its level of organisation and violence. For instance, in 2021 the office of the national attorney interpreted a decrease in murder inside prisons as a sign of the presence of criminal gangs asserting control over local disputes, which are resolved in terms of external territorial control instead of incidents between inmates (Fiscalía de Chile, 2022).

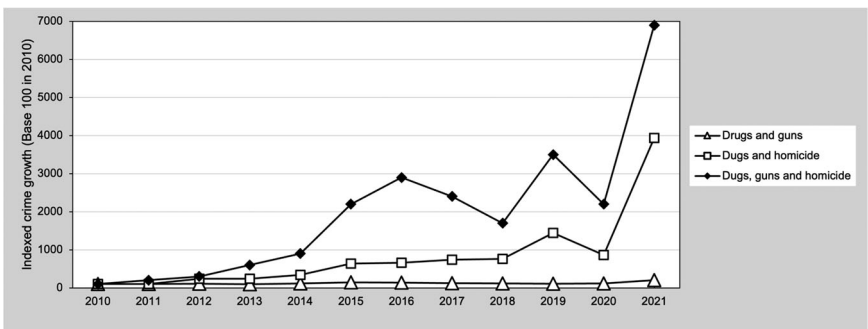
At the same time, as illustrated in [Figure 2](#), outside prisons the national murder rate peaked in 2020 (Ministerio del Interior, 2022). The arrival of transnational criminal organisations associated with the global drug trade came in tandem with an increase of the drug-related crimes that involve guns and murder, as illustrated in [Figure 3](#) percent. The growth in the latter is dramatic partly due to the small base for comparison: they



**Figure 2.** Murder rates in Chile and the Santiago Metropolitan Region. Source: Ministerio del Interior (2022).

were marginal before 2015. Between 2012 and 2021 incidents involving guns grew from 2.3 to 7.2 percent of drug-related crimes, while those involving homicides grew from 0.05 to 0.79 percent. Although this drug-related violence is far from out of control in Chile, it implies a new phenomenon that impacts the whole society, and is most hardly felt in specific territories.

For example, perception of increased crime in Chile was noted by the LAPOP (2022) survey for Latin America and the Caribbean. In the 2010–2014 period, while victimisation percentages fluctuated between 18 and 20 in the region, they moved between 11.9 and 16.7 percent in Chile, below the regional average. Yet, later, in the 2016–2021 period, while victimisation percentages fluctuated between 21 and 24 in the region, this measure increased to numbers between 22.4 and 24 in Chile, above the regional average. Although the scope of criminal territorial control is difficult to quantify, authorities, scholars and a pool of indicators point towards a strong impact of new forms of crime in a group of territories. The most affected regions are the two located in the Northern extreme of the country – Arica and Tarapacá –, where the three-part Andean border between Chile, Bolivia and Perú is located (Troncoso Zúñiga, 2017), and the Santiago Metropolitan Region (SMR). The latter, as Chile’s capital and most populated city – which concentrates two fifths of the country’s inhabitants – has also shown signs of growth in crime

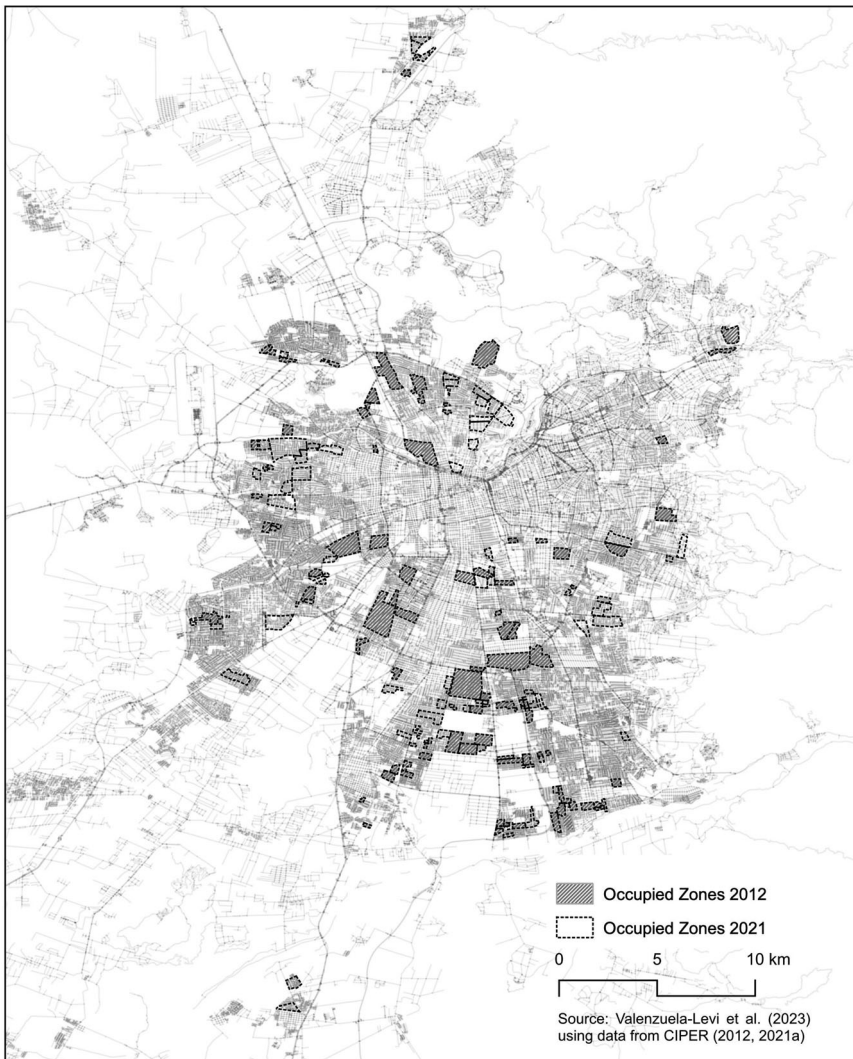


**Figure 3.** Growth of guns and murder in drug-related crimes. Source: Fiscalía de Chile, 2022.



victimisation and violence (Instituto Nacional de Estadísticas, 2017; Ministerio del Interior, 2022).

For many years, scholars and policymakers have acknowledged the problem of social segregation and ghettoisation of poor neighbourhoods in the SMR (Ruiz-Tagle & López, 2014; Sabatini & Brain, 2008). Interventions and studies have focused more on the perception of crime and insecurity (Méndez Layera et al., 2020) rather than more recent critical phenomena such as the growth in murder rates. Moreover, since the early 2000s, the issue of territorial control has been tackled with neighbourhood intervention programmes that focused on situational control of public spaces and community engagement (Luneke et al., 2022). However, as illustrated in Figure 4, the period between 2012 and 2020 not only saw an increase in the murder rate at the national level, but implied a



**Figure 4.** Map of the Santiago Metropolitan Region showing contested zones identified for years 2012 and 2021.



stronger growth in the SMR, with a peak in the harshest moment of the COVID-19 pandemic in 2020.

The peak in murders in Chile and the SMR occurred in a moment of crisis of the cocaine trade due to the fall in demand during the pandemic. Such a notable phenomenon like the rise in murders is not strange, considering the pressure that adapting to lockdowns implied for different links in the global cocaine value chain (Barnes & Albaracín, 2020). As it has been explained by Chilean authorities (Fiscalía de Chile, 2022) and scholars (Berg & Carranza, 2018; Blume, 2021; Heuser, 2019; Ingram & da Costa, 2019; Lessing, 2021), the presence of the drug trafficking logistics network brings along the need of ensuring control over specific territories that allow traffickers to secure operations. The arrival of a new criminal organisation usually involves taking control over other preexisting criminal activities, securing fidelity of the community, and setting the limits of state intervention (see Section 3.2).

The impact of these overarching processes of arrival and settlement of new forms of organised crime in the SMR has been strongly felt in a significant number of its neighbourhoods. A national poll generated periodically by the National Institute of Statistics asked, in its 2021 version, whether people witnessed drug trade in their neighbourhood (Instituto Nacional de Estadísticas, 2017). The national response was 21% 'yes', while the SMR was at the top of the positive responses among regions, with 30.2%. The subjective and specific experience of a number of these neighbourhoods has been studied by different scholars and investigative journalists, who highlight the hardships of the daily life of communities in the middle of violence that comes from both criminal organisations and the state (Dammert & Malone, 2003; Olavarria-Gambi & Allende-González, 2014; Méndez Layera et al., 2020; Lunecke, 2016, 2021; Luneke et al., 2022; CIPER, 2012, CIPER and CIP Universidad Diego Portales, 2021a, 2021b).

However, although qualitative case-studies from the SMR confirm many of the features that are present in the territorial expression of criminal governance in other Latin American cities (Berg & Carranza, 2018; Blume, 2021; Heuser, 2019; Ingram & da Costa, 2019; Lessing, 2021), the quantitative territorial scope of state-criminal territorial disputes is less clear. One of the few consistent works attempting to quantify the process of territorial settlement of criminal organisations in the SMR came from investigative journalism, and specifically from multidisciplinary teams of data journalists in the Centre for Investigative Journalism [Centro de Investigación Periodística] (CIPER, 2012, CIPER and CIP Universidad Diego Portales, 2021a). As explained in detail throughout Section 4, these data journalists have been monitoring police records and provision of public and private services in different moments of a 15-year period in the SMR, in order to generate maps of 'lawlessness' areas. These maps are the basis for the empirical analysis discussed in the following sections.

### 3. Theory and hypotheses

#### 3.1. *The corporate excuse: lawlessness as force majeure*

A surge in institutional economics literature since the 1990s has renewed old debates about power, rule-systems and the economy (Chang, 2002). A particularly relevant voice in this period was North (1992), who brought institutions into the central stage

of the debates about economic development. For North, economic growth is linked to the quality of institutions via transaction costs. Institutions can impede or facilitate transactions. In this view, what is desirable for economic development is for information, decisions, products, and services to circulate as fast as possible. Institutions, understood as different types of rules that shape markets, are crucial in the definition of these transaction costs that are paid both by each individual economic actor, and by the whole society.

A similar view has been advanced more recently by the seminal work of Acemoglu et al. (2001) and Robinson and Acemoglu (2012). These authors have famously claimed to find econometric evidence that links the colonial origins of institutions in developing countries to their current economic performance. According to them, institutions in those countries where settlers established an extractivist mode of colonisation have evolved into rule-systems that hinder economic development, based on inequality and asymmetrical distribution of power. In contrast, those countries where settlers had to establish forms to survive in more harmful environments, ended up having growth-enhancing institutions, which include higher protection of property rights, distribution of power and well-functioning markets.

All the above-mentioned authors share a prescriptive view of what are the 'right' institutions for development. Their emphasis is put on the set of institutions that are associated to western liberal democracies, and what 'rule of law' means in these contexts. This vision entails a Weberian understanding of the state as an ideal type (Heuser, 2019). These notions, although highly influential, are not free of criticisms. Albouy (2012), for instance, strongly questioned the empirical assumptions behind the models presented in Acemoglu et al. (2001). Another criticism, exemplified by Bayly (2008), asks for a more nuanced view that gives indigenous institutions and cultures more relevance, claiming a higher degree of agency for pre-colonial peoples, and acknowledging the existence of hybrid institutions that emerge as a mixture between eastern and western rule-systems.

Another source of alternative views does not focus on the empirical claims by Acemoglu et al. (2001) and Robinson and Acemoglu (2012), but on the policies that such claims tend to favour. A strong criticism of prescribing 'western' liberalisation policies as a path for development can be found in Chang (2002b, 2008), and more recently in Mazzucato (2015, 2018). This critique claims that policies – mostly protectionism and an active role of the state – that yesterday were adopted by today's industrialised nations, seem to be prohibited, in the view of mainstream economics, for the current developing world. Similarly, institutions that supposedly promote development, such as the International Monetary Fund, have pushed for liberalisation and austerity policies that significantly harmed chances of sustained economic development in the Global South.

As part of the more 'heterodox' view on economics, Chang (2002, 2008) and Mazzucato (2015, 2018) share an emphasis on adoption of new technologies as part of industrialisation processes, as the basis for development. In this sense, as discussed by Graham (2008), internet adoption and digitalisation are part of today's development blueprint for the Global South. It would be difficult to approach the debate on development and technology adoption without touching the issue of internet access. However, although institutionalist views on industrialisation processes have acknowledged the issue of less 'ideal' state types (Heuser, 2019) in the global South (Khan, 1990, 2010),

thorough attention to the specific link between informal institutions and internet is still rare (Valenzuela-Levi, 2020).

Yet, it has been precisely the orthodox view on institutional economics, the one that has shaped economic policies in Latin America, and in Chile in particular. Since the 1980s, the idealist or Weberian view of the State has been dominant when approaching institutions in Latin America. Structural readjustment policies were implemented in the region as part of the Washington Consensus (Williamson, 2018), justified by neoclassical economic theories that considered most government interventions as a source of failure (Krueger, 1990). The policy approach that modelled today's telecommunication markets in the region was shaped by these theories, which promoted privatisation, deregulation, and globalisation (World Bank Group, 2016).

Consequently, Internet policy debates are strongly permeated by a 'one size fits all' approach, which assumes liberalisation and privatisation of telecommunication companies as the unique available blueprint (World Bank Group, 2016). In other words, internet markets are assumed as globalised, homogeneous, ubiquitous, and transparent everywhere. Although tackling local digital exclusion (Graham & Dittus, 2022) in the Global South would require a more heterodox approach to telecommunication markets, such approaches are rare (Valenzuela-Levi, 2020).

In this context, the corporate excuse of Red Zones being produced by neighbourhood-level lawlessness is entirely aligned with the orthodox economic theories. This alignment is based on a series of assumptions that inform a specific theoretical causal mechanism to explain the link between lawlessness and physical internet connectivity. First, transnational communication companies are, in the supply side, part of a global market ruled by the principles of free exchange, globalisation and transparency, thanks to privatisation, deregulation and the invisible hand of the market. Second and consequently, any exclusion of a neighbourhood from fixed internet supply is an exception due to the interruption of the rule of law, which is a responsibility by the state and, therefore, its presence would be a sign of State failure. In summary, lawlessness means state failure and a force majeure that justifies corporations not providing internet to a neighbourhood.

Therefore, the hypothesis 'A', to answer the research question, is that higher criminal contestation of the territorial presence of the state is associated with lower internet connectivity. To sustain this hypothesis, two empirical results should hold. First, the association between lawlessness and internet connectivity should be significant and negative. Second, the association between poverty and internet connectivity, after controlling for lawlessness, must be non-significant or negative. If these two results hold, the corporate excuse would prove to have an empirical basis, given that lower connectivity would be associated with lawlessness and not to lower commercial appeal due to low income.

### **3.2. Criminal redistribution: lawlessness and the Robin Hood effect**

Orthodox institutional economics has limitations for approaching internet access in Latin America. On the one hand, in contrast with homogeneous and universal notions of the 'right institutions' for development, local and informal institutions do play a crucial role regarding internet access (García Canclini, 2019; Valenzuela-Levi, 2020). On the other hand, the Weberian approach to the state, based on ideal types, has been unable to provide sufficient tools for understanding contested territorial control in Latin America

(Berg & Carranza, 2018; Blume, 2021; Heuser, 2019; Ingram & da Costa, 2019; Lessing, 2021).

At odds with the idealist views on the State and the monopoly on the use of violence, uncontrolled violence is generally seen as a structural problem in Latin America, particularly in urban areas. In the region, urbanisation has as a consequence that millions of people live under some form of criminal governance (Lessing, 2021). The homicide rate in the region is three-times the global average (Blume, 2021; Ingram & da Costa, 2019) and, according to some studies, the annual cost of crime reaches 3.5 percent of the gross domestic product in the region (Jaitman, 2017). The usual developmental position on the issue of violence states that it ‘has harmful and costly effects on individuals and society, calling out for greater attention from scholars and policymakers’ (Ingram & da Costa, 2019, p. 1)

Taking distance from the notion that generalises contestation of state control and strong informal institutions as ‘failure’ (Krueger, 1990; Robinson & Acemoglu, 2012), recent scholarship provides a more nuanced lens. Two of these nuances have to do with small-scale variances in territorial control, and with types of relationships between the state and criminal actors. On the one hand, as shown in Berg and Carranza (2018) the experience of violence within cities varies at the neighbourhood scale. In other words, crime, lawlessness, and the contestation of territorial control are far from being homogeneous: they imply a geography of violence and statecraft within cities.

On the other hand, although violence in Latin America is usually associated with drug trafficking and illegal gangs, as Blume (2021, p. 1) puts it, ‘recent scholarship shows that levels of drug-related violence vary significantly depending on state-criminal relations. In this view, both the escalation, and many times the reduction, of violence not only depends on criminal actions but also on strategies and decisions taken by the state. This is a recognition of the nuances, ambiguities, and complementarities that the presence of the State can have in Latin American territories. An example of an ‘amphibious’ strategy in terms of formal strategies of the state is the Colombian case of Medellín, which mixes armed escalation, with truces, targeted integration of armed groups, all together with strong social investment (Cruz & Durán-Martínez, 2016; Maclean, 2015; Montoya-Restrepo, 2014). An example of the informal role of the state are police-criminal relationships in Brazil and the formation of an unwritten consensus of the legitimate limits of killing (Denyer-Willis, 2015).

These notions move away from the Weberian understanding of the state as an ideal type (Heuser, 2019), according to which the state is approached under the lens of the monopoly on the use of violence. Plus, it could be added, subregional geographies should also overcome the abstract homogeneity, or even absence of geography, in the idealist understanding of the rule of law. Following this conceptual path, Lessing (2021) highlights the notion of the ‘duopoly of violence’ in contrast with the classical monopoly of legitimate violence by the state. ‘States may actively contest criminal authority, but just as often they ignore, deny, or even collaborate with it. The results are distinctly non-Weberian: states and the criminal groups they are purportedly trying to eliminate form a ‘duopoly of violence’, one that can be competitive or collusive, turbulent, or stable’ (Lessing, 2021, p. 855). In summary, ‘just as criminal governance cannot be understood in isolation from the state, state governance can no longer be fully understood apart from criminal governance’ (Lessing, 2021, p. 856).

In order to approach the role that urban lawlessness can have on internet provision, it is fundamental to set the basic principles to understand how criminal governance acquires a territorial dimension. Following Barnes and Albarracín (2020), three forms of interrelated criminal governance can be distinguished: governance of communities, governance of illicit markets, and governance of criminal organisations themselves. The issue of access to the internet is related to the governance of communities, which, according to these authors, was exacerbated during the harshest moments of the COVID-19 pandemic. For instance, according to Barnes and Albarracín (2020), during 2020, criminal organisations increased their participation in the provision of basic goods and services or facilitated access to critical resources for the survival of communities in times of hardship. The objective of these actions had to do with reinforcing the legitimacy of criminal organisations in specific territories, or at least increasing the incentives for the allegiance of the community.

In other words, one possible factor that could, in fact, influence internet provision in areas controlled by criminal gangs is what Blume (2021) calls ‘Narco Robin Hoods’. This author explains this notion in this way: ‘marginalized communities where there is widespread corruption and limited state capacity are more inclined to be supportive of and form collaborative relationships with traffickers. I argue that traffickers who are native to the community, limit their use of violence in the community, and invest economically in the community are the most likely to win the community’s support or even become viewed as Robin Hood-esque figures’ (Blume, 2021, p. 1).

At least three causal mechanisms could lead one to formulate hypothesis ‘B’, according to which higher criminal contestation of the territorial presence of the state is associated with higher internet connectivity. These mechanisms are direct involvement in supply, indirect facilitation, and the trickle-down effect.

Direct involvement in supply would not necessarily mean providing the internet service itself but could also mean subsidising it among the neighbours. Lessing (2021) has thoroughly discussed criminal governance in Latin America, using examples such as Sao Paulo, Río de Janeiro and Medellín. Provision of goods and services is often shaped by a local order (Heuser, 2019) which is influenced by criminal organisations. ‘Legal markets may also fall under criminal organisation (CO) regulation, taxation, or even direct provision, especially for ‘universal’ goods like food staples and utilities. In Medellín, COs are increasingly involved in the distribution and sale of arepas (tortillas), eggs, dairy products, and even livestock: in 2018 police seized an arepa factory built by the sophisticated Los Triana CO. In Rio, police-linked milícias frequently operate forced monopolies on cooking gas and cable TV, and tax informal transportation’ (Lessing, 2021, p. 862). Furthermore, as stated by Heuser (2019), while there are accounts of drug traffickers engaging in forms of community service provision in many Latin American settings (Blume, 2021), limited academic attention has focused on ‘productive aspects of illicit economies’. The internet could be one of these services provided with the direct support of criminal organisations.

Another alternative could be that the ‘order’ enforced in a territory includes the guarantee of accessing some critical services such as the Internet. In this case, for instance, other criminal activities such as robbery and assault could be permitted in cases other than the telecommunication company’s technicians and infrastructure. Heuser (2019) provides the notion of ‘local order’ as ‘a frame that gives a predictability of clear rules

(formal or informal) in a given territory and that offers guarantees to meet economic needs and personal security. It is a combination of institutions and practices that structure social interactions, and organisation in a given region, which have formed in historical processes' (Heuser, 2019, p. 25). In some cases, 'illicit economies can contribute to the development of local order rather than destroying it' (Heuser, 2019, p. 23). This would be the case if internet services are not directly provided, but somehow protected by criminal organisations.

Finally, another mechanism to increase internet connectivity in contested territories, is the simple trickle-down effect by the profits from criminal activities. As Rodgers (2020) thoroughly documents through his longitudinal ethnographic study of a Nicaraguan narco-barrio, there are immediate economic impacts in neighbourhoods resulting from the transport, processing, distribution, storage, wholesale, and retail trade of narcotic drugs. At the same time, the rise in ability to pay is visible via different forms of conspicuous consumption. The role of drug-related illegal activities in income distribution has not been widely studied. Although there have been efforts to understand the links between income inequality and drug trafficking (see for instance Ríoss, 2010; Enamorado et al., 2016), and to model the size of illegal economic activities as compared to the national economy of Latin American countries (Villa et al., 2016), the global income inequality discussion is still waiting for innovative approaches to the distributional role of illegal economic activity. Summarising, the economic trickle-down effect of criminal activities, simply by means of producing higher ability to pay in an area, could increase broadband internet connections compared to other neighbourhoods.

In order to confirm hypothesis 'B', the association between lawlessness and internet connectivity should be significant and positive.

#### 4. Data and methods

In order to test the hypotheses, a Random Effects (RE) regression model is run on a panel dataset that covers the 52 boroughs of the SMR during the 2012–2020 period. The dependent variable is *total fixed broadband connections per hundred people*. The main two explicative variables are *percentage of total surface occupied criminal organisations*, and the *poverty rate*, in order to test whether hypotheses A or B are accepted. A series of variables are added in order to control for characteristics of each borough. These variables are expected to be linked to ability to pay in every borough: *commercial land value* (measured as commercial council tax revenue in thousand CLP per square Km) is associated to commercial activity that might foster non-residential fixed connections, autonomous *municipal budget per capita* is a proxy of the income level of the borough beyond the presence of poverty, *position within the city* that is an indicator of the distance from central areas where investment tends to concentrate – or where older investment implies sunk costs and previously existing infrastructure that facilitates new networks –, and finally both *population density* and *surface of the borough* account for possible economies of scale and density. Education level, which can be expected to influence internet access, is not included because it is not available at the borough level for every year. However, the inclusion of the poverty rate, land values and municipal budget should somehow capture the effect of education, since education and income are strongly



correlated in Chile and significantly segregated by borough in Santiago (Mizala & Torche, 2012; Ruiz-Tagle & López, 2014).

In order to validate the model, the same variables were included in a Fixed Effects (FE) and a Random Effects (RE) regressions - both on panel data - and an Ordinary Least Squares (OLS) regression - for the pooled data. A Hausman test for fixed versus random effects was used after estimation to ensure that the RE model is more efficient than the FE. A Breusch and Pagan Lagrangian multiplier test for random effects was also run after estimation in order to ensure that there are panel effects and therefore the RE model is better suited than the OLS one.

Data for this study comes from a number of secondary sources. First, data on total broadband connections per hundred people come from the Ministry of Transport and Telecommunications, who yearly updates data at the municipal level (Subsecretaría de Telecomunicaciones, 2022). Second, percentage of total surface occupied by criminal organisations was obtained from the above-mentioned research done by the Centre for Investigative Journalism, an independent institution based in Chile that generated a map of 'occupied zones' in 2012 and an update in 2021 (CIPER, 2012; CIPER and CIP Universidad Diego Portales, 2021a, 2021b).

In order to be included as a contested zone in the maps, the areas had to meet at least two of the following three criteria (CIPER and CIP Universidad Diego Portales, 2021b). First, to integrate the list of neighbourhoods of the SMR with the highest concentration of drug-related crimes, according to the reports of the Observatory of Drug Trafficking, of the Chilean Attorney Office (Fiscalía de Chile, 2016, 2022). Second, to be identified as 'high risk areas' by companies that provide basic services (drinking water and electricity), mail, delivery applications and emergency ambulances. Third, to be located more than a kilometre away from most of the basic equipment for an urban area (schools, health centres, supermarkets, transportation, police, firefighters & pharmacies).

The polygons from these maps, which are shown in [Figure 4](#), were used along with census data at the block level (Instituto Nacional de Estadísticas, 2017), in order to interpolate the percentage of the total population in a borough that was living under territorial contestation during the years between 2012 and 2020. Due to the lack of data in between 2012 and 2021, the interpolation assumes a linear trajectory between the two stages illustrated in [Figure 4](#). Although this way of computing the variable would miss peaks or non-linear jumps that could occur, it allows the model to clearly distinguish differences between areas of the SMR and the direction of specific trajectories of criminal contestation in each borough. However, in order to check the robustness of the measure, a complementary strategy was incorporated. The same model was tested replacing the above-mentioned variable with intentional murder rates per 100,000 inhabitants in each borough, which is a continuous variable that is available for all the years (Ministerio del Interior, 2022). Homicides are used instead of other crimes given that their account is much less dependent on victim's reporting and police bias.

Third and finally, the poverty rate, population density, total surface of the borough, municipal autonomous budget, and commercial tax revenue in thousand CLP per square kilometre were obtained or calculated from the National System of Municipal Information (Subsecretaría de Desarrollo Regional, 2022). In addition to these values, a value from 1 to 4 was assigned to different boroughs according to their position from

**Table 1.** Values according to position (centre to periphery).

Position	Borough
1	Providencia, Santiago
2	Lo Prado, Independencia, Pedro Aguirre Cerda, Cerrillos, San Ramón, San Miguel, Recoleta, Conchalí, Quinta Normal, Lo Espejo, San Joaquín, La Cisterna, Ñuñoa, La Granja, Estación Central, El Bosque, Macul.
3	Renca, Vitacura, Pudahuel, Huechuraba, Quilicura, Maipú, Cerro Navia, La Florida, Peñalolén, San Bernardo, Las Condes, Puente Alto, La Pintana, Lo Barnechea, La Reina.
4	Calera de Tango, Peñaflor, Talagante, Lampa, Buin, Padre Hurtado, Alhué, San José de Maipo, Paine, San Pedro, El Monte, Tiltil, María Pinto, Pirque, Colina, Curacaví, Isla de Maipo, Melipilla.

the centre to the periphery of the city, as detailed in [Table 1](#). Summary statistics for all the variables are provided in [Table 2](#).

## 5. Results and discussion

As shown in [Table 3](#), the model is able to explain 70 percent of the variance in fixed broadband connections per 100 people. In terms of results, while the percentage of total population living in contested zones is highly significantly and positively linked to internet connectivity, the poverty rate is also highly significant and negative. Whereas ten additional percentage points of the population in a borough living in contested zones is linked to 1.05 additional connections per 100 people, a ten percent higher poverty rate is associated with 1.89 less connections per 100 people. Post estimation test results favour the RE model over the FE and the OLS ones. Furthermore, the estimation results, which use the interpolated data of contested zones between 2012 and 2020, are robust to the change to another crime-related continuous variable such as homicides per 100,000 people, as shown in [Table 4](#).

The results lead to rejecting hypothesis A and accepting hypothesis B. In other words, the quantitative data does not verify the corporate excuse, but rather support the criminal redistribution proposition. Moreover, the results regarding the poverty rate signal that, while there is no evidence of lawlessness generating the Red Zones, the presence of the poor are more likely to explain their location among boroughs. The idea of corporate redlining of less profitable communities – as denied by the Undersecretary of Communications (Ramírez, 2017) but claimed by other actors (Huichalaf, 2017; Valenzuela-Levi, 2021, 2022) – is not only possible but probable. In turn, the force majeure argument for not providing broadband internet can not be sustained, and must be questioned, by this data.

**Table 2.** Summary statistics.

Variable	N	Mean	SD	Min	Max
Fixed broadband connections per 100 people	467	16.155	10.684	0.017	74.714
Percentage of total population living in contested zones (%)	468	11.643	13.857	0.000	56.776
Homicides per 100,000 people	468	3.772	3.439	0.000	20.598
Poverty rate (%)	468	8.630	5.083	0.030	27.700
Commercial Land Value (Commercial Tax Revenue in thousand CLP per square Km)	467	155,462.745	239,088.966	30.084	1,210,074.250
Municipal Autonomous Budget (Autonomous permanent revenue in thousand CLP per capita)	467	112.380	117.218	9.140	616.770
Position in relation to the centre (central = 1)	468	2.942	0.908	1.000	4.000
Population density (Population per square kilometre)	468	5,599.926	5,479.185	2.890	22,870.320
Log of surface in square kilometres	468	4.156	1.728	1.946	8.517

**Table 3.** Regression results.

Dependent variable: Fixed broadband connections per 100 people	(1)		(2)		(3)	
	OLS		FE		RE	
Percentage of total population living in contested zones (%)	-0.110***	(0.022)	0.201***	(0.032)	0.105***	(0.028)
Poverty rate (%)	-0.417***	(0.055)	-0.157***	(0.030)	-0.189***	(0.031)
Commercial Land Value (Commercial Tax Revenue in thousand CLP per square Km)	0.000***	(0.000)	-0.000	(0.000)	0.000	(0.000)
Municipal Autonomous Budget (Autonomous permanent revenue in thousand CLP per capita)	0.019***	(0.003)	0.0331***	(0.004)	0.0300***	(0.004)
Position in relation to the centre (reference = central = 1)						
Position in relation to the centre =2	-13.02***	(2.175)			-22.25***	(3.867)
Position in relation to the centre =3	-15.71***	(2.517)			-27.77***	(4.053)
Position in relation to the centre =4	-25.22***	(2.936)			-35.55***	(4.547)
Population density (Population per square kilometre)	-0.001***	(0.000)	-0.00107***	(0.000)	-0.00112***	(0.000)
Log of surface in square kilometres	-1.632***	(0.288)			-2.351***	(0.674)
Constant	45.27***	(3.381)	17.94***	(0.961)	56.51***	(4.453)
Observations	466		466		466	
R <sup>2</sup>	0.780					
Adj. R <sup>2</sup>	0.776					
R <sup>2</sup> within			0.513		0.502	
R <sup>2</sup> overall			0.000		0.700	
R <sup>2</sup> between			0.008		0.720	

Standard errors in parentheses.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .**Table 4.** Regression Results introducing homicides per 100,000 people.

Dependent variable: Fixed broadband connections per 100 people	(4)		(5)		(6)	
	OLS		FE		RE	
Homicides per 100,000 people	-0.228***	(0.076)	0.154***	(0.042)	0.130***	(0.043)
Poverty rate (%)	-0.460***	(0.055)	-0.180***	(0.030)	-0.196***	(0.031)
Commercial Land Value (Commercial Tax Revenue in thousand CLP per square Km)	0.000***	(0.000)	0.000	(0.000)	0.000	(0.000)
Municipal Autonomous Budget (Autonomous permanent revenue in thousand CLP per capita)	0.017***	(0.003)	0.034***	(0.004)	0.030***	(0.004)
Position in relation to the centre (reference = central = 1)						
Position in relation to the centre =2	-14.29***	(2.187)			-18.82***	(3.647)
Position in relation to the centre =3	-16.85***	(2.540)			-24.49***	(3.848)
Position in relation to the centre =4	-25.12***	(2.988)			-33.35***	(4.405)
Population density (Population per squared kilometre)	-0.001***	(0.000)	-0.001***	(0.000)	-0.001***	(0.000)
Log of surface in square kilometres	-1.561***	(0.293)			-2.484***	(0.653)
Constant	45.75***	(3.433)	19.70***	(0.925)	54.92***	(4.360)
Observations	466		466		466	
R <sup>2</sup>	0.773					
Adj. R <sup>2</sup>	0.768					
R <sup>2</sup> within			0.483		0.481	
R <sup>2</sup> overall			0.008		0.731	
R <sup>2</sup> between			0.001		0.755	

Standard errors in parentheses.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

In theoretical terms, these are relevant empirical results to sustain the need to go beyond orthodox economics and idealist views of the rule of law. Orthodoxy would expect contestation of the territorial control by the state to be linked to underprovision of a crucial service such as internet connectivity. What is found in the SMR is all the contrary. Following previous qualitative studies (Valenzuela-Levi, 2021, 2022), this research provides quantitative evidence of the Red Zones being structural, and not an exception, in the rule-systems of the Chilean telecommunications market. However, there is no evidence for sustaining these Red Zones as generated by lawlessness, via a bottom-up illegal institution. The evidence here supports, all the contrary, the notion of top-down institutions as originated in non-written rules, enforced actively by corporations and passively by public regulators. The top-down institution of the Red Zones eliminate non-profitable – or non-profitable-enough – customers from service provision.

In terms of public policy, these results can be useful both for the public efforts to confront the digital divide, and also to face criminal control over neighbourhoods. On the one hand, recognising the Red Zones as an issue of profitability instead of the force majeure produced by crime, leads to a specific pool of policy options. As discussed elsewhere (Valenzuela-Levi, 2021, 2022), one alternative preferred by corporations is a demand-subsidy, similar to what is done in Chile regarding some public utilities (Gómez-Lobo & Contreras, 2003). Another alternative would be to somehow subsidise supply via public provision, or supporting local internet providers that already exist in the Red Zones thanks to the absence of the big corporations (Valenzuela-Levi, 2021, 2022).

On the other hand, broadband Internet should be seen as an example of criminal redistribution, which also involves income and other goods and services. The attempts to regain territorial control by the state in the SMR should not only include an approach based on the use of violence, but also on state-led redistribution of income, goods and services. In a context of sharp social inequalities, criminal activities are being one of the few sources of economic opportunity in some neighbourhoods. The state has to show the fulfilment of promises of higher quality of life for the people. ‘Amphibious’ state tactics can be articulated based on the examples known in other Latin American cities, such as Medellín (Cruz & Durán-Martínez, 2016; Maclean, 2015; Montoya-Restrepo, 2014). These tactics should include significant support for internet access, including all the dimensions of the digital divide (Van Deursen & Helsper, 2015).

## 6. Conclusions

Our research provided a quantitative approach to the relationship between territorial presence of criminal activities and access to broadband internet, which is novel in the scientific literature. To do so, we used panel regressions based on territorial data on the internet, criminal activities and characteristics of the boroughs of the SMR, the capital of Chile, during the 2012–2020 period. Theoretical contributions are generated both regarding the view of institutions and development, and the complexity of statecraft in Latin American countries.

The results disregard the corporate excuse for the Red Zones, which are areas where telecommunication corporations decide not to provide fixed broadband services. This

corporate excuse is based on arguing in favour of lawlessness as force majeure: it is allegedly not possible to provide services in specific neighbourhoods because criminal organisations contest the rule of law. Instead, the quantitative data shows that contested areas are linked to higher fixed broadband connectivity, while lower provision is associated with higher presence of the poor. The evidence points toward less profitable customers, and not criminal violence, as the origin of Red Zones.

Moreover, the results show fixed broadband internet connectivity to be positively associated with criminal activities. Internet connectivity is probably part of criminal redistribution of income, goods and services within a society with high levels of income inequality. Effective tactics to recover state control over urban territories in the SMA should, therefore, not only be based on confronting violence with violence, but also to produce legitimate and effective forms of redistribution.

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**References**

- Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review*, 91(5), 1369–1401. <https://doi.org/10.1257/aer.91.5.1369>
- Albouy, D. Y. (2012). The colonial origins of comparative development: an empirical investigation: comment. *American Economic Review*, 102(6), 3059–3076. <https://doi.org/10.1257/aer.102.6.3059>
- Azubiike, O. B., Adegboye, O., & Quadri, H. (2021). Who gets to learn in a pandemic? Exploring the digital divide in remote learning during the COVID-19 pandemic in Nigeria. *International Journal of Educational Research Open*, 2, 100022. <https://doi.org/10.1016/j.ijedro.2020.100022>
- Barnes, N., & Albarracín, J. (2020). Criminal governance in the time of COVID-19. *Urban Violence*. <https://urbanviolence.org/criminal-governance-in-the-time-of-covid-19/>.
- Bayly, C. A. (2008). Indigenous and colonial origins of comparative economic development: The case of colonial India and Africa. *Policy Research Working Paper No. 4474*. World Bank, Washington, DC. <https://doi.org/10.1596/1813-9450-4474>.
- Berg, L. A., & Carranza, M. (2018). Organized criminal violence and territorial control: Evidence from northern Honduras. *Journal of Peace Research*, 55(5), 566–581. <https://doi.org/10.1177/0022343317752796>
- Blume, L. R. (2021). Narco Robin Hoods: Community support for illicit economies and violence in rural Central America. *World Development*, 143, 105464. <https://doi.org/10.1016/j.worlddev.2021.105464>
- Chang, H. J. (2002). *Kicking away the ladder: development strategy in historical perspective*. Anthem Press.
- Chang, H. J. (2008). *Bad Samaritans: The guilty secrets of rich nations and the threat to global prosperity*. Random House.
- CIPER (Centro de Investigación Periodística). (2012). Zonas Ocupadas de Santiago. <https://www.ciperchile.cl/multimedia/zonas-ocupadas-de-santiago-2012/>.
- CIPER (Centro de Investigación Periodística) and CIP (Centro de Investigación y Proyectos Periodísticos) Universidad Diego Portales. (2021a). Zonas ocupadas II: un millón de santiaguinos vive en áreas catalogadas de alto riesgo y lejos de servicios básicos. <https://www.ciperchile.cl/2021/04/20/zonas-ocupadas-ii-un-millon-de-santiagounos-vive-en-areas-catalogadas-de-alto-riesgo-y-lejos-de-servicios-basicos/>.
- CIPER (Centro de Investigación Periodística) and CIP (Centro de Investigación y Proyectos Periodísticos) Universidad Diego Portales. (2021b). “Zonas ocupadas” se duplicaron en una década: territorios dominados por el narco en la Región Metropolitana pasaron de 80 a 174. <https://www.ciperchile.cl/2021/04/20/zonas-ocupadas-se-duplicaron-en-una-decada-territorios-dominados-por-el-narco-en-la-region-metropolitana-pasaron-de-80-a-174/>.
- Cruz, J. M., & Durán-Martínez, A. (2016). Hiding violence to deal with the state: Criminal pacts in El Salvador and Medellín. *Journal of Peace Research*, 53(2), 197–210. <https://doi.org/10.1177/0022343315626239>
- Dammert, L., & Malone, M. F. T. (2003). Fear of crime or fear of life? Public insecurities in Chile. *Bulletin of Latin American Research*, 22(1), 79–101. <https://doi.org/10.1111/1470-9856.00065>
- Denyer-Willis, G. (2015). *The killing consensus: police, organized crime, and the regulation of life and death in urban Brazil*. Univ of California Press.
- Enamorado, T., López-Calva, L. F., Rodríguez-Castelán, C., & Winkler, H. (2016). Income inequality and violent crime: Evidence from Mexico’s drug war. *Journal of Development Economics*, 120, 128–143. <https://doi.org/10.1016/j.jdeveco.2015.12.004>
- Fiscalía de Chile. (2016). Informe 2016 del Observatorio del Narcotráfico. [http://www.fiscaliadechile.cl/observatoriodrogaschile/informe\\_2016\\_online.html](http://www.fiscaliadechile.cl/observatoriodrogaschile/informe_2016_online.html).



- Fiscalía de Chile. (2022). Informe 2022 del Observatorio del Narcotráfico. [http://www.fiscaliadechile.cl/Fiscalia/quienes/Informe\\_2022\\_Observatorio\\_del\\_Narcotrafico.pdf](http://www.fiscaliadechile.cl/Fiscalia/quienes/Informe_2022_Observatorio_del_Narcotrafico.pdf).
- García Canclini, N. (2019). A culture of informality. *Urban Studies*, 56(3), 488–493. <https://doi.org/10.1177/0042098018782635>
- Goldman, M. (2015). Development and the city. In F. Mirafitab & N. Kudva (Eds.), *Cities of the global south reader* (pp. 54–65). Routledge.
- Gómez-Lobo, A., & Contreras, D. (2003). Water subsidy policies: A comparison of the Chilean and Colombian Schemes. *The World Bank Economic Review*, 17(3), 391–407. <https://doi.org/10.1093/wber/lhg028>
- Graham, M. (2008). Warped geographies of development: The Internet and theories of economic development. *Geography Compass*, 2(3), 771–789. <https://doi.org/10.1111/j.1749-8198.2008.00093.x>
- Graham, M., & Dittus, M. (2022). *Geographies of digital exclusion: Data and inequality*. Pluto Press.
- Heuser, C. (2019). The Effect of Illicit Economies in the Margins of the State-The VRAEM. *Journal of Illicit Economies and Development*, 1(1), 23–36. <https://doi.org/10.31389/jied.7>
- Huichalaf, P. (2017). ¿No existen las zonas rojas en telecomunicaciones?. <https://m.elmostrador.cl/noticias/opinion/2017/08/26/no-existen-las-zonas-rojas-en-telecomunicaciones/>.
- Human Rights Watch. (2019). Chile: Llamado urgente a una reforma policial tras las protestas. <https://www.hrw.org/es/news/2019/11/26/chile-llamado-urgente-una-reforma-policial-tras-las-protestas>.
- Ingram, M. C., & da Costa, M. M. (2019). Political geography of violence: Municipal politics and homicide in Brazil. *World Development*, 124, 104592. <https://doi.org/10.1016/j.worlddev.2019.06.016>
- Instituto Nacional de Estadísticas. (2017). Censo Nacional de Población y Vivienda.
- Jaitman, L. (2017). The Costs of Crime and Violence. *Inter-American Development Bank*. [https://publications.iadb.org/bitstream/handle/11319/4249/Ideas for Development in the Americas](https://publications.iadb.org/bitstream/handle/11319/4249/Ideas%20for%20Development%20in%20the%20Americas), 30.
- Krueger, A. O. (1990). Government failures in development. *Journal of Economic Perspectives*, 4(3), 9–23. <https://doi.org/10.1257/jep.4.3.9>
- LAPOP. (2022). The AmericasBarometer. [www.vanderbilt.edu/lapop](http://www.vanderbilt.edu/lapop).
- Lessing, B. (2021). Conceptualizing criminal governance. *Perspectives on Politics*, 19(3), 854–873. <https://doi.org/10.1017/S1537592720001243>
- Lunecke, A. (2016). Inseguridad ciudadana y diferenciación social en el nivel microbarrial: el caso del sector Santo Tomás, Santiago de Chile. *EURE (Santiago)*, 42(125), 109–129. <https://doi.org/10.4067/S0250-71612016000100005>
- Luneke, A. (2021). Inseguridad Urbana, participación ciudadana y cuidado vecinal: la búsqueda por protección en los barrios. *Revista INVI*, 36(102), 302–327. <https://doi.org/10.4067/S0718-83582021000200302>
- Luneke, A., Dammert, L., & Zuñiga, L. (2022). From social assistance to control in urban margins: Ambivalent police practices in neoliberal Chile. *Dilemas: Revista de Estudios de Conflicto e Controle Social*, 15(1), 1–26. <https://doi.org/10.4322/dilemas.v15n1.42944>
- Macleán, K. (2015). *Social urbanism and the politics of violence: the Medellín miracle*. Springer.
- Mazzucato, M. (2015). *Entrepreneurial state: Debunking public Vs. Private sector myths*. Anthem Press.
- Mazzucato, M. (2018). *The value of everything: Making and taking in the global economy*. Hachette UK.
- Méndez Layera, M. L., Otero, G., & Perret, V. (2020). Inseguridad Percibida en los Barrios de Santiago de Chile: La Importancia del Bienestar Subjetivo. *Dados*, 63.
- Ministerio de Educación. (2020). Impacto del COVID-19 en los Resultados de Aprendizaje y Escolaridad en Chile. [https://www.mineduc.cl/wp-content/uploads/sites/19/2020/08/EstudioMineduc\\_bancomundial.pdf](https://www.mineduc.cl/wp-content/uploads/sites/19/2020/08/EstudioMineduc_bancomundial.pdf).
- Ministerio del Interior. (2022). Estadísticas Delictuales Centro de Estudios y Análisis del Delito. Available at <https://cead.spd.gov.cl/estadisticas-delictuales/>

- Mizala, A., & Torche, F. (2012). Bringing the schools back in: the stratification of educational achievement in the Chilean voucher system. *International Journal of Educational Development*, 32(1), 132–144. <https://doi.org/10.1016/j.ijedudev.2010.09.004>
- Montoya-Restrepo, N. (2014). El Urbanismo Social: Las tácticas de un estado Anfíbio. *Bitácora Urbano Territorial*, 24(1), 159–164. <https://doi.org/10.1016/j.ijedudev.2010.09.004>
- North, D. C. (1992). *Transaction costs, institutions, and economic performance*. California: Ics Press.
- Olavarría-Gambi, M., & Allende-González, C. (2014). Crime in neighborhoods: Evidence from Santiago, Chile. *Crime Prevention and Community Safety*, 16(3), 205–226. <https://doi.org/10.1057/cpcs.2014.7>
- Pablos-Méndez, A., Vega, J., Aranguren, F. P., Tabish, H., & Raviglione, M. C. (2020). COVID-19 in Latin America. *Bmj*, 370. <https://doi.org/10.1136/bmj.m2939>
- Ramírez, R. (2017). ¿Qué es eso de ‘zonas rojas’?. <https://m.elmostrador.cl/noticias/opinion/2017/08/22/que-es-eso-de-zonas-rojas/>.
- Ramsetty, A., & Adams, C. (2020). Impact of the digital divide in the age of COVID-19. *Journal of the American Medical Informatics Association*, 27(7), 1147–1148. <https://doi.org/10.1093/jamia/ocaa078>
- Ríos, V. (2010). To be or not to be a drug trafficker: Modeling criminal occupational choices. *Unpublished working paper*. Department of Government, Harvard University. [www.gov.harvard.edu/files/Rios\\_MPSA2010\\_TobeOrNotToBe.Pdf](http://www.gov.harvard.edu/files/Rios_MPSA2010_TobeOrNotToBe.Pdf).
- Robinson, J. A., & Acemoglu, D. (2012). *Why nations fail: The origins of power, prosperity and poverty*. Profile, 45–47.
- Rodgers, D. (2020). Drug booms and busts: poverty and prosperity in a Nicaraguan narco-barrio. In M. Ghiabi (Ed.), *Power and illicit drugs in the global south* (pp. 69–84). Routledge.
- Ruiz-Tagle, J., & López, E. (2014). El estudio de la segregación residencial en Santiago de Chile: revisión crítica de algunos problemas metodológicos y conceptuales. *Eure. Revista Latinoamericana De Estudios Urbano Regionales*, 40(119), 25–48. <https://doi.org/10.4067/S0250-71612014000100002>
- Sabatini, F., & Brain, I. (2008). La segregación, los guetos y la integración social Urbana: Mitos y claves. *EURE (Santiago)*, 34(103), 5–26. <https://doi.org/10.4067/S0250-71612008000300001>
- Sampó, C., & Troncoso, V. (2022). Cocaine trafficking from non-traditional ports: examining the cases of Argentina, Chile and Uruguay. *Trends in Organized Crime*, 1–23. <https://doi.org/10.1007/s12117-021-09441-y>
- Somma, N. M., Bargsted, M., Disi Pavlic, R., & Medel, R. M. (2021). No water in the oasis: the Chilean Spring of 2019–2020. *Social Movement Studies*, 20(4), 495–502. <https://doi.org/10.1080/14742837.2020.1727737>
- Subsecretaría de Desarrollo Regional. (2022). Sistema Nacional de Información Municipal SINIM. [http://www.sinim.gov.cl/inicio\\_sesion.php](http://www.sinim.gov.cl/inicio_sesion.php).
- Subsecretaría de Telecomunicaciones. (2022). Estadísticas Sectoriales. <https://www.subtel.gob.cl/estudios-y-estadisticas/internet/>.
- Subsecretaría de Telecomunicaciones. (2017). Internet y Sociedad de la Información 2017 Novena Encuesta Acceso y Usos de Internet. <https://www.subtel.gob.cl/estudios/internet-y-sociedad-de-la-informacion/>.
- Tagle Montt, F. J., Guerrero Cortes, J. J., & Vial Cerda, M. P. (2021). The Frames of Television News and the Second Screen on Twitter and Facebook: Pacogate Scandal in Chile. *Gestión y Política Pública*, 30(3), 209–235. <https://doi.org/10.29265/gypp.v30i3.973>
- The World Bank. (2022). World development indicators.
- Torres, J. R., & Castro, J. S. (2019). Venezuela’s migration crisis: a growing health threat to the region requiring immediate attention. *Journal of Travel Medicine*, 26(2), tay141. <https://doi.org/10.1093/jtm/tay141>
- Troncoso Zúñiga, V. (2017). Narcotráfico y el desafío a la seguridad en la triple frontera andina. *Revista de Relaciones Internacionales, Estrategia y Seguridad*, 12(1), 103–130. <https://doi.org/10.18359/ries.2466>

- United Nations. (2002b). Situación en Venezuela. <https://www.acnur.org/situacion-en-venezuela.html>.
- United Nations. (2022a). Victims of intentional homicide. <https://dataunodc.un.org/dp-intentional-homicide-victims>.
- United Nations. (2022c). Prevalence of drug use in the general population, including NPS - national data. [https://www.unodc.org/unodc/en/data-and-analysis/wdr2022\\_annex.html](https://www.unodc.org/unodc/en/data-and-analysis/wdr2022_annex.html).
- University of Oxford. (2023). *Oxford COVID-19 government response tracker regional report - Latin America and Caribbean*. Blavatnik School of Government. [https://github.com/OxCGRT/covid-policy-scratchpad/blob/master/regional\\_reports/LatestLatinAmericaCaribbeanRegionalSummary.pdf](https://github.com/OxCGRT/covid-policy-scratchpad/blob/master/regional_reports/LatestLatinAmericaCaribbeanRegionalSummary.pdf).
- Valenzuela-Levi, N. (2021). The written and unwritten rules of internet exclusion: inequality, institutions and network disadvantage in cities of the Global South. *Information, Communication & Society*, 24(11), 1568–1585. <https://doi.org/10.1080/1369118X.2020.1716037>
- Valenzuela-Levi, N. (2022). ‘Somos zona roja’: top-down informality and institutionalised exclusion from broadband internet services in Santiago de Chile. In *The social and political life of Latin American infrastructures* (pp. 175–197). University of London Press.
- Van Deursen, A. J., & Helsper, E. J. (2015). The third-level digital divide: Who benefits most from being online? In *Communication and information technologies annual* (pp. 29–52). Emerald Group Publishing Limited.
- Villa, E., Misas, M. A., & Loayza, N. V. (2016). *Illicit activity and money laundering from an economic growth perspective: A model and an application to Colombia*. The World Bank. <https://doi.org/10.1596/1813-9450-7578>.
- Viollier Bonvin, P., & Ortega Romo, V. (2019). Cuando el Estado hackea: el caso de Operación Huracán. *Revista Chilena de Derecho y Tecnología*, 8(2), 83–110. <https://doi.org/10.5354/0719-2584.2019.54436>
- Williamson, J. (2018). What Washington means by policy reform. In J.A. Frieden (Ed.), *Modern political economy and Latin America* (pp. 18–23). Routledge.
- World Bank Group. (2016). *World development report 2016: Digital dividends*. World Bank Publications.