



# Towards a safer Latin America

A new perspective  
to prevent and control crime

**CAF** DEVELOPMENT BANK  
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# Towards a safer Latin America

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to prevent and control crime

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# PREFACE

Public safety is an important determinant of the welfare of families and communities. The blistering growth of crime and violence in many countries of Latin America in recent years has not only entailed high economic and social costs but also, by undermining trust among citizens and public authorities, compromised democratic governance and state legitimacy.

This year's Report on Economics and Development (RED) proposes an approach for the analysis of insecurity in which crime results from decisions made by individuals in a particular situation. While it is true that beliefs, perceptions, self-control, and other personality traits (in turn shaped by family experiences, education level, job opportunities, and other experiences throughout the life cycle) can tip an individual into crime, his physical and social environment, the incentives provided by illegal markets (e.g., drugs), and the credibility and efficiency of the criminal justice system are also important.

From this perspective, crime-fighting actions involve a wide range of dimensions: family, school, neighborhood, community, urban infrastructure, economic regulations, police, justice, and prisons. The available evidence (mostly for developed countries) shows that investing in the nutrition and early stimulation of children and promoting family environments with non-conflicting and proactive parenting have positive effects on people's crime propensity, decreasing the incidence of crime. The same goes for interventions at school and in the peer group during adolescence to reduce youth criminogenic exposure. Despite their importance, these are medium- and long-term investments. In the short term, interventions affecting the environment and the opportunities for committing crimes (such as, for example, improvements in public spaces, schedule limits on the sale of alcohol and targeted policing strategies, by type of crime or territory) could be very rewarding as well.

However, to plan, design, and implement these various interventions the available information has to improve. A basic first step is to obtain reliable measurements of the incidence of crime, both from administrative records and victimization surveys. Yet, despite the increased importance of crime and violence for public opinion in the region, there is still much to be done to achieve statistics with methodological rigor and adequate frequency that make it possible to assess the phenomena quantitatively.

Of course, reliable statistics are not enough. It is also important for public policy initiatives to be monitored and evaluated to learn about their quantitative and qualitative effects and understand the channels through which these effects play out. This learning is essential when it comes to phenomena with multiple determinants, regarding which the outcomes of any actions can be very specific to the context in which these actions are implemented.

Critically, the process of generating statistics and designing, implementing, and evaluating policies requires hefty government institutional capabilities. These capabilities do not appear in a vacuum, but are rather the result of political will to prioritize crime control, which, in turn, depends on citizens' disposition to, through advocacy and vote, demand just this from their representatives. And besides political will, it is necessary for public bureaucracies to be properly trained and have the right incentives and resources for action.

CAF's greatest hope is to make a contribution to the understanding of phenomena as complex as crime and violence, to spur a constructive debate, and to inspire policy initiatives that promote a safer Latin America, with greater development opportunities for all its citizens.

**L. Enrique García**  
CAF Executive President



# RECOGNITION

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# CITIZEN SECURITY AND WELFARE

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## Chapter 1



# Chapter 1

## CITIZEN SECURITY AND WELFARE<sup>1</sup>

### Introduction

Maya, five years old, tried for more than two hours to wake up her parents Monica Spear and Thomas Berry when, to her understanding, they fell asleep after the screams and bangs that followed the approach of some unknown men to the spot where their car had failed. A few days later, her grandparents explained it all. The former Miss Venezuela and her partner were traveling with their only daughter on a highway on the night of January 6, 2014 near the city of Valencia after touring Venezuela. The celebrity of the victim, coupled with the dramatic circumstances for the girl, made this story fill the domestic and foreign newspapers for weeks. The reality is that in the violent areas of Latin America, mainly in the poor zones of large cities, this kind of tragedy occurs creepily often, though in most cases without media coverage. The everyday life of Latin American citizens is marked by the latent threat of being the next victim.

Latin America faces a crisis of epidemic proportions regarding the protection and guarantee of fundamental human rights. The number of homicides per 100 thousand inhabitants has doubled in the past 10 to 15 years in countries like El Salvador (35 in 2001-2003 versus 69 in 2009-2011), Venezuela (20 in 1995-1997 versus 50 in 2009-2011) and Mexico (9 in 2001-2003 versus 18 in 2009-2011). There has also been a big increase in the homicide rate in countries with traditionally low levels of crime such as Costa Rica (where it moved from 5 to 11) or Panama (where it jumped from 10 to 21). Other countries with traditionally high levels of crime, such as Colombia and Brazil, have seen remarkable reductions in lethal violence (the homicide rate declined from 70 to 35 and from 30 to 21, respectively); however the latter is still very prevalent compared with that of developed countries (less than 3 homicides per 100 thousand) and other developing regions such as Southeast Asia (where the rate is 7).

Beyond the hard data, almost 30% of the public in the region think that insecurity is the main problem affecting their welfare, over unemployment, inflation or the provision of basic public goods such as health or education (Latinobarómetro, 2011); and 60% of the population of the major cities of Latin America think that insecurity has increased in the past five years (CAF 2013 survey).

Citizen insecurity often implies a violation of the right to life and always implies a restriction on the freedom of movement and association. Thus, insecurity has direct costs related to both the criminal act and the response of individuals to avoid being victimized. Moreover, crime, or a high perception of its incidence, has a negative impact on physical and human capital accumulation, jeopardizing

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1. This chapter was written by Daniel Ortega and Pablo Sanguinetti with research assistance from Carlos Catanho and Diego Jorrat.

long-term development. Finally, as many other problems, insecurity affects first and foremost the most disadvantaged, aggravating the already-critical development challenges of segregation and inequality. This undermines communities' social capital, fostering distrust among citizens and of citizens in their governments, which in turn weakens institutions and the capacity of (local and national) political systems to provide decision-making mechanisms to address development problems.

The region's high levels of insecurity and violence are, then, among the most important obstacles to development. How to reflect upon the multiple factors that determine these high levels of insecurity? How to define a course of action to improve safety conditions in each context in a sustainable way, bringing to the discussion the best evidence on the effects of different interventions?

The center of the entire analysis should be the criminal event, which consists of a person and a situation. The person has a propensity to commit crimes and/or to become exposed to more or less risky situations. The situation is the set of stimuli, incentives, and difficulties faced by the person in a given environment, and has to do, for example, with the social context, the physical entourage, the operation of illegal markets, the presence or absence of police officers, or victims, or potential partners. Depending on the characteristics of both the person and the situation, it will be more or less likely for a crime to be committed.

Personal experiences and history shape many traits such as individual perceptions about what constitutes good or bad behavior, reasoning and self-control skills, school achievement, job skills, and employment opportunities in lawful activities. All this affects crime propensity—which refers to the tendency to see crime as an option at any given point in time—and crime exposure—that is, the degree to which it is more or less likely to be in situations of high risk of committing a crime, such as economic distress and association with people who break the law. There are policy options to reduce both crime propensity and criminogenic exposure. Because the relative importance of the factors affecting each of them depends on a person's biological and psychological maturity, the effectiveness of interventions focused on one or another varies throughout the life cycle. For example, programs to improve employability may be more relevant after adolescence, while programs focused on the development of emotional skills may be more effective in childhood.

The social and physical environments determine the opportunities to commit crime. In fact, most crimes are committed in certain places and at certain times. In every city where this matter has been analyzed, it turns out that specific places like blocks, corners, or alleys are especially dangerous, accounting for a disproportionate share of criminal activity. Certain things make these places different from others—even different from others within the same neighborhood—and therefore suitable for targeted interventions, such as increased police presence in these "hot spots" at times of high crime. Alternatively, it could be that the most appropriate intervention is simply better lighting or restrictions on the allowed schedule for alcohol sale. Understanding the circumstances operating in each space to be tackled allows for "tailored-made" actions with greater impact.

The opportunities to commit a crime may also be influenced by the existence of illegal markets, since in some cases, such as the drug market, the high revenues involved may create incentives for people to use violence to solve their contractual differences. In the case of the drug market, the extraordinary profits involved increase when the government focuses solely on fighting production and distribution without discouraging demand. In Latin America, drug production, trafficking and distribution explain a substantial fraction of the increase in violence in recent years. For example, in Colombia the size of the cocaine market almost tripled between 1994 and 2008; were it not for this, the homicide rate in 2008 would have been 28 per 100 thousand inhabitants instead of 39 (Mejía and Restrepo, 2013a).

Finally, the opportunities to commit a crime are affected by the operation of the criminal justice system: police, prosecutors, courts and prisons. These institutions play a key role in reducing crime by deterring criminal behavior and by incapacitating criminals through imprisonment. From the point of view of social welfare it is better when the criminal justice system acts through better prevention and deterrence than by putting people behind bars. However, in most Latin American countries the effectiveness of both the police and the rest of the system—its ability to increase the certainty and swiftness of punishment—has been weakened by, among other factors, management problems and overcrowding of prisons which, far from promoting the social reinsertion of inmates, often increases their crime propensity.

Citizen security policies cover a wide range of interventions in many domains, such as childhood, adolescence and the transition to adulthood; the family, the school and the related institutions; urban infrastructure and community; regulation and control of illegal markets; police and criminal justice, etc. Implementing these interventions requires not only specific skills but also a great deal of cooperation between ministries, levels of government, and public entities.

Interventions targeting individuals to reduce both their crime propensity and their criminogenic exposure may have important effects in the short term, but in general bear fruit in the medium term, as opportunities for social insertion increase. The interventions with the greatest short-term potential to curb the region's insecurity crisis are those linked to criminal opportunities. It is necessary to generate good diagnostics regarding the spatial distribution of crime and whether geographically targeted interventions are promising or not. It is also important to strengthen police training, improve judicial procedures and modernize the system of penalties for some offenses. The drug-fighting strategy is finally central, calling for a review of those policies tackling demand as well as for increased international cooperation, particularly with consumer countries.

Now, all these public policies are planned and executed in a particular political and institutional context. The authorities may have little incentive to prioritize crime fighting if it involves more risk than political gain. The incentives to address insecurity are greatest when the public regards it as a major problem and when it is capable of attributing the responsibility for it to a specific public authority. Even then, the political decision to address insecurity is not sufficient to provide effective security services; this decision can only turn into action when executed

by the public bureaucracy, a body often made up of low-skilled people working in less-than-optimal conditions and with few resources and incentives to provide good services.

Weak political incentives and limited state capacity can result in a poor provision of security and, as a consequence, in a gradual loss of public trust. When this happens, not only do citizens stop reporting crimes to the authorities (which limits the possibilities of resolving them) or give them poor reviews as to the quality of the criminal justice system more generally, but they may begin to take justice into their own hands, or to excuse behavior like the lynching of criminals or the violation of human rights of suspects—factors that end up fueling a vicious circle of increased insecurity and diminished state presence. Ultimately this process of dilution of the State also compromises the overseer role of the civil society vis-à-vis elected officials, causing the quality of public services to deteriorate even further.

This study seeks to promote an informed debate about what can be expected from different interventions. It also seeks to put into perspective the institutional challenges facing the region to strengthen the provision of security and the trust between the State and its citizens. The members of the gang responsible for the murder of Monica Spear and Thomas Berry were identified and captured within a week. The aspiration for the region is that regardless of the visibility of the victim, the society respond with the same energy and the same effectiveness to this kind of events and, above all, that it be the rarity of these episodes, rather than the gloss of a crown, which bring them to the front page of newspapers.

## **Citizen security: concept and measurement**

Physical integrity and property security are fundamental human rights (UNDP, 2013); they are indeed the basic foundation to sustain the agreement to live together in a society. To the extent that the State is unable to guarantee this right to all, life is constrained by each person's possibilities to procure that security for him or herself, aggravating social segregation and undermining the legitimacy of the State as the guardian of the social contract. Citizen security, by relying on the concept of fundamental human right implies an inclusive look on both crime victims and perpetrators; and in this sense is different from the concept of public security, which emphasizes the coercive power of the State, suggesting that repression is the main (and perhaps the only) way to fight crime.

Within the citizen security approach, the reduction of crime and violence is associated with democratic forms of coexistence and of political and institutional participation that foster greater trust among citizens as well as between citizens and the authorities. The citizen security approach is about public policies that seek the comprehensive development of families and communities, especially the most vulnerable ones. It encompasses approaches and disciplines dealing with the re-

straint of crime that go beyond control and repression, such as the analysis of the educational and socioemotional development of children and the youth, the study of the physical and social characteristics of the contexts for family life, and the promotion of greater civic culture through participation schemes and voluntary cooperation (IDB, 2012; Mockus, 2005).

In general, violent and criminal acts that threaten the physical, psychological and moral integrity of individuals involve a breach of the law. However, not all the acts of violence involve law breaking (e.g., psychological abuse of the children by their parents) and not all the legal offenses imply a threat to integrity (e.g., copying and selling DVDs). Crime and insecurity are related to the violation of a society's codes of conduct, many but not all of which are expressed in laws (Wikström, 2012).

**Citizen security, by relying on the concept of fundamental human right implies an inclusive look on both crime victims and perpetrators**

## CITIZEN SECURITY INDICATORS IN LATIN AMERICA

The measurement of citizen security indicators encompasses a broad spectrum of acts of violence and crime that affect people's physical and psychological health, and their property; from murder, theft, robbery, rape and kidnapping, to others that are not always adequately protected by laws such as domestic violence or bullying<sup>2</sup>.

Unfortunately, many citizen security indicators in Latin America are not always available or reliable. First, data-collecting offices usually belong to different levels of government (i.e., central government, provinces, and municipalities) and to different agencies within each level (e.g., the police, the ministry of health, the ministry of justice). This implies the need for major coordination efforts and institutional capacities to agree on methodologies and standards (including quality control) and to provide free access to the information on a regular basis and in a clear format<sup>3</sup>.

Second, there is underreporting, that is, people tend not to report crimes of which they have been victims. This problem varies by type of crime, by country, and within a country over time, which makes comparisons difficult. For example, it may stem from the distance to the institutions where crimes should be reported, or doubts about the usefulness of reporting them, or fear of being victimized again; but in any case it is negatively correlated with economic and institutional development. Soares (2004a) and Naritomi and Soares (2010) show that per capita income explains 65% of the cross-country variation in the percentage of crimes that are reported<sup>4</sup>. Underreporting is probably a less serious problem in the case

2. This report does not discuss in detail "white-collar" crimes such as fraud or corruption, due to lack of reliable statistics; however, the conceptual framework proposed in this report also applies to this type of crime.

3. Latin American countries have made progress in crafting a wide range of social and economic statistics of various kinds (inflation, education, GDP, employment, poverty, income distribution, etc.), which are estimated with methodological and statistical rigor by national and local authorities. However, in matters relating to insecurity the relative backwardness is remarkable. As will be seen below, even in as basic indicators as the homicide rate, there are important differences depending on the source utilized and in most countries there are no national agencies (e.g., statistical institutes) reporting it regularly and openly.

4. Ignoring this problem has led to errors in the interpretation of certain correlations; for example, a positive correlation between crime and development (Burnham, 1990; Stacks, 1984). Fajnzylber (2002a and 2002b) and Soares (2004a and 2004b) show that this correlation disappears when controlling for underreporting.

**Latin America's average homicide rate has been higher than that of any other region of the world**

of homicides due to the legal requirement to issue death certificates indicating the cause of death.

Latin America's average homicide rate has been higher than that of any other region of the world in the past few years<sup>5</sup>. Specifically, it was 28 per 100 thousand inhabitants in 2009-2011 (Table 1.1), more than 10 times the average homicide rate in Europe and North America. Furthermore, it has remained relatively stable at high levels over the past decades, while it has decreased in other regions.

**Table 1.1** Homicide rate per 100 thousand inhabitants per region<sup>a/</sup>

Region	Average 1995 - 1997	Average 2001 - 2003	Average 2009 - 2011 <sup>b/</sup>
Africa	31.6	24.0	18.0
Latin America and the Caribbean	29.9	24.7	27.9
Asia	5.7	4.8	3.9
Europe and North America	4.4	3.6	2.5
Oceania	1.5	1.4	1.1

a/ This table comprises only those countries that have information on homicide rates for all the periods covered. In Africa, these are the islands of Mauritius and South Africa; in Latin America, Argentina, Colombia, Costa Rica, El Salvador, Guatemala, Guyana, Mexico, Nicaragua, Panama, the Dominican Republic and Venezuela; in Asia, Armenia, China (Taiwan), Georgia, India, Israel, Japan, Kazakhstan, Kyrgyzstan, Nepal, Pakistan, Singapore, Syria, Thailand and Tajikistan; in Europe and North America, Albania, Austria, Bulgaria, Belarus, Canada, Croatia, Denmark, Slovakia, Slovenia, Spain, the United States, Estonia, Finland, France, Greece, Greenland, Holland, Hungary, Iceland, Ireland, and Italy, Lithuania, Luxembourg, Moldova, Norway, Poland, Portugal, the United Kingdom, the Czech Republic, Romania, Sweden, Switzerland and the Ukraine; in Oceania, Australia and New Zealand.

b/ or the latest available data (year 2008) for some countries

Source: UNODC (2013).

That said, there is much heterogeneity within the region (Table 1.2). Colombia, Venezuela, El Salvador, Guatemala and Honduras have had homicide rates above 30 in the period 2008-2011, while Argentina, Chile and Uruguay have had rates below 10. There have been steep increases, (between 50% and 100% over the past 10 to 15 years) in Venezuela, El Salvador, the Dominican Republic and Mexico, as well as in countries with traditionally low homicide rates, such as Costa Rica or Panama. In return, there have been some meaningful drops, especially in Colombia and to a lesser extent Brazil, but to still very high levels by international standards (34 and 21 respectively)<sup>6</sup>.

5. The conclusion that Latin America is the region with the highest homicide rate in the world would not change if the calculation included the information of all the countries in each continent for which information is available in that period. In this case the average for Latin America would be 21 while the homicide rate would drop to 14.5 in Africa.

6. As seen in Table 1.2 there is no information on the homicide rate in the mid-nineties in several countries (e.g., Chile, Brazil, Bolivia). Furthermore, depending on the source, homicide rates vary significantly; for example, according to UNODC (2013) the average homicide rate in 2001-2003 in El Salvador is 54.5 while UNDP (2013) and OAS (2012) report a rate of 35.8. Another example is Mexico, where UNDP (2013) reports a homicide rate of 29.3 while INEGI reports 9.5. In other words, the assessment of trends in crime, even using as basic indicators as the homicide rate is affected by the lack of reliable statistics.



**Table 1.2** Homicide rate per 100 thousand inhabitants for selected Latin American countries

Country	Average 1995-1997	Average 2001-2003	Average 2009-2011
Argentina	8.5	8.3	5.5
Bolivia	n.a.	n.a.	7.3
Brazil	n.a.	27.6	22
Chile	n.a.	4.8	3.5
Colombia	67.8	64.7	33.7
Costa Rica	5.5	6.7	10.9
Dominican Republic	12.7	16	24.7
Ecuador	n.a.	13.60	18.3
El Salvador	123	54.5	68.6
Guatemala	35.3	31.3	42.1
Honduras	n.a.	48.2	81.5
Mexico	15	9.5	20.6
Nicaragua	14.4	11.1	13.4
Panama	11.5	11.1	22.2
Paraguay	15.6	17.5	12.2
Peru	11.0	4.7	10.3
Uruguay	n.a.	6.5	6.2
Venezuela	20.3	38.1	48.7

n.a.: not available.

**Source:** UNODC (2013), National Police of Colombia (2013), DANE (2013), INEGI (2013), OAS (2013) and UNDP (2013).

**There is much heterogeneity in the homicide rate among the countries**

Beyond homicides, the incidence of other offenses such as assaults, street thefts and burglaries is also high in the region<sup>7</sup> (Table 1.3). In particular, assaults (which involve the threat of force) are 3.5 times more common in the region than in Europe (521 versus 150 per 100 thousand inhabitants), although these comparisons should be taken with a grain of salt due to different definitions and registration systems for each offense in each country as well as due to the aforementioned problem of underreporting, especially as regard non-lethal crimes.

7. If the average victimization rate in Latin America is 0.33, then the incidence of recorded crime for all households should be 14%, still well above the 4% indicated in Table 1.6. This difference may be accounted for by the fact that the effective rate of underreporting is even greater than that conveyed by the respondents and that the crime rates arising from official records do not include all offenses (e.g., "theft" only includes vehicle theft).

**Table 1.3** Assault, street theft and burglary, according to official records in Latin America. Crimes per 100 thousand inhabitants (latest year available)

Country	Assault		Street theft		Burglary	
	Latest year available	Rate	Latest year available	Rate	Latest year available	Rate
Argentina <sup>a/</sup>	2008	1,339	2008	872	n.a.	n.a.
Bolivia	2011	185	2011	104	n.a.	n.a.
Brazil	2011	918	2011	681	2011	124
Chile	2011	667	2011	1,406	2011	719
Colombia	2011	254	2011	249	2011	65
Costa Rica	2011	1,011	2011	541	n.a.	n.a.
Dominican Republic <sup>b/</sup>	2006	732	2006	32	n.a.	n.a.
Ecuador	2006	435	2006	96	2006	108
El Salvador	2011	152	2011	192	2011	8
Guatemala	2009	123	2009	67	2009	11
Honduras	2011	367	2011	78	n.a.	n.a.
Mexico	2011	841	2011	319	2011	170
Nicaragua	2010	808	2010	187	n.a.	n.a.
Panama	2011	433	2011	525	2011	84
Paraguay	2011	217	2011	592	2006	13
Peru	2009	229	2009	220	2009	14
Uruguay <sup>a/</sup>	2011	457	2004	3,323	2004	252
Venezuela <sup>a/</sup>	2007	217	2007	331	n.a.	n.a.
<b>Latin America Average</b>		<b>521</b>		<b>545</b>		<b>143</b>

n.a.: not available.

a/ For the "assault" category, there is no data of kidnappings.

b/ The "street theft" category only includes car thefts given data deficiencies.

Source: UNODC (2013) and OAS (2012).

**The average victimization rate in the region has fluctuated between 30% and 40% in the 2000-2010 period.**

To circumvent the unreliability of official records some organizations carry out victimization surveys, in which respondents are asked whether they or members of their families have been the victims of any offense over the past 12 months. Table 1.4 presents victimization rates from the *Latinobarómetro* survey for a sample of Latin American countries between 2000 and 2010<sup>8</sup>. The average victimization rate in the region has fluctuated between 30 and 40% between those years, without any clear time pattern save an apparent drop in 2010, to 25%. These levels are considerably higher than those observed in developed countries in Europe or North America, about 15%.

8. *Latinobarómetro* is not specifically designed to measure victimization rates, so that these may not be accurate given the relatively small sample size (approximately 1,000 households) and the fact that criminal events are of relatively low frequency. However, very few countries undertake victimization surveys periodically with national reach (with samples of more than 5,000 or more households), so that *Latinobarómetro* turns out a good option for a regional overview. Moreover, the rates obtained from national victimization surveys, such as Chile's, the only country with annual national statistics from 2003, are not very different.

**Table 1.4** Victimization rate in Latin American countries (2000-2010)<sup>a/</sup>

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	33.4	46.2	46.8	42.7	35.8	42.2	40.1	46.8	39.0	40.1	31.5
Bolivia	34.0	45.1	33.0	30.6	33.2	44.3	28.8	42.3	32.5	38.9	28.3
Brazil	31.7	35.9	35.4	36.1	27.2	44.9	33.5	41.9	40.0	40.8	22.8
Chile	28.0	42.0	35.6	33.8	32.9	38.8	34.3	39.8	31.5	30.9	23.4
Colombia	29.3	34.0	37.1	35.8	23.9	36.7	27.5	34.3	27.5	30.0	29.1
Ecuador	43.0	55.8	38.9	32.1	37.0	51.4	34.2	38.2	33.1	50.8	28.4
Mexico	30.7	77.9	75.0	59.7	59.1	66.8	32.8	39.1	42.2	38.3	26.3
Panama	16.7	36.7	27.6	25.3	18.5	20.9	17.5	14.4	11.6	28.7	16.8
Paraguay	32.2	39.0	46.0	36.9	40.3	39.1	24.0	40.5	29.5	31.5	26.3
Peru	42.2	48.2	37.2	34.3	33.2	46.9	35.3	43.3	37.0	38.1	27.8
Uruguay	18.7	29.6	27.6	26.0	18.4	38.6	33.0	34.6	28.4	31.2	17.6
Venezuela	32.2	48.3	43.3	45.4	42.2	48.1	35.0	48.7	53.4	38.8	24.5
<b>Average</b>	<b>31.0</b>	<b>44.9</b>	<b>40.3</b>	<b>36.6</b>	<b>33.5</b>	<b>43.2</b>	<b>31.3</b>	<b>38.7</b>	<b>33.8</b>	<b>36.5</b>	<b>25.2</b>

a/ The table reports the percentage of respondents who reported that he/she or any member of his/her family was the victim of a crime in the past 12 months.

Source: Latinobarómetro (2013).

Table 1.5 presents victimization rates from the CAF survey 2008-2012. These rates are not comparable with those of *Latinobarómetro* because they are not representative at the national level; however, at about 30%, they do not differ too much from the latter.

**Table 1.5** Victimization index in Latin American cities (2008-2012)<sup>a/</sup>

City	Victimization Rate				
	2008	2009	2010	2011	2012
Buenos Aires	28.8	28.6	28.4	23.5	38.4
Cordoba	26.2	32.1	23.8	20.9	29.3
La Paz	26.6	42.4	32.7	31.1	27.6
Santa Cruz	29.4	42.0	33.5	28.9	35.3
São Paulo	21.2	25.0	18.1	18.0	18.5
Rio de Janeiro	15.8	18.0	13.4	10.4	12.3
Bogota	31.8	32.4	32.0	31.0	28.4
Medellin	22.2	19.8	17.6	15.4	13.8
Quito	49.6	47.6	39.7	54.1	40.8
Guayaquil	42.7	48.8	40.8	37.9	37.6
Lima	48.0	39.4	30.5	39.1	31.0
Arequipa	66.4	34.7	36.6	42.3	38.2
Montevideo	24.4	27.9	29.2	29.3	29.2
Salto	14.0	15.5	19.8	16.1	20.1
Caracas	32.8	19.9	29.4	30.7	15.6
Maracaibo	48.3	31.9	29.7	22.9	29.7
Panama City	n.a.	n.a.	11.6	9.4	13.6
<b>Average</b>	<b>33.0</b>	<b>31.6</b>	<b>27.5</b>	<b>27.1</b>	<b>27.0</b>

n.a.: not available.

a/ The calculation of the rate only includes street theft, burglary, and fraud.

Source: CAF (2013).

One can assess the problem of underreporting by comparing the crime rates stemming from official records with those arising from victimization surveys (Table 1.6)<sup>9</sup>. In particular, in Latin America, official records indicate that only a relatively small percentage of households have been affected by crime (4% on average and in no country more than 12%), but victimization surveys point to a much higher rate (around 30% on average).

**Table 1.6** The incidence of crime according to official records versus victimization surveys

Country	Official records <sup>a/</sup>		Victimization <sup>b/</sup>
	Number of offenses	Rate (percentage of total households) <sup>c/</sup>	Rate (percentage of total households) <sup>c/</sup>
Argentina	877,129	7.0	36.9
Bolivia	29,812	1.1	33.3
Brazil	3,393,172	5.1	34.5
Chile	483,383	9.6	28.6
Colombia	267,182	2.0	28.9
Costa Rica	73,563	5.3	32.9
Dominican Republic	72,417	2.8	32.5
Ecuador	89,470	2.4	37.4
El Salvador	21,997	1.4	57.9
Guatemala	28,142	1.0	33.6
Honduras	34,645	2.1	35.5
Mexico	1,587,266	4.9	35.6
Nicaragua	57,962	4.7	29.2
Panama	39,012	3.8	19.0
Paraguay	54,026	3.3	29.1
Peru	133,899	1.9	34.3
Uruguay	136,422	11.7	25.7
Venezuela	151,555	2.3	38.9
<b>Latin America Average</b>	<b>418,394</b>	<b>4.0</b>	<b>33.5</b>

a/ Latinobarómetro's average for the period 2008-2010.

b/ The estimated incidence of recorded crime aggregates the three types of offenses described in Table 1.3 (assault, street theft and burglary) as a percentage of the number of households.

c/ Latest year available.

**Source:** Latinobarómetro (2013), UNODC (2013), OAS (2012) and World Bank WDI (2013).

In the CAF 2013 survey, moreover, respondents were asked straightforwardly about underreporting. According to their answers, only 43% of those households

9. Soares (2010) presents a similar analysis for the Latin American aggregate.

who were victims of a crime reported it to the law enforcement authorities<sup>10</sup>. The perception that these authorities do not fulfill their tasks efficiently seems to be a major reason for it. Indeed, asked about the reasons for not reporting a crime, nearly 40% of respondents said that the police would not have done anything, 16% stated that the incident was not important enough, 13% mentioned fear of reprisals and 12% cited lack of confidence in the police.

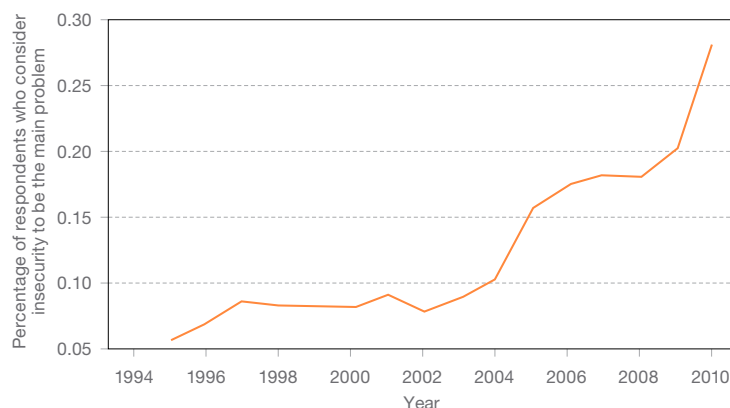
**According to the 2013 CAF survey, 24% of the population indicate that crime is their main concern, well above poverty and unemployment.**

## WHAT SHAPES THE PERCEPTION OF CRIME?

As will be discussed below, the costs of crime on development and welfare depend not only on the direct effects of crime on the health and the property of the victims, but also on certain decisions that families make based on their perception of the problem, even if they have never experienced it directly. That is why it is important to measure and evaluate the determinants of the perception of crime.

The perception of insecurity can be measured as the percentage of the public for which crime is their top concern. According to the 2013 CAF survey, that percentage is almost 24%, on average, in Latin American cities, well above the percentage of respondents who indicate their main concern to be poverty (13.0%), poor health services (12.5%) or unemployment (9.2%). According to *Latinobarómetro*, it increased from 5%, on average, in 1994 to over 25% in 2010 (Chart 1.1).

**Chart 1.1** Perception of insecurity in Latin American countries (1994-2010)<sup>a/</sup>



a/ The following countries were considered: Argentina, Bolivia, Brazil, Colombia, Costa Rica, Chile, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Dominican Republic, Uruguay and Venezuela.

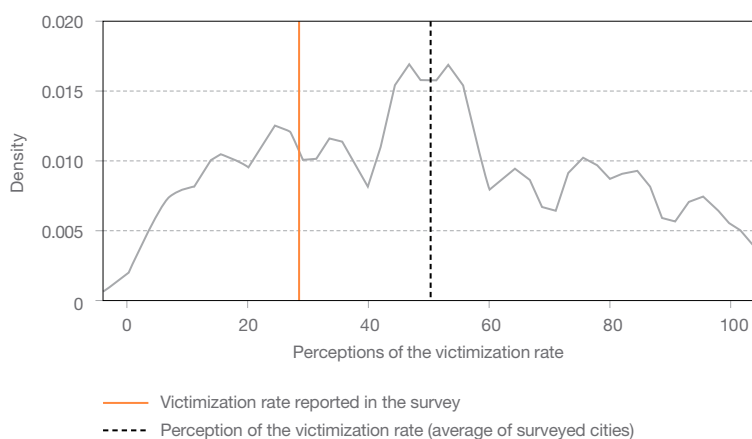
**Source:** Latinobarómetro (2013) and UNODC (2013).

10. If the average victimization rate in Latin America is 0.33, then the incidence of recorded crime for all households should be 14%, still well above the 4% indicated in Table 1.6. This difference may be accounted for by the fact that the effective rate of underreporting is even greater than that conveyed by the respondents and that the crime rates arising from official records do not include all offenses (e.g., "theft" only includes vehicle theft).

**The perception of insecurity may be related to factors other than the actual incidence of crime, such as exposure to crime by friends or acquaintances, the extent to which crime is covered in the media, trust in the police, and the availability of statistical information**

However, not always is the perception of crime related to its actual incidence (Restrepo and Moreno, 2007a and 2007b; Mascott, 2002). In the 2013 CAF survey, for example, respondents, on average, estimated the percentage of households that had been the victims of a crime in their respective cities at 47%, while the real rate of victimization was, on average, much lower (27%)<sup>11</sup> (Chart 1.2).

**Chart 1.2** Distribution of the perception of the victimization rate. Average of Latin American cities (2013)<sup>a/</sup>



a/ Cities: Buenos Aires, La Paz, Santa Cruz, San Pablo, Rio de Janeiro, Bogota, Medellin, Quito, Guayaquil, Montevideo, Panama City and Caracas.

Source: CAF (2013).

The perception of insecurity may be related to factors other than the actual incidence of crime, such as exposure to crime by friends or acquaintances, the extent to which crime is covered in the media, trust in the police, and the availability of statistical information. If this is the case, security policies should also consider these factors.

In a study commissioned for this report, Maris and Ortega (2013) analyze econometrically the correlation between the perception of insecurity and the actual incidence of crime. They show that this correlation is not statistically significant when using country-level data. However, it is positive and statistically significant when using individual-level data and controlling for socioeconomic (education, occupation and wealth) and personal (gender, age and marital status) factors (Box 1.1)<sup>12</sup>.

11. Respondents, however, estimated the percentage of households that had been the victims of a crime in their respective neighborhoods, on average, at 28%, very close to the actual average city rate.

12. These results suggest that aggregate correlations tend to underestimate the impact of crime on perceptions, because one cannot control for omitted variables that could be positively correlated with the level of victimization and negatively correlated with the perception of crime (e.g., socioeconomic status).

**Box 1.1** The perception of insecurity and actual crime

To what extent the perception of insecurity is related to the actual incidence of crime and violence? To answer this question, Maris and Ortega (2013) studied the correlation between perception and victimization using on one hand, aggregate data at the country level and, on the other, individual-level data, which allowed them to control for certain factors, such as socioeconomic status (education, employment and wealth), that most likely affect the perception of crime and the likelihood of being victimized at the same time.

Table 1, panel A, shows their estimates using aggregate data. The dependent variable is the percentage of the population in a country that regards crime as the most serious problem according to *Latinobarómetro*. The explanatory variables are, in one regression (column 1), the rate of victimization from the same source (the percentage of households who were victims of a crime over the past year) and, in another regression (column 2), the homicide rate reported by UNODC, in both cases plus control variables not shown in the table. None of the estimated coefficients is statistically significant, suggesting an apparent disconnect between the actual incidence of crime and the perception of it.

Table 1, panel B, shows the author’s estimates using individual-level data. The dependent variable takes the value of 1 if the individual believes that crime is the most serious problem and 0 if not. The explanatory variables include whether the individual or any member of his family was victimized in the past year and control variables related to the socioeconomic status of the household. Three outcomes stand out. First, victimization is positively and significantly correlated with the perception of insecurity. The effect is quantitatively small: those who were victimized are more likely to believe that insecurity is one of the main problems for welfare by approximately one percentage point. Second, the perception of insecurity is lower among families of lower socioeconomic status. Third, the perception of insecurity is negatively correlated with past the victimization of the individual’s reference group (column 2), suggesting that the effect of the incidence of crime on the perception of insecurity goes down over time, conceivably because the individual has had time to develop strategies to deal with the problem.

**Table 1** The determinants of the perception of insecurity in Latin American countries

Panel A. Aggregate correlations between the perception of insecurity and crime <sup>a/</sup>		
Independent variables	Perception of insecurity <sup>b/</sup>	
	(1)	(2)
Victimization	0.008 (0.04)	
Homicide rate		0.001* (0.00)
R-squared	0.684	0.695
Number of observations	256	214

Continued on next page >

Panel B. Individual correlations between the perceptions of insecurity and crime <sup>a/</sup>		
Independent variables	Perception of insecurity <sup>c/</sup>	
	(1)	(2)
Victimization	0.008*** (0.00)	0.009*** (0.00)
Low level of wealth	-0.014*** (0.00)	-0.016*** (0.00)
High level of wealth	0.015** (0.00)	0.019*** (0.00)
Victimization of the reference group <sup>d/</sup>		-0.006 (0.01)
Victimization of the reference group in the previous year		-0.024*** (0.01)
R-squared	0.084	0.088
Number of observations	148,766	127,336

a/ The regressions include several countries and years, so that year and city fixed effects are calculated. The countries included in the regression were Argentina, Bolivia, Brazil, Colombia, Costa Rica, Chile, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, the Dominican Republic, Uruguay and Venezuela.

b/ Perception of insecurity at the aggregate level is percentage of the population who considers crime to be the main problem.

c/ The variable individual perception of insecurity takes the value of 1 if the respondent considers insecurity to be one of the two main problems, and zero otherwise.

d/ The reference group of each individual was built based on country of residence, age, gender, education, and socioeconomic status for a given year, and the victimization of the reference group is the victimization rate for said group.

\*, \*\*, \*\*\* denote statistically-significant differences at the 10%, 5% and 1% level, respectively.

**Source:** Maris y Ortega (2013).

What about other potential determinants of the perception of insecurity, like the lack of reliable or credible information about crime? Such information deficiencies could lead to disproportionate perceptions of crime, because people could form these perceptions based on partial and biased information, such as the incidence of crime among their relatives and friends or its media coverage.

To assess how the provision of reliable statistical information on crime could change the perception of insecurity in Latin American cities, CAF's research department seized upon the 2013 CAF survey to run a research experiment consisting of providing information on the level and evolution of crime to a subset of randomly selected households in each city in the survey. As it turned out, providing credible statistical information indeed changed the perception of insecurity among respondents, especially among those respondents who, in the absence of such information, had overestimated the incidence of crime (Box 1.2).

### Box 1.2 Information as relief

What is the effect of providing credible statistical information about the incidence of crime on the perception of insecurity? To answer this, the CAF 2013 survey included a research experiment

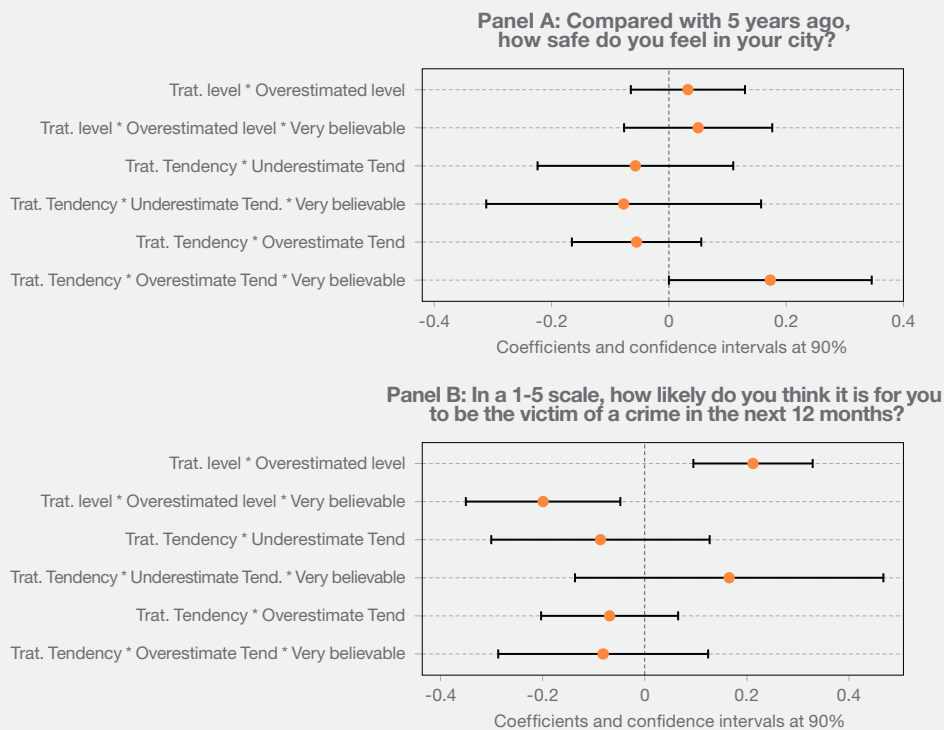


consisting of providing different information to three different groups of households in each city sample: one-third of respondents received information about the victimization rate in their city from the previous year's CAF survey; another third received information on the level and evolution of the rate of victimization over the past five years, also from CAF surveys; and the remaining third (the control group) received no information.

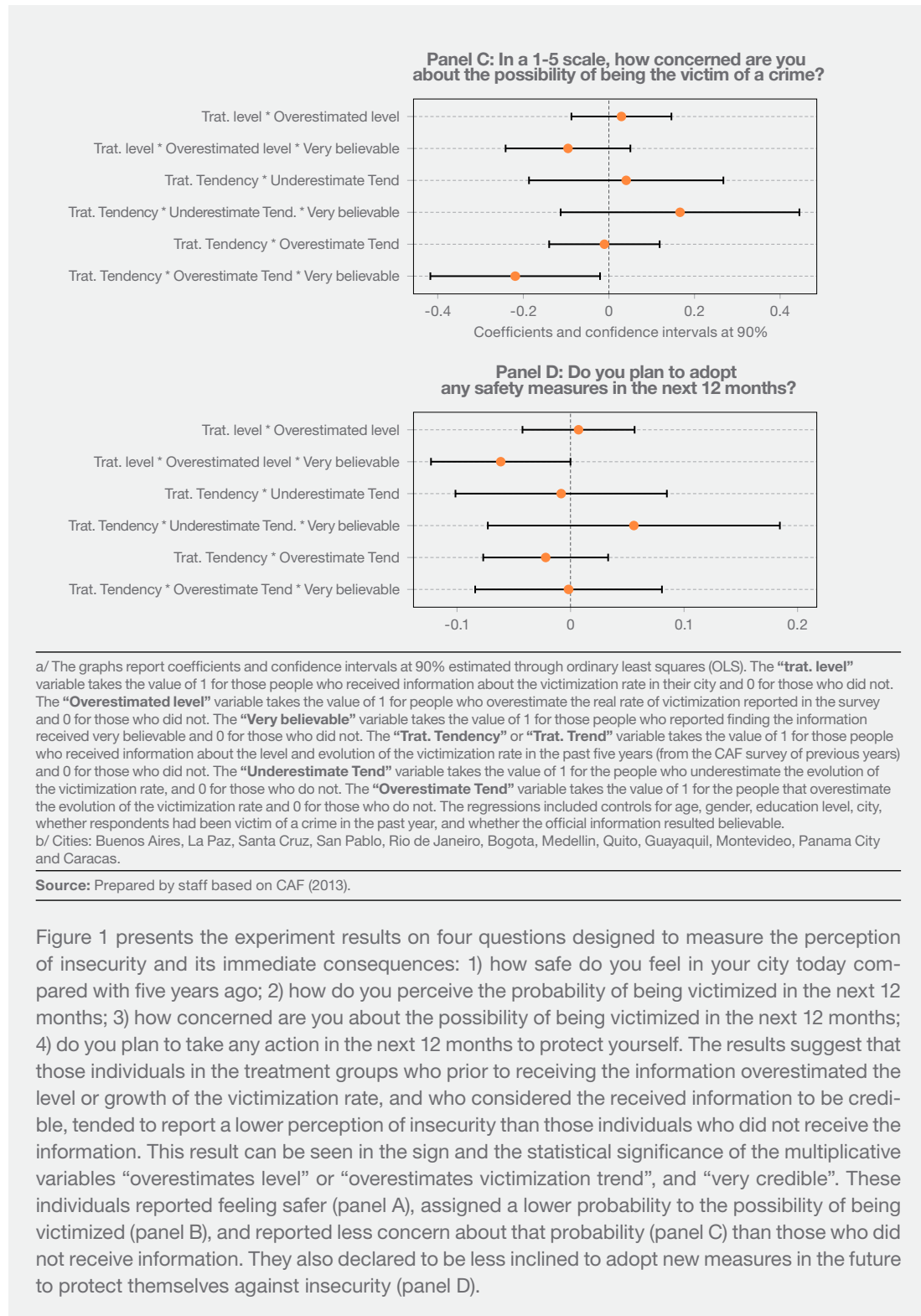
At the beginning of the survey respondents were asked what they thought was the victimization rate in their city and if this rate had been rising or falling in recent years. Then all those respondents who received information about victimization (the treatment groups) were also asked whether they considered that information very credible, somewhat credible, or not at all credible. Finally, all respondents were asked about their perception of insecurity and about the actions they considered adopting to deal with the problem.

Since the groups chosen to receive the information (the treatment groups) were selected through a random process, any partial correlation between having received information and the subsequent responses about perception of insecurity and other variables would not be contaminated by unobserved variables and could therefore be attributed to a causal link.

**Chart 1.** Impact of providing information on the perceptions of insecurity in Latin American cities (2013)<sup>a/ b/</sup>



Continued on next page >



## The costs of crime

Crime and violence entail high costs to society, both direct and indirect. Direct costs include the reduced life expectancy and other negative consequences of crime on the physical and psychological health of the victims; the public and private costs associated with the prevention and control of crime (e.g., the police), the criminal justice system and prisons; and the assets and properties lost or destroyed due to crime.

Indirect costs include the changes in behavior that people adopt to prevent crime (e.g., foregoing recreation or time outdoors); the changes in the decisions regarding labor force participation and human capital investment on behalf of households and those regarding investment and production on behalf of companies; and the impact on trust among citizens and in the government and institutions.

Given the array of channels through which crime and violence affect welfare, their effects on the development potential of a country is bound to be big, especially in countries where crime rates are as high as those of Latin America. Although quantifying these costs and welfare effects is not a simple task, there are some methods to estimate them, which are described below<sup>13</sup>.

### THE DIRECT COSTS OF CRIME

A widely used method to estimate the costs of crime is to add the (public and private) direct expenditures on health, on crime prevention and control, and as a result of crime; the value of the property destroyed; and the foregone income of prisoners and other people incapacitated or deceased as a result of crime. The information to carry out these estimates generally comes from secondary sources including the public budget, household surveys, records of medical expenses itemized by type of injury, census data with demographic information of criminals and victims, and judicial decisions on the compensation paid to the victims. One problem with this method, however, in addition to demanding very detailed administrative information on public and private expenditure, is that it can easily lead to errors such as double accounting (e.g., medical expenses may be included as part of the compensation determined by the courts).

Londoño and Guerrero (2000) provide estimates of the cost of crime in Latin America based on the case studies of five cities (Caracas, Cali, El Salvador, Lima, Mexico City and Rio de Janeiro)<sup>14</sup>. They come up with an estimate for the total cost of crime of roughly 5% of GDP: 2% due to medical care and the loss of life and 3% due to public and private expenses on security and the judiciary. For comparison, Soares (2010) has estimated the total cost of crime in the U.S. to be 4% of GDP.

The CAF 2013 survey also provides information on the cost of crime at a more mi-

**Some estimations suggest that in Latin America the cost of crime is approximately 2% of the GDP due to medical care and the loss of life and 3% of the GDP due to public and private expenses on security and the judiciary**

13. The analysis of the different methods for estimating the costs of crime follows in part the classification proposed by Soares (2009).

14. Calculations for other countries can be found in Miller, Cohen and Rossman (1993) for the United States; Brand and Price (2000) for England and Mayhew (2003) for Australia.

cro level. Indeed, 24% of respondents mentioned having installed security locks and bars, 17% said that they had guard dogs, and 12% reported having used cameras, private security or alarms<sup>15</sup>; all amounting to 4% of household income. In addition, respondents estimated the value of lost property and other expenses incurred to repair damage associated with crime at 6% of their household's annual income.

The direct costs of crime could also be estimated with more indirect methods. In particular, contingent valuation techniques attempt to elucidate through surveys how much individuals would be willing to pay for a reduction in the incidence of certain offenses; meanwhile, hedonic pricing techniques try to estimate the effect of insecurity on the price of certain private goods that can be enjoyed more when there is safety, such as housing. Both methods point to high costs. For example, in certain U.S. cities, respondents report being willing to pay between 100 and 150 dollars a year to reduce the incidence of crime by 10%; and in Bogota, high-income households are effectively willing to pay a 7.2% more, on average, for properties in neighborhoods with less crime (Box 1.3).

**Box 1.3 Other methodologies to measure the cost of crime: contingent valuation and hedonic pricing methods**

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Contingent valuation techniques attempt to quantify through surveys how much people are willing to pay for certain services or public goods. They have been widely applied to non-market goods and services, for example, the environment (Mitchell and Carson, 1989). In criminology, the pioneering works using this methodology are those by Cook and Ludwig (2000) and Cohen *et al.* (2004). In the latter study, applied in the United States, people were asked whether they would be willing to vote for a proposal that would require residents of a community to pay a certain amount to prevent one in ten crimes in that community. The offenses under analysis included house burglary, robbery, armed robbery, rape, and murder. The authors find that average citizens would be willing to pay between 100 and 150 dollars per year to attain a 10% reduction in the incidence of these offenses (the more serious the offense, the higher the willingness to pay).

Although this method is simple and easy to implement, assessing the cost of crime through the stated preferences of individuals bears the risk that these statements might not correspond to what people would actually do if they really had to pay to reduce crime. The hedonic pricing method, in contrast, seeks to estimate the willingness to pay from the *revealed* rather than the *stated* preferences of individuals. It has been applied to value various public goods such as the quality of education and the environment, and also the cost of crime.

The idea is that crime and violence in the neighborhood or town where a property is located may affect its value. Thus, the econometric estimates that explain the sale or rental price of

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15. In a paper commissioned for this report, Amodio (2013) shows that investment in protection against crime can generate negative externalities in the case of the City of Buenos Aires. Faced with the possibility of installing cameras and alarms in a home divert crime to neighboring homes, the latter also install such equipment.

properties as a function of crime (controlling for other attributes such as size, quality, location, access to services, etc.) can give an idea of its cost. Numerous studies have used this methodology for developed countries, for example, Thaler (1978), Gibbons (2004) and Linden and Rockoff (2008).

In Latin America, Lora and Powell (2011) show that between 40% and 50% of the change in the sale or rental price of housing in a number of cities in the region depends on the characteristics of the neighborhood, one of the most important among them being its safety. In Colombia, Gaviria *et al.* (2010) using a quality-of-life survey, land records, and crime data from the National Police, estimate a hedonic pricing model covering over 10 thousand households in Bogota; they identify that higher-income households are willing to pay up to 7.2% of the value of their property to live in a neighborhood with a one-standard-deviation lower homicide rate.

The hedonic pricing method can also be applied to estimate the costs of crime associated with physical injuries and the loss of life. Soares (1996) finds the average reduction in life expectancy associated with crime to be 0.6 years in Latin America (from 72 to 71.4, for a murder rate of 21.8 deaths per 100,000 inhabitants in the nineties) and 0.3 years in the US. The loss of consumption due to the increase in the mortality rate due to crime is equivalent to almost 2% of GDP, on average, in Latin America, and 0.9% in the United States. To estimate the lost “value of life” (Murphy and Topel, 2003) one can calculate the earning differential between high- and low-risk occupations or, equivalently, people’s willingness to pay to reduce the risk of death.

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Source: Prepared by CAF staff.

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## THE INDIRECT COSTS OF CRIME

The indirect costs of crime are harder to estimate. The available estimates, for example those of Londoño and Guerrero (2000), of about 7% of GDP for Latin America, are typically based on econometric estimates, be they cross-country or time-series.<sup>16</sup> However, these estimates suffer from the problem of identification: for example, just like more crime may generate less investment and employment, less investment and employment can generate more crime<sup>17</sup>.

Some studies try to circumvent this problem using more disaggregated data in combination with instrumental variable techniques and find that crime and violence do have a negative impact on labor participation and wages, as well as on the investment decisions of firms (Box 1.4).

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16. See also Pshisva y Suarez (2010).

17. Thus, for example, an analysis that describes a correlation between increases in homicide rates in certain locations within a country and lower employment growth and falling business investment does not prove that crime “cause” lower development. The decline in employment and investment growth can be associated with other factors (eg, sectoral shocks) and limited employment opportunities can encourage crime.

**Box 1.4 The effects of crime and violence on the labor market and on investment**

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Crime and violence can have a negative effect on several labor market indicators as well as on firm investment. Recent studies attempt to corroborate this causal link using highly disaggregated data in combination with instrumental variable techniques. For example Dell (2011) uses violence data in certain parts of Mexico between 2006 and 2009 and, as an instrumental variable to capture exogenous increases in violence, whether the PAN (National Action Party) had won the local elections in those municipalities by a narrow margin. The logic behind this choice is that, since the PAN controlled the national government in that period, the election of mayors of that party could be associated with increases in violence, as these mayors would be more likely to implement the new national policies of crackdown on crime. By considering only those municipalities where the margin of victory was narrow, one could expect that only the ruling party (or the increase in violence proxied by it) would explain changes in the dependent variables of interest, and not people's preferences or other unobserved variables. Dell found that the increase in violence caused a reduction in female labor market participation as well as a decline in formal sector wages in the aftermath of the election.

In another study, also for Mexico, Robles, Calderón, and Magaloni (2013) used, as an instrumental variable to capture exogenous changes in violence, records of drug seizure in Colombia (main producer) interacting with the distance of each Mexican town to the border with the United States (main consumer). This measure, first used in the work of Castle, Medina and Restrepo (2013) assumes that higher drug seizure in Colombia generate price increases, which in turn lead criminal organizations in Mexico to settle in more territories, and which promote more violence. Such incentives to expand are higher the closer the town is to the U.S. border. Using this variable to approximate changes in violence, Robles, Calderón, and Magaloni (2013) show that the increase in crime causes a drop in economic activity, proxied in turn by local energy consumption.

In the case of Colombia, Pshiva and Suarez (2010) combine information on crime for 32 departments in Colombia with financial information of 11,000 firms between 1997 and 2003. The idea is to see if the kidnapping of businessmen and managers are correlated statistically with firm investment. This type of crime should affect the decision of firms to invest directly, given the straight monetary and physical damage to their owners as well as the price tag of insurance and protection for managers and other employees. Thus, the novelty of this work is that the authors identify a specific form of crime that affects productivity and investment decisions of firms, differentiating it from crime that could be correlated with investment because of omitted variables explaining both (e.g., a subregional economic shock). In fact, to control for this potential bias in the results the authors include the killings and kidnappings associated with other companies as explanatory variables in their estimates. The study shows that the kidnapping of businessmen or managers affects firm investment negatively and significantly; not only does it affect those firms whose businesses or managers were abducted, but also those located in the same area.

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Source: Prepared by CAF staff.

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Finally, the CAF survey provides some insight on the indirect costs of crime in terms of citizen trust, both among one another and in their institutions. For example, inquired about the feelings elicited by the possibility that a household member could be the victim of a crime, 32% of respondents claimed that it caused

them to distrust others and 11% said that it made them more aggressive toward third parties.

Corbacho, Philipp and Ruiz Vega (2012) explore this issue more rigorously relating victimization to various measures of trust in formal public institutions and in informal private networks. Using micro data from the Gallup World Survey for a sample of Latin American countries, they examine the extent to which victims of robbery or burglary report having more or less trust in the police or the judiciary, as well as social or business networks. Their results suggest that those who were victimized have 10% less trust in the police than those who were not victimized, and also less trust in the judiciary and social and business networks, though these latter effects are much smaller and only marginally significant.

In short, crime and violence generate high economic and social costs for society. Estimates relying on public budgets and household surveys suggest that these costs are about 5% of GDP; in turn, contingent valuation and hedonic pricing methods suggest that families are willing to pay important sums (in terms of their income or the value of their properties) to avoid being victimized; finally, although the evidence is even more contested and difficult to identify, there are also negative effects on labor participation and business investment.

**Those who were victimized have 10% less trust in the police than those who were not victimized.**

## **A conceptual framework on crime determinants**

Insecurity is the result of many factors. One can emphasize the socioeconomic conditions of the population, or the fragility of the institutions and the mechanisms of state control, or the effect of social norms. All explanations are, to some extent, valid. However, they are often presented as alternatives that compete to be recognized as the real reason for insecurity. To transcend this debate it is useful to rely on a conceptual framework that helps put social and institutional factors in perspective and that promotes a fair and fruitful conversation about the intervention possibilities of each relevant actor.

Thinking in terms of broad concepts like “crime” or “violence” does not help unravel their causes. The prevalence of crime in any given location should be thought of as the sum of the criminal events that take place in it, so that the heart of the problem lies in the criminal event and in the reasons why there are many of these events in some societies and few in others. Centering the analysis on the criminal event is useful because it makes it possible to identify the several factors involved and how they interact.

The criminal event consists of a person who commits a crime and a situation in which he commits it. The person is influenced by all his past experiences; the situation in which he commits the crime comprises the physical and social charac-

**The criminal event consists of a person who commits a crime and a situation in which he commits it.**

teristics of the space and the moment in time, and the presence of encouraging or deterring factors in the environment (Figure 1.1).

**Figure 1.1** Conceptual framework of the determinants of crime



Source: Prepared by CAF staff

A person's personal history determines the probability that he commits a crime. For example, if due to little emotional support at home during childhood a person becomes drug-dependent and that leads to a spiral of consumption and deterioration of employment options until he can no longer finance his addiction, he is likely to end up in a situation in which his most viable alternative to get money be, given the chance, to steal it. Not everyone is alike, of course. People are not equally prone to develop a destructive habit, nor do they respond in the same way to adverse or favorable situations; thus, in no way does a given situation or a particular personal history condemn a person to a criminal career. However, personal history does shape the individual's propensity to commit a crime in a particular situation.

Two factors determine the probability that an individual commits a crime: his crime propensity and his criminogenic exposure. Crime propensity refers to a person's tendency to see crime as an option at a certain point in time, and criminogenic exposure refers to the degree to which a person is more or less likely to find himself in situations with high risk of committing a crime. While crime propensity refers to personal characteristics that make an individual prone to decisions that can involve a crime (e.g., degree of self-control, values and beliefs, etc.), criminogenic exposure refers to also individual factors that lead him to find himself in more or less risky situations (e.g., educational level, age, neighborhood of residence, etc.). Personal history is not a set-in-stone sentence, but it shapes both the behavior of the individual and the possibility that he may be in situations of greater criminogenic exposure. Public policies can reduce both crime propensity and criminogenic exposure. Chapter 2 delves into this.

The situation is the environment that surrounds the individual at a particular time. It is not the same to be in front of a bag of money in a dark alley as to be in front of that same bag inside a bank under the watch of its rightful owner and that of security guards. Some people might not take the money in either situation; some people might take it in both; but a lot of people would probably take the money in one situation and not the other. The situation in which a criminal event takes place, thus, is very important to its probability of taking place. Among the most important elements of a criminal situation are the physical and



social space (norms or peer pressure), the existence of illegal markets, and the perceptions about the functioning of the criminal justice institutions (including the police, the judiciary and the prison system). Granted, public policies can affect each of them.

First, as has been well established, crime is closely related to the physical space; there are very specific places, such as streets or corners, where a disproportionate share of criminal activity takes place. Those places have features that make them different from other locations even within their neighborhood, and hint to the possibility of implementing very geographically-targeted interventions, such as increased policing (“hotspots policing”) or improved lighting. The physical space is often closely linked with the social space; a place that is very deteriorated physically may reflect little social control. Chapter 3 elaborates on the relationship between crime and space, as well as on the policy implications that emerge from it.

Second, when a good is made illegal but its market is not fully eradicated, this has implications for how the participants of that market interact; e.g., it may force them to resolve their disputes independently, often resorting to violence. The most important illegal market in Latin America is that of drugs, which has not only direct implications for public safety, but also a negative effect on the legitimacy of the State as the provider of security. Because the illegality of drugs conditions the interactions of many micro-spaces, it makes up an important part of the environment. Chapter 4 analyzes the drug market (as well as other illegal markets) to shed light on how certain regulations can have a criminogenic effect.

Third, the probability of being captured by the police and sentenced by the judiciary is part of the environment of an individual who may be considering committing a crime. The characteristics and the effectiveness of the criminal justice system affect criminal activity, largely because they affect the certainty and the severity of punishment, and thereby the balance of benefits and costs of committing a crime. Moreover, the functioning of the criminal justice system may also affect the criminogenic exposure of those individuals who for one reason or another come into contact with it; for example, an overcrowded prison with major infrastructure failures could sharpen a person’s proclivity to break the law or resolve conflicts violently. Chapter 5 examines the evidence on the possibility of reducing the crime rate through the different parts of the criminal justice system.

In summary, the starting point to analyze insecurity in the region should be the criminal event, which is comprised of an individual who has a personal history and who is in a situation with more or less criminogenic conditions. There is room for public intervention both on the individual (at any stage of his life) and on the physical and social spaces, the markets, and the criminal justice system.

Now, the emphasis on the criminal event and its components neglects the victims of insecurity. Each criminal event, by definition, has a victim whose rights have been violated and, although crime victims are a minority of the population, any citizen may fear the possibility of being the next one. This is precisely the reason why insecurity can be perceived as the most important problem in a society. Chapter 6 reflects on the reasons why, although insecurity is the top public concern in Latin

**The majority of people who commit crimes, do it at a certain point in time and never again, while some few embark on lasting criminal careers.**

America, the authorities are not effective in implementing the set of policy options that are available to them. It focuses on the political incentives and the bureaucratic capabilities to address the problem, as well as on the deleterious consequences for public trust and the legitimacy of public institutions when the State fails to provide security.

## The report's main messages

The analysis presented in the previous section provides a conceptual framework to understand the determinants of crime and how they interact. Similarly, this analysis gave way to the structure of the report, the main conclusions of which are highlighted in greater detail below, following the order of the report's chapters.

### WHY SOME PEOPLE COMMIT CRIMES AND OTHERS DO NOT

Most people who commit a crime at any given point in time do not commit crimes systematically throughout their lives; actually often those who commit an offense never do it again. However, the vast majority of the society is on the side of the victims. What leads some people to undertake criminal acts? Why do some people keep reoffending for a long time while others do not? What role do family, peers, neighborhood and even biology play in shaping people's criminal trajectories throughout life?

Everyone has certain beliefs about what is good behavior and how it is related to the interpretation of laws and social norms. These beliefs and values, which in general are affected by one's emotional maturity and self-control, make up crime propensity, which is the filter through which everyone perceives the circumstances around oneself and which can be temporarily altered by the abuse of alcohol or other substances. Moreover, everyone has a different probability of being exposed to hazardous situations in which crime is a relatively easy alternative (e.g., because the people with whom one interacts see it as acceptable); or to situations of extreme need in which crime may be the only alternative. The exposure to these situations is called criminogenic exposure.

A person's crime propensity and criminogenic exposure may change over time; be altered to varying degrees at different stages of life; and have varying weight in the occurrence of criminal events, also depending on the person's age. The first years of life are crucial for the formation of crime propensity, and although criminogenic exposure is usually relatively low at that age, certain cognitive and socio-cognitive processes that will be important for future criminogenic exposure also kick off then. During adolescence, criminogenic exposure (in the form of peer pressure at school or in the neighborhood, for example) becomes very important and is still susceptible to be altered, while crime propensity at this stage gradually becomes harder to change. In the transition to adulthood, finally, criminogenic exposure becomes decidedly more important. Because both crime propensity and criminogenic exposure may change over time, it is natural for some people to

commit crimes at a certain point in time and never again, while some few embark on lasting criminal careers. It also implies that there are bound to be public intervention options with the potential to affect the crime rate of individuals at different stages of life.

It is more feasible to affect crime propensity in the early stages of life, and many interventions focus on both children and parents to do just this, promoting assertive parenting styles and alerting about the importance of proper nutrition. This stage is the “critical period” to invest in skills that will translate into lower crime propensity later on.

When children go to school (from age 6 to 18), although the family remains crucial, peers both at school and in the community or neighborhood go on to play a central role for both crime propensity and criminogenic exposure. At this stage there is also a set of effective interventions to reduce both: those that focus on reducing domestic violence and their traces on children and adolescents; those implemented in schools to enhance cognitive and non-cognitive skills; those that decrease possible criminogenic features inside schools (e.g., bullying); those aimed at the community and fostering interactions involving less criminogenic exposure, particularly for children and adolescents who live in high-risk areas (slums); and those targeting drug and alcohol use or the entry of adolescents in gangs. Recent evidence highlights the potential of cognitive-behavioral therapy techniques, both within families and in schools or vulnerable communities.

During the transition to adulthood it is still not late to prevent crime or re-offense. At these point, a person’s experiences in the labor market and possibly in prison, can be critical to criminogenic behavior. Promising interventions at this stage include, for example, supporting access to quality jobs.

Beyond the degree of effectiveness of each of the possible interventions, a key message of Chapter 2 is that it is necessary to intervene at all stages of life, since all interventions complement each other. A comprehensive view of crime prevention should consider the entire life cycle, with timely and proven interventions at each stage.

## **CRIME IN ITS PLACE**

Crime does not take place everywhere nor at all times; any city dweller knows which sectors of his town it is best to stay away from, especially at certain times. However, only in a handful of cities has this conventional wisdom translated into systematic public policy. When examining this intuition with scientific precision and detail, it is usually found that a disproportionate percentage of crimes occur in a small number of blocks, corners or alleys. In addition, most crimes are also concentrated in very specific times. It is not hard to imagine how this knowledge can be useful to design prevention policies or crime control.

The starting point is to identify the hotspots of crime, at the address or block level. This requires not only an accurate geo-referencing of the crime spots, but also the proper analysis of the statistical information. This analysis should be followed by

confirmation from those officials working on the street or even the members of the community that those spots are indeed especially problematic. All those familiar with the everyday life of public spaces can help put together a diagnosis of the problem in each place in order to design a tailor-made intervention strategy.

In general, the approaches that have tried to explain the concentration of crime in certain areas point to failures that may manifest themselves in the form of physical or social disorder (e.g., vacant land, broken windows, graffiti and trash; or prostitution, alcohol consumption, begging and fights, respectively). In any case, such disorder may signal unwillingness or inability on behalf of the residents to confront crime directly or indirectly, which criminals may perceive as a circumstance or opportunity that promises success and encourages crime. In short, physical and social disorder sends the signal to potential aggressors that committing a crime may be of little consequence.

Understanding these patterns makes it possible to implement prevention strategies focused on very specific areas to alter crime opportunities, social cohesion and the physical characteristics of the space. Some examples include patrolling on hotspots, improving lighting, restoring public spaces, and restricting alcohol sale. A recent example of this type of targeting is the program *Mi Parque* in Santiago de Chile, which shows promising results in terms of reducing crime and increasing social cohesion.

The evidence on the merit of implementing (not just police but rather multidimensional) spatially targeted interventions is most encouraging. Although it is sometimes feared that targeting specific places may only cause crime to move to nearby untargeted places, the evidence actually points to the opposite effect: the benefits observed in the targeted places actually spill over to surrounding areas, reinforcing the notion that it is some very specific characteristics that make certain places particularly criminogenic; and these features, thankfully, do not seem to travel well.

## **DRUG-TRAFFICKING AND VIOLENCE**

Banning the production, trade, and consumption of a product is a regulatory decision with important consequences for how people interact in this product's market. Although the most notorious case in point in Latin America is the drug market, the issue applies to other products, such as mahogany in Brazil or illegal DVDs across the region. The illegality of certain markets is an important factor conditioning the situations in which people find themselves; its special relationship with citizen security stems from the fact that violence is often an option to resolve conflicts in these illegal markets. For example, it has been estimated that 25% of the homicides in Colombia between 1994 and 2008 were a direct result of drug trafficking.

Beyond the valid reasons to ban drug markets (such as the effects of drug abuse on the health and the social environment of consumers, as well as their potentially aggressive and irresponsible behavior) the debate surrounding this ban should take into account the structure of the problem in a comprehensive way to avoid other potentially harmful effects on society, which in some cases can include situations of extreme violence like those experienced for many years by Colombia and more recently Mexico and parts of Central America.

The starting point to analyze an illegal market is to identify the economic rents that the product entails, given its production technology. The higher the rents, the greater the potential for disputes over the control of its market and of the inputs and territories needed to produce it. To the extent that these disputes cannot be resolved with formal proceedings, they will be settled directly, frequently through violence. For an illegal market to generate violence, it needs to generate rents. This is why there are many illegal markets that are not violent (e.g., plagiarism of composers, fake clothes and footwear) along with those that are (e.g., drugs and illegal mining). Non-violent illegal markets typically do not have barriers to entry, so that new players are not forced to use violence to displace existing ones. This implies that to reduce the violence associated with illegal markets, one should try to reduce their rents, either by lowering the barriers to entry or by discouraging demand.

The drug market is emphasized because of the predominant role it has played in the history of violence in several countries of Latin America. In line with the above logic, the drug ban should be handled with the goal of reducing the associated rents; while at the same time there should be initiatives on the demand side, precisely to lower the economic incentive to join in the market. This basic logic applies not only to the large flows of drug traffic, such as the routes from Colombia to the United States via Central America and Mexico or Venezuela and the Caribbean; it also applies to micro-trafficking networks in large cities like Rio de Janeiro, São Paulo, Medellín, Caracas and more recently Rosario in Argentina.

The challenge is to set realistic targets for the control of drug-related violence. On one side, policies aimed at reducing demand can play an important role and, on the other side, to the extent that the drug ban remains in place (which is a barrier to entry, of course) policy efforts should be focused on controlling the associated violence, rather than traffic and consumption themselves. A possible approach is to apply “selective enforcement”, that is, to punish the most violent criminal organizations with the maximum weight of the law, to trigger a “race to the bottom” (i.e., no gang will want to be the most violent one).

## **CRIMINAL JUSTICE INSTITUTIONS**

The criminal justice system is responsible for using the mechanisms of state control to deter criminal behavior, and for using force to deter and incapacitate those who were not deterred. The threat of punishment is the most powerful mechanism to attain this effect, so that the effectiveness of capture and the implementation of penalties are important to any public policy priorities. The institutions that make up the criminal justice system —the police, the prosecution, the judiciary and the prisons—are closely interrelated, so that if any of them performs poorly, the deterrent power of the whole system is undermined.

The evidence from different contexts shows that an increase in police presence is associated with a reduction in crime. This has more to do with the police’s deterrent role than with the incapacitation of those who have committed crimes through arrest. The evidence, moreover, suggests that crime does not migrate much in

**The evidence on the merit of implementing (not just police but rather multidimensional) spatially targeted interventions is most encouraging.**

**The illegality of certain markets is an important factor conditioning the situations in which people find themselves; its special relationship with citizen security stems from the fact that violence is often an option to resolve conflicts in these illegal markets.**

time or space in response to increases in police presence. Of course, this does not imply that the ideal policy be to increase police presence without limit, since this would imply substantial resources; it is necessary to find the right balance between its gains in terms of reducing crime and the opportunity cost of the resources employed. Another issue is the different types of possible police intervention; some options include hotspot policing; problem-oriented police, which has also shown positive effects; and, finally, community policing, inherited from countries like the UK, which can not only reduce crime but also help improve trust in the police and reduce the perception of insecurity.

The deterrent power of the police depends largely on the effectiveness of prosecutors and the court system. The certainty of punishment depends not only on the probability of arrest, but also the likelihood of prosecution and conviction. The role of the prosecution in the criminal justice process is key, particularly after the reform of the prosecution systems in the region, which involved additional demands on a bureaucracy used to a particular way of doing things.

Rising insecurity and demands for greater repression and control have led to a meaningful increase in incarceration in most countries of the region. This increase, coupled with restrictions to boost prison infrastructure, has led to serious overcrowding. This situation severely limits the potential of these institutions to reform the detainees and even encourages future re-offense. Building more and better prisons is key to contain the re-offense rate of those who have passed through them since, in their current state, prisons operate rather as universities of crime.

In fact, imprisonment has very limited deterrent power, making alternative punishment mechanisms such as electronic monitoring without imprisonment emerge as potentially attractive options. This is particularly the case for those whose re-offense risk is low, since it would avoid the negative effect of their passage through prison and it would generate substantial tax savings that could be invested in prevention.

## **ELECTORAL INCENTIVES, STATE CAPACITY, AND LEGITIMACY**

When there are fewer and fewer times and places in which citizens feel safe, there is also less freedom. Even if not everyone may be a direct victim of insecurity, everyone may endure it. That is why, when insecurity reaches very high levels, it can become one of the most important concerns of the population. Although public policy plays an important role in the incidence of crime; not always do the authorities put public safety high on their agenda. This may be because under certain circumstances policy-makers may not have the political incentives to prioritize safety, which in turn depends on the importance that citizens grant to the issue and also the extent to which they hold policy-makers accountable for it.

Even when policy-makers have all the intention to implement security initiatives, there is no guarantee that they will succeed. Public policy, after all, is implemented by the public sector's bureaucracy, and the capabilities of the latter are conditioned by its human resources, its budget, and its incentives. For example, workers in

the criminal justice system tend to be less educated than those of the rest of the public sector. Moreover, the resources allocated to the criminal justice system vary widely between countries, from 2% to 10% of the total government budget. Finally, the incentive structure of public servants arises from compensation schemes, promotion and surveillance systems, and rules governing certain functions; these elements can also limit or enhance the public sector's capability to implement policies and programs.

Finally, when the State is unable to provide safety, the public trust in public institutions as underwriters of the social contract is eroded. This may have various implications, to the detriment of public safety: people can take justice in their own hands, or endorse an excessive use of force by the police, or even give up on their overseer role through elections and other means of direct political participation. Citizen frustration with public sector ineffectiveness in many areas, but especially in the provision of public safety, ends up undermining its legitimacy, which in turn makes its job even harder.

**The evidence shows that an increase in police presence is associated with a reduction in crime. This has more to do with the police's deterrent role than with the incapacitation of those who have committed crimes through arrest.**

## Conclusions

Public safety is an important determinant of the welfare of families and communities. The meaningful growth of crime and violence in many countries in Latin America in recent years has not only involved high economic and social costs, but also compromised democratic governance and state legitimacy by undermining the trust among citizens and of citizens in the authorities.

The design and implementation of effective policies requires a diagnosis on the determinants of this phenomenon beyond the simplistic rhetoric according to which crime is just the result of deprivation or, alternatively, of insufficient control and punishment. The analysis provided throughout this chapter (and throughout the report) shows that a criminal event is the result of decisions made by individuals in a particular context. While it is true that the beliefs, perceptions, and other personality traits (in turn shaped by family life, schooling, job opportunities and other experiences throughout the life-cycle of an individual) can incline someone toward crime, he is also influenced by his physical and social environment, the incentives implied by the existence of illegal markets (e.g., drugs), and the credibility and efficiency of the criminal justice institutions.

From this perspective, crime-fighting actions involve a wide range of dimensions: family, school, neighborhood, community, urban infrastructure, economic regulations, police, justice, and prisons. The available evidence (mostly for developed countries) shows that improving the nutrition and early stimulation of children and promoting family environments of proactive parenting and limited conflict, has a positive impact on people's crime propensity and the incidence of crime. The same is true for interventions at school and on the peer group during adolescence, which reduce the youth's criminogenic exposure. Despite their importance, these investments pay off only in the medium and long term; in the short term, interventions that affect the environment and the opportunities for crime, such as improving

**When the State is unable to provide safety, the public trust in public institutions as underwriters of the social contract is eroded.**

public spaces, restricting the sale of alcohol at certain times, and targeted policing (on problems or in the territory), could be very rewarding.

However, to plan, design, and implement these various interventions it is necessary to improve the available information. A basic first step is to obtain reliable measurements of the incidence of crime, both through administrative records and victimization surveys. Indeed, despite the importance of crime and violence for public opinion in the region, much remains to be done to produce statistics that, with periodicity and methodological rigor, allow for a quantitative assessment of the phenomenon.

But that is not all. It is also important that public policy initiatives are monitored and evaluated to learn about their quantitative and qualitative effects and to understand the channels through which these effects operate. Such learning is essential when it comes to phenomena with multiple determinants, and where policy outcomes can be very specific to the context in which these policies are implemented.

Very importantly, generating statistics and designing, implementing, and evaluating policies require meaningful institutional capabilities. These capabilities do not appear in a vacuum but rather emerge from the political decision to prioritize these issues; which, in turn, depends on citizens' exerting pressure on their representatives through their participation and their vote. Finally, besides political will, it is necessary to have properly trained public bureaucracies, with the right incentives and resources for effective action.







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# WHY SOME PEOPLE COMMIT CRIMES AND OTHERS DO NOT

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## Chapter 2



## Chapter 2

# WHY SOME PEOPLE COMMIT CRIMES AND OTHERS DO NOT<sup>1</sup>

*“He who does not prevent a crime when he can, encourages it”.*  
Séneca, *Troades*.

## Introduction

Nobody is born a criminal. Being a criminal is not a permanent condition. On the contrary, many individuals who commit a crime at some point, never commit a crime again. Furthermore, only some individuals commit crimes, while most people play on the victims' side. Why is it that only certain individuals commit crimes? And why is it that some continue to live as criminals while others move on? What role do family, peers, neighborhood and even biology play in shaping criminal trajectories?

The concepts of crime propensity and criminogenic exposure help answer these questions. To understand these two concepts one can think of crime as an epidemic. Viruses spread first among the most vulnerable (those lacking defenses), then affect the not so vulnerable, then mutate, take on new forms and settle strategically in population subgroups with a high average level of risk factors. Just as certain factors (e.g., good health) protect against, and certain factors (e.g., the viruses) promote infections, certain factors protect against and promote engaging in criminal behavior. Protective factors make up an individual's “crime propensity” (a low propensity acts as a protective factor), while promoting factors are linked to the frequency with which the individual finds himself in risky situations, which determines his “criminogenic exposure”. Crime propensity and criminogenic exposure interact with the environment at a given point in time, forming the criminogenic situations that can result in an offense (Wikström, 2012).

Of course, neither crime propensity nor criminogenic exposure is predetermined or static; rather, both are affected by the events that mark people's lives. Certain life stages are more important for the formation of crime propensity while in other stages the influence of criminogenic exposure is greater. For example, while the first years of life are crucial for the formation of crime propensity, at that age criminogenic exposure is less critical to create potential criminal events. However, during puberty and adolescence, criminogenic exposure—for example, as given by the behavior of peers at school or in the neighborhood—has an increasing role in shaping crime situations. In the transition to adulthood, there is also the effect of the exposure to peers in the relevant everyday environment, such as the workplace or, for those already behind bars, the prison environment.

Because crime propensity and criminogenic exposure are not static, it is natural for some people to commit crimes at certain points in their lives and then stop, while

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1. Lucila Berniell wrote this chapter.

others become career criminals for the rest of their lives. The possibility that some people change state (from criminal to non-criminal) makes it possible to conceive measures to reduce crime among them. In fact, the fatalistic claim that nothing can stop crime and violence is well far from truth.

This chapter assembles the best empirical evidence backing the effectiveness of crime prevention interventions throughout people's life. While mostly available for developed countries only, the main findings indicate that the most profitable investments to reduce crime propensity are those that focus on the early stages of life (early childhood), while those seeking to reduce criminogenic exposure have greater effects as of early adolescence. Investments in early childhood, which place great emphasis on the role of the family, are very effective because they lay a solid foundation for the development of cognitive and emotional skills that help people stay away from criminogenic situations later on.

Furthermore, interventions focusing on school-age children (6 to 18 years, approximately) also involve other institutions, such as schools and communities or neighborhoods, as these come to be important sources of criminogenic exposure among young people. Policies and programs that have proved very effective in reducing crime propensity and criminogenic exposure at this stage are those aimed at reducing domestic violence and their traces on children and adolescents; those undertaken at school to enhance cognitive and non-cognitive skills; and those aimed at the community or neighborhood to encourage social interactions involving low levels of criminogenic exposure (e.g., those seeking to reduce the use of drugs and alcohol or teen gang entry).

Later in life, when adolescents transition into young adulthood, there are still chances to prevent their opting for a life of crime. To this end, their job insertion and the rehabilitation possibilities afforded by prisons or correctional systems are critical.

However, despite the (growing) body of empirical evidence that indicates the availability of many successful preventive interventions focusing on people, there is still much to learn about these policies in the context of Latin America. In particular, it is crucial to understand which interventions can be adapted to the reality of the region, to then channel the many efforts seeking to improve public safety into a comprehensive system of timely crime prevention.

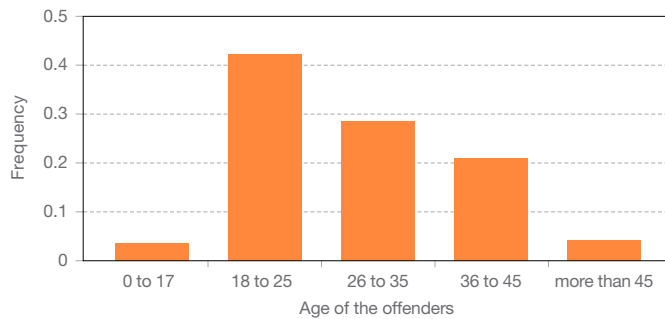
## **Criminal activity throughout the life cycle**

Most crimes are committed by young people. Eighty-five percent of the victims surveyed in the CAF survey, for example, say they were assaulted by offenders younger than 35 (Chart 2.1(a)). This is a common pattern in many studies

about crime: across countries<sup>2</sup> and periods, criminal activity peaks before age 20, growing rapidly during adolescence and decreasing more gradually toward adulthood (Chart 2.1(b)).

**Criminal activity peaks before age 20, growing rapidly during adolescence and decreasing more gradually toward adulthood.**

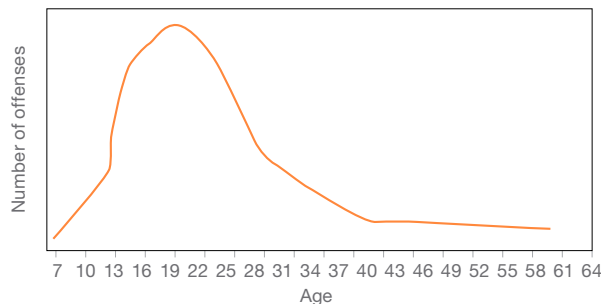
**Chart 2.1(a)** Age distribution of offenders. Ages reported by victims of various crimes in Latin American cities (2013)<sup>a/</sup>



a/ Cities: Buenos Aires, La Paz, Santa Cruz, São Paulo, Rio de Janeiro, Bogota, Medellin, Quito, Guayaquil, Montevideo, Panama City and Caracas.

Source: CAF (2013).

**Chart 2.1(b)** Stylized distribution of the number of crimes by age, based on longitudinal studies



Source: CAF staff based on Piquero, Farrington and Blumstein (2007).

The relationship between age and crime shows other interesting features (Piquero, Farrington and Blumstein, 2007):

2. These studies use longitudinal individual data, so far available for the analysis of criminal lives only in some developed countries (see Box 2.1).

**A small percentage of the population commits the majority of crimes: they are called “career criminals”.**

- Criminal activity typically starts between ages 8 and 14; ends between ages 20 and 29; and peaks during adolescence (between ages 15 and 19).
- While an important percentage of the population has had some link –albeit fleeting and mostly during adolescence—with criminal activity<sup>3</sup>, few individuals persist in criminal activities as adults.
- A small percentage of the population commits the majority of crimes: they are called “career criminals” and they tend to start earlier and commit crimes more often and for more years.
- There is some persistence in conflicting (antisocial) behavior throughout the life cycle: people who showed behavioral problems or participated in criminal acts during their youth are more likely to maintain this behavior into adulthood than those without this type of behavioral background.
- As they get older, common offenders typically go from acting in groups to committing crimes on their own.
- The reasons why people under 20 commit crimes range from boredom and thrill seeking to money. From 20 on, economic reasons take precedence.
- The starting age of crime varies by crime type, with minor offenses being those that people start committing the earliest. In general, crime diversification increases until age 20 and decreases thereafter, as specialization goes up.

Life-course criminology scholars (Moffitt, 1993; Sampson and Laub, 2003; Piquero, Farrington and Blumstein, 2007) have classified offenders according to the persistence of their criminal careers in a spectrum that goes from “circumstantial criminals” to “career criminals”. Circumstantial criminal are those who have committed crimes only sporadically and without reoffending systematically, while career criminals commit more serious, more frequent, and increasingly serious crimes for much of their lives (about 30 years).

Piquero, Farrington and Blumstein (2007) summarize the results of analyzing 30 years of life trajectories (from age 10 to age 40) of a group of high-risk youth, who comprise the *Cambridge Study in Delinquent Development* (CSDD)<sup>4</sup>. After applying a series of statistical methods to discriminate between different types of trajectories, they obtained the following five groups:

- Group 1: non-criminals
- Group 2: low criminal activity, teen peak
- Group 3: low criminal activity, chronic
- Group 4: high criminal activity, teen peak
- Group 5: high criminal activity, chronic

Group 5, the one that can be most directly identified with the concept of career criminals, represents only 2.5% of the sample, which is taken from a population

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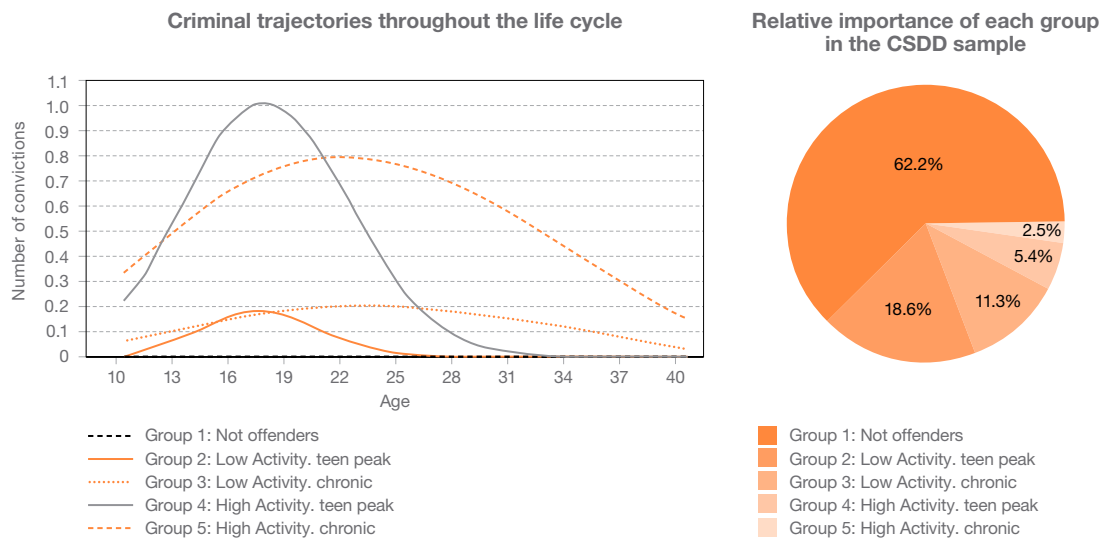
3. In several longitudinal studies for developed countries (see Blokland and Nieuwbeerta, 2010) the percentage of people who by age 20 had some contact with the police (e.g., being stopped or delayed, etc.) is about one third of the population. However, the self-reported participation in criminal acts almost reaches 100%, meaning that almost everyone has committed an offense (probably a minor one) before reaching adulthood.

4. The *Cambridge Study in Delinquent Development* (CSDD) is a longitudinal study that followed a cohort of 411 youths (born in 1953) living in vulnerable neighborhoods in the south of London.



of high criminogenic risk. Groups 4 and 5, the two groups of high criminal activity, account for 8% of the youth at risk, but by age 17 have committed more than half the crimes committed by people of that age.<sup>5</sup> Meanwhile, Groups 2 and 4, representing the typical cases of circumstantial criminals, on which the influence of peers during adolescence seems to play an important role, make up about a quarter of the sample (see right panel of Chart 2.2).

**Chart 2.2** Criminal trajectories throughout the life cycle and the relative importance of each group in the sample of the *Cambridge Study in Delinquent Development Trajectories* (CSDD)



Source: CAF staff based on Piquero, Farrington and Blumstein (2007).

These results, which were obtained thanks to the availability of longitudinal studies, into which Box 2.1 dives deeper, demonstrate that there are relatively few career criminals and instead many transitions from crime to non-crime. Thus, the empirical evidence downplays some extreme positions claiming the impossibility of leaving a life of crime. For example, Gottfredson and Hirschi (1990) argue that crime propensity is determined very early in life (up to age 10 to 12, approximately) and conditions its subsequent trajectory. Adherents of this hypothesis note the importance of biological and developmental factors in early childhood, and argue that antisocial behavior at that age is very important for predicting violent or criminal attitudes in the future. For them, detecting these individuals early is essential to prevent crime.

**High criminal activity, account for 8% of the youth at risk, but by age 17 have committed more than half the crimes committed by people of that age.**

5. These figures coincide with those inspiring the design of the program "The 8 Percent Solution" in Orange County (USA). For details: <http://ocgov.com/gov/probation/about/8percent/>.

**The empirical evidence downplays some extreme positions claiming the impossibility of leaving a life of crime.**

However, although some degree of continuity in antisocial or violent behavior is observed throughout life, the existence of groups with dissimilar paths and state transitions (from criminal to non-criminal) support the hypothesis that one can change that predisposition or at least moderate its effects (Sampson and Laub, 2003; DeLisi and Piquero, 2011). This less deterministic view holds that crime prevention public policy should focus on broader age spectra, covering the entire life cycle of individuals.

**Box 2.1 The importance of longitudinal data in the study of crime**

Longitudinal studies gather information about a set of people over time, for example every five years. Whether they are experimental (relying on an intervention for which treatment and control groups are formed) or non-experimental, they can illuminate the debate about which factors are “promoters” of crime entry and which factors are “protective” against crime involvement.

**Prospective longitudinal studies**

Prospective longitudinal studies are usually performed on samples that are representative of the population of a city or some of its subsets, such as people with risky profiles or consummate criminals. The idea is to observe the development of criminal careers to detect associations between factors promoting or protecting against crime entry and the persistence, severity, scaling and specialization of criminal activities. In general, prospective longitudinal studies rely on personal interviews spaced out in time (at least five years, as suggested in Farrington, Loeber and Welsh, 2010).

These studies make it possible to sort criminal career events over time, and rely on the resulting sequences to analyze explanatory models regarding the causes for crime entry and exit. However, they do not make it possible to establish causal relationships, since the factors interacting to determine individual criminal trajectories are usually many. The best way to identify causal relationships would be experimentation, but it is not always possible.

In addition, there are other problems common to all longitudinal studies, such as the loss of individuals in successive measurements. It is also important to control for the effects of age (for which it should cover enough years so as to reflect the relevant life cycle); of the cohorts analyzed (for which different cohorts should be included); and of the years in which measurements are undertaken (for which the interviews should be conducted in both “good” and “bad” years). Examples of such studies are:

1. Longitudinal studies focused on crime: Project PADS+ (Peterborough Adolescent Development Study); Rochester Youth Development Study; the longitudinal study started by Sheldon Glueck and Eleanor Glueck (Unraveling Juvenile Delinquency, 1950) and continued by Sampson and Laub (2003).
2. “Multipurpose” longitudinal studies focused on general aspects of individual development (employment, education, etc.), but which can be used to study crime: NLSY79/97 (National Longitudinal Survey of Youth), PSID (Panel Study of Income Dynamics) y AddHealth (National Longitudinal Study of Adolescent Health) in the United States. Two examples in Latin America are the “Longitudinal Survey of Early Childhood” in Chile and the project “Children of the New Millennium”, in which Peru participates.

### Experimental longitudinal studies

An experiment is an attempt to study the effects of a given factor (independent variable) on an outcome of interest (dependent variable). For example, in the study of crime, the independent variable under control of the researcher is any intervention presumed to be effective in reducing crime, while the dependent variable is a measure that reflects the incidence of crime or violence in a given community. The best way to put together an experiment that can really answer the question posed is to undertake the intervention on a randomly selected group of people only, thus generating a “statistically equivalent” comparison group, called the control group.

Experimental studies generating longitudinal data are useful not only to understand the mechanisms that lead to crime, but also to design better prevention policies. Many of the most relevant results regarding the impact of the interventions under study were observed several years after the interventions were implemented (e.g., in the Perry program, see Heckman and Krautz, 2014), which strengthens the case for collecting data comprising long periods. Furthermore, it is crucial to have large enough samples (e.g., more than 500 people, as advised by Farrington, Loeber and Welsh, 2010) to make it statistically possible to detect differential intervention effects among population subgroups (heterogeneous treatment effects).

Some examples of well-designed longitudinal experimental studies, which make it possible to observe the “natural” development of criminal lives but also to measure the impacts of anti-criminogenic interventions are:

- *Perry Preschool Project* (Heckman, Pinto and Savelyev, 2013)
- *Nurse Family Partnership* (Olds *et al.*, 1998)
- *Moving to Opportunity* (Katz, Kling and Liebman, 2001)

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**Source:** based on Farrington, Loeber and Welsh (2010) and Heckman and Krautz (2014).

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## Born or made criminal? A conceptual framework to understand criminal lives

Situational action theory (Wikström, 2012) proposes that a criminal event is the result of the interaction between the potential criminal and a situation that is suitable to commit a crime (e.g. a dark corner under no surveillance, where a group of friends meets up every night to drink beer). That is to say, a criminal is “an individual and his circumstances”. From this point of view, it seems natural to maintain that no one is born a criminal, as is also natural to think that those who become criminals are subjected to conditions that exert their influence since very early in their lives.

As explained in Chapter 1, to understand the individual and his circumstances, situational action theory starts from a “criminogenic situation” or “opportunity for crime” formed by the coincidence of individual factors (summarized in the concepts of crime propensity and criminogenic exposure) and environmental factors. This chapter focuses on individual factors.

**A criminal event is the result of the interaction between the potential criminal and a situation that is suitable to commit a crime.**

## **CRIME PROPENSITY**

Crime propensity is the tendency to recognize a possibility of breaking the law, and when recognizing it, to effectively seize on it (Wikström, 2009). It is a set of rules of conduct governed by knowledge, moral values and emotions, and the ability of self-control<sup>6</sup> in the presence of a motivation or opportunity to commit a crime.

A person with high crime propensity sees an opportunity to steal or assault where others do not. For example, in the midst of a verbal dispute over a traffic incident, a person with high crime propensity would consider physical violence as a way of dealing with the conflict. Or at a store unattended by its owner, he would consider stealing or breaking something. Furthermore, in these opportunities a person with high crime propensity tends to act more on impulse or habit than as a result of a rational process (à la Becker, 1968), in which the costs and benefits of committing a crime are compared. The formation of crime propensity depends on the accumulation of cognitive and non-cognitive (socioemotional) skills, similar to what happens with the more general concept of “capabilities” (Sen, 1985; Heckman and Krautz, 2014)<sup>7</sup>. Recent empirical evidence (Friehe and Schildberg-Hörisch, 2014) shows precisely that the higher the cognitive and non-cognitive skills, the lower the crime propensity<sup>8</sup>. The relationship between skills and crime propensity is partly mediated by the effects of skills on the capabilities of self-regulation and rational choice.

Given the relationship between non-cognitive skills and crime propensity, each individual or the people around them can make investments to reduce the latter by investing in non-cognitive skills, as is the case of investments in cognitive abilities. Figure 2.1 outlines the process of skill formation across key life stages, and shows the different actors who share in those investments at each one. Moreover, this figure also shows that the level of accumulated skills at a given stage plays a crucial role in deciding how much to invest for the next stage and in how the skill stock responds to a given amount of investment<sup>9</sup>.

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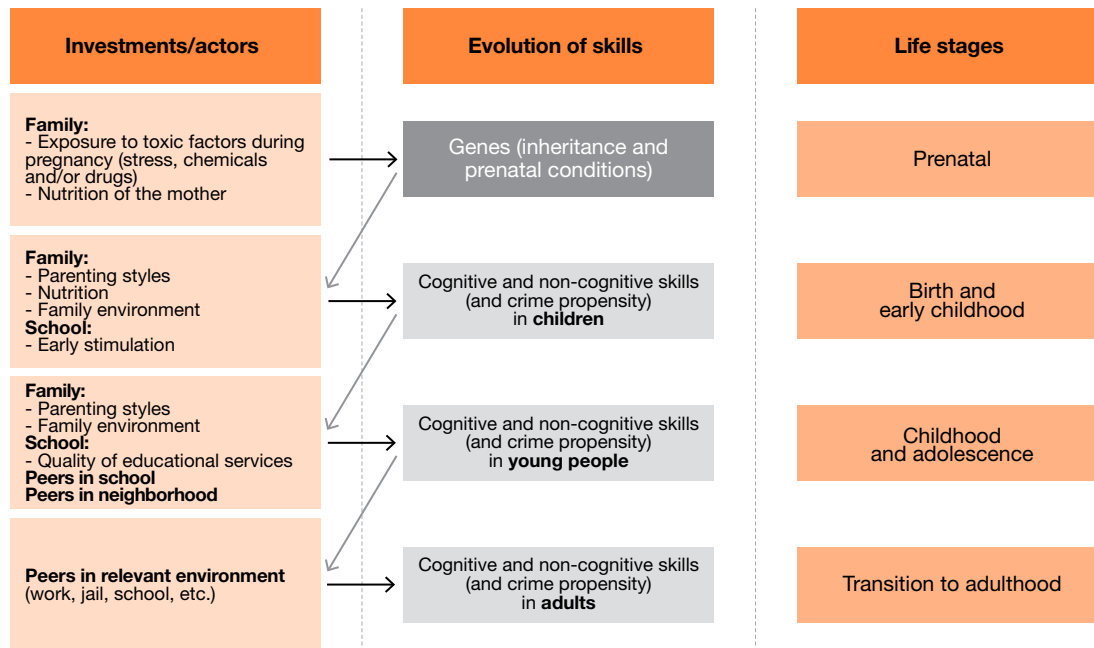
6. The ability of self-control can vary almost from one moment to the next, for example due to drug or alcohol intoxication or high levels of stress or violent emotions.

7. The distinction between cognitive and non-cognitive skills is often a mere theoretical construct, since given the high degree of interconnection in brain activity both types of skills are used simultaneously and can be mutually reinforcing (Heckman and Kautz, 2014; Lipina, 2006).

8. Personality psychology often includes five traits known as the “Big Five” among the non-cognitive skills explaining socioemotional development. The Big Five are conscientiousness, openness, extraversion, agreeableness and neuroticism (see eg Caliendo and Kritikos, 2012).

9. According to Cunha, Heckman and Schennach (2010), previous skills are very important for the technology of forming new ones, because of three characteristics of this technology: (1) self-productivity, which implies that the more skillful a person, the easier he acquires new skills through small investments; (2) static complementarity, which means that the more skilled a person, the more attractive it is to invest in him because the returns will be higher; and (3) dynamic complementarity, which implies that investments made today will increase the stock of future skills, making future investment more attractive.

**Figure 2.1** Skill formation throughout the life cycle



Source: Prepared by CAF staff.

However, skills are not malleable at any age. Several studies indicate that there are “critical” and “sensitive” stages in which sensory, language, other cognitive, and socioemotional skills are formed. Sensory, language, and other cognitive skills form during critical periods that close, sequentially and in that order, at a relatively early age (Bardin, 2012). This conclusion has inspired a body of literature that recommends making the bulk of the investments in their development in the first years of life (Heckman, 2006). That said, recent evidence (Heckman and Krautz, 2014, among others) suggests that the sensitive period for emotional skill formation closes much later, implying that investments to increase these skills in teenagers and adolescents can be profitable too.

**Crime propensity is the tendency to recognize a possibility of breaking the law, and when recognizing it, to effectively seize on it. The formation of crime propensity depends on the accumulation of cognitive and non-cognitive (socioemotional) skills.**

Table 2.1 (see p. 62), based on the evidence collected by different neuroscience subfields, shows the developmental milestones attained at each stage of life and which of these milestones are directly related to the formation of crime propensity.

In line with this evidence, the formation of crime propensity takes place throughout most of the lifespan. The critical period is during the first years of life. The periods in which it is still worth making specific investments to change it (i.e., the sensitive periods) extend up to the transition into adulthood.

**Table 2.1** Ages at which critical milestones of development and later development precursors appear

Stages of development	Developmental milestones and precursors	Directly related to crime propensity
Milestones of early development (from birth till 24 months)	Visual and auditory sensory development (from the first months to 4 years)	
	Development of certain language domains (first 10 months)	
	Development of taste preferences (first 3 months)	
	Development of basic traits of trust and attachment (first seen in between first 6-12 months of life)	X
Early onset precursors (preschool and early childhood) that affect subsequent developmental milestones	Internalization of compliance with adult requests, as a precursor to self-regulation through effort (first seen between the first 14 and 56 months)	X
	Development of a theory of the mind as a precursor to looking from another person's perspective (appears around 4 years of age)	X
	Understanding of the "wrong" in moral transgressions as a precursor to making moral decisions later in life (initially seen between 2.5 to 4 years)	X
	Perception categories based on language, as a precursor to learning vocabulary (about 18 months)	
	Differentiated imitation (of adults) through play (appears between 18 and 24 months)	X
	Development of an inner consciousness that inhibits aggressive outbursts as a precursor to self-regulation through effort (between 4 and 7 years)	X
Late-onset functions of development (childhood, adolescence, or adulthood)	Comparative evaluation of risks and rewards as a precursor to self-regulation through effort (between 12 and 20 years)	X
	Orientation to future goals and consideration of the long-term consequences of actions (11-17 years)	X
	Competence in interpersonal relationships, such as looking at things from the other person's perspective (12-15 years)	X
	Distinguish between effort and ability as determinants of success or failure (9-12 years)	X
	Cognitive skills, such as temporary memory (7-15 + years)	
	Cognitive skills based on learning, also called "crystallized intelligence" (with spikes in the middle of adulthood).	

Source: Wachs *et al.* (2014).

## CRIMINOGENIC EXPOSURE

Criminogenic exposure is the frequency with which people are surrounded by criminogenic environments. Not being inherent to the individual, but rather contingent on his physical and social environment, all the more reason to believe it can be changed.

A person's social interactions help understand why he may be more or less involved than other people in criminal activities<sup>10</sup>. How do these interactions play out?:

1. **Peer effects:** the interaction with certain peers may increase or decrease individual crime propensity, as suggested by the saying "one rotten apple spoils the whole bunch". Peers affect each other in terms of:
  - a. Information on the costs and benefits of crime.
  - b. Accepted and shared rules of conduct (role models and social learning).
  - c. Coercion to enter criminal activity.
2. **Self-selection in peer group formation:** people with high crime propensity tend to cluster in specific physical spaces. This concentration could enhance the incidence of crimes<sup>11</sup>.
3. **Social segregation:** in environments where social capital is scarcer (vulnerable communities) violence can replace other dispute resolution mechanisms (social disorganization theory), raising criminogenic exposure.

These three mechanisms are more or less present in all social groups. They are difficult to tell apart empirically (Manski, 2000), partly because they reinforce each other. Box 2.2 illustrates how crime propensity and criminogenic exposure can affect each other, based on statistics from a longitudinal study as well as life stories from ethnographic narratives.

### Box 2.2 Crime propensity and criminogenic exposure in life stories

Although crime propensity and criminogenic exposure are multidimensional and difficult to summarize in statistical measures, the authors of the longitudinal study PADS + (see Box 2.1) managed to quantify the number of crimes committed by young people in the town of Peterborough (U.K.) according to their propensity and criminogenic exposure (Figure 1). The study indicates that:

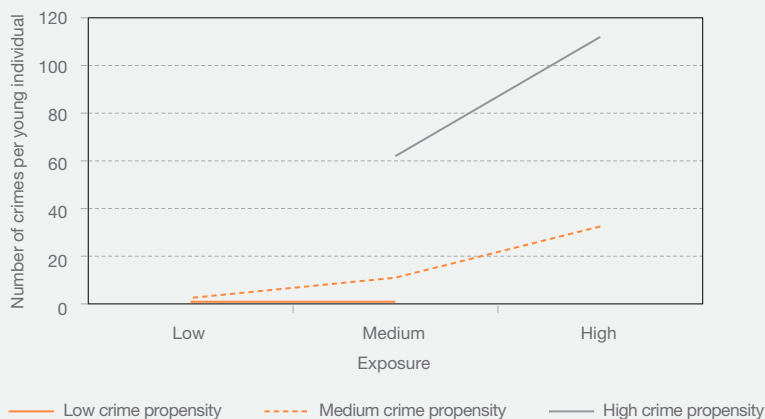
- **The levels of crime propensity and criminogenic exposure are not independent:** there are no youth with low criminogenic exposure and high crime propensity or youth with high criminogenic exposure and low crime propensity.
- **Crime propensity and criminogenic exposure reinforce each other:** in the context of criminogenic exposure the number of crimes increases faster among those with high crime propensity.

10. The effects of the physical environment on criminal activity are analyzed in Chapter 3.

11. The attraction to similarity, which is the reason why social interactions are established more quickly and more permanently between similar than between different individuals, is common not only among individuals who share high levels of crime propensity but also among those who share other skills or interests (Jackson, 2008).

**Criminogenic exposure is the frequency with which people are surrounded by criminogenic environments.**

**Chart 1** Number of crimes committed by young people according to their crime propensity and criminogenic exposure, according to PADS + in UK Study (2003-2007)<sup>a/</sup>



a/ The crimes are self-reported, and include ten types: shoplifting, stealing from people, burglaries, non-residential theft, theft from a car, car theft, vandalism, destruction of property, assault, and robbery. Crime propensity is measured by a set of indicators of adequate behavior (“morality”) and the ability of self-control. Criminogenic exposure is measured by a set of indicators on the frequency of rule breaking in the group of friends and the time spent in certain places (e.g., unsupervised time in risky places).

Source: Wikström (2009).

Separately, three ethnographic narratives drawn from Auyero and Berti (2013) provide some color on the relation between crime propensity and criminogenic exposure: the case of “Chaco” showing violent behavior at school (high crime propensity in a context of low criminogenic exposure); the case of Carlitos, who dies in an episode prompted by the behavior of his peers (high criminogenic exposure); and the case of Mario, a clear example of how crime propensity and criminogenic exposure feed back.

“Chaco” is a 13-year-old boy from Arquitecto Tucci (a town of Great Buenos Aires). His childhood was violent and full of material and emotional deprivations. He yells ‘I’ll shoot you to hell’ or ‘I’ll shoot you in the head’ to classmates as he pretends to have a gun in his hands. He knows about guns: ‘This is a 22’, he tells his teacher. ‘My uncle has a 22 and sometimes I come along when he goes to steal. I am the lookout’. The next day he tells her: ‘One day you’ll see me on TV. I’m going to rob a bank and they will shoot me to hell. You will see me, the police will kill me’.

On April 4, 2010, Carlitos was at home celebrating his 17th birthday when a friend of his dropped by to get him for ‘a walk in the neighborhood’. Carlitos did not want to go but his friend convinced him. Apparently they were armed. Carlitos was killed. A student of the school of Arquitecto Tucci told the teacher that he had many friends, and after he died he was carried around the block ‘like in a procession; and his eyes were open and you could see the bullet holes’.



'Let's talk about fears', said the teacher at the school of Arquitecto Tucci. Mario walked to the blackboard and wrote down what he was afraid of: 'to take up drugs'. Another classmate said 'to go to jail'. Two others said 'death'. Then Mario said 'it's like this' and wrote on the board: 'the street → bad company → drugs → prison → death'. 'It's a chain, Miss: on the street you mess up, you hang out with the guys, you try drugs, you like them and want more, and you start stealing to get high. One day you end up in jail. You stay four, five, six years, but the police abuse you. Or they kill you'.

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Source: based on Wikström (2009) and Auyero and Berti (2013).

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## CRIME AND GENDER

Crime and violence have a gender bias. The vast majority of offenders are male: their crime rate is about 10 times higher than that of women (DeLisi and Piquero, 2011). There are also important gender differences among crime victims: while men are more likely to be victimized by strangers, women are more likely to be victimized by someone from their immediate environment, especially their partners (Agüero, 2013).

The costs of crime are also different for men than for women. Overall, the violence suffered by women seems much more costly than that suffered by men, because its harm is amplified within the household as it permeates the physical and emotional health of the children (Agüero, 2013). Moreover, certain differences in the (social) behavior of men and women affecting the formation of crime propensity and criminogenic exposure make a gender perspective essential to the study of crime and the design of prevention policies.

**Crime and violence have a gender bias. The vast majority of offenders are male: their crime rate is about 10 times higher than that of women.**

## Preventing crime in time: interventions for different stages of people's development

In order to prevent crime it is essential to act in time and on variables subject to change. Luckily, both crime propensity and criminogenic exposure can be affected with timely policies.

Crime prevention depends crucially on the effectiveness of the proposed interventions. A paradigmatic example of the importance of assessing an intervention's effectiveness before applying it massively are such programs as "Scared Straight", intended for adolescents with risky profiles. Unfortunately, these programs were not only ineffective but also counterproductive, and ended up increasing crime rates among the treated individuals (Petrosino, Turpin-Petrosino and Buehler, 2004)<sup>12</sup>.

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12. More details on the impact of "Scared Straight" and similar programs can be found on page XX.

**Both crime propensity and criminogenic exposure can be affected with timely policies.**

Ignoring the effectiveness of policy measures is not an exclusive problem of crime prevention. In other public policy areas, several programs are often guided by just intuition or anecdotal evidence, too. Box 2.3 reviews the desirable characteristics to watch for in empirical studies that assess the effectiveness of policies or programs and which should be used in the design of public policy interventions in general and crime prevention in particular.

### **Box 2.3 Evidence-based interventions**

To make sure that a policy intervention is effective it has to be possible to compare what would have happened if the policy had not been carried out, i.e., it has to be possible to run a “counterfactual” exercise that makes it possible to attribute any observed changes in the variables of interest solely to the change in the policy and not to any other concomitant factors. This is why randomized impact assessments or quasi-randomized assessments—which make it possible to build such counterfactual exercises—are so important to provide credible evidence on the effects of a particular program. Using a mere “best-practice” playbook to guide decisions is not enough to predict the effects of new interventions, unless they are based on rigorous measurements with (in the impact assessment jargon) internal validity.

As in many other areas of public policy, in the field of criminology there have been efforts to collect evidence with acceptable levels of internal validity, which has been summarized in so-called systematic reviews, usually relying on meta-analysis techniques. As regards crime prevention measures, the systematic reviews collected in the series of The Campbell Collaboration and The Cochrane Collaboration, or on the website of the Blueprints for Healthy Youth Development (University of Colorado, Boulder) stand out. These reviews gather the evidence found by several empirical studies that follow certain patterns of scientific rigor, and also shed light, to some extent, on the mechanisms through which a given intervention may have worked well in one context and not so well or just badly in others. In other words, systematic reviews are a way to build partial “external validity” for the policy interventions analyzed. In addition, systematic reviews often include cost-effectiveness estimates, which is useful for choosing between alternative interventions.

That said, copy-pasting the programs that systematic reviews promote as effective or cost-effective does not always produce the desired results, because the quality with which any intervention is implemented will be conditioned by the idiosyncratic traits of its specific context. This is especially of note for less developed countries considering copying models of policies implemented in developed countries.

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**Source:** CAF staff.

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In recent years there has appeared more and more evidence on crime prevention programs, which not only make it possible to know more about timely and effective interventions but also gather a better understanding of the mechanisms that at each stage of life can affect crime propensity and criminogenic exposure. Possible interventions at different stages of life are reviewed below, as follows: (i) interventions from conception to the first years of life; (ii) interventions at school age; and (iii) interventions during the transition to adulthood.

## PREVENTING CRIME FROM THE WOMB TO THE FIRST YEARS OF LIFE

Children up to five years old do not commit crimes. But at this stage of life, which also includes their prenatal period, crime propensity begins to form, which is why it is an important window of opportunity for investments to reduce it. Furthermore, although it is impossible for greater criminogenic exposure to lead children of that age to commit crimes, it is likely for it to affect their stress levels and socioemotional development. Thus, interventions to moderate the criminogenic exposure at this stage will prevent crime to the extent that they succeed in reducing its influence in shaping crime propensity.

The first years of life are crucial for cognitive and non-cognitive development, due to both biological and environment issues. The main prenatal biological issues are low birth weight and/or poor nutrition of the mother during pregnancy; premature birth; exposure to toxic substances during pregnancy like nicotine or other drugs; and genetic factors. All these issues can affect the structure and functioning of the brain and condition the cognitive and psychosocial development of kids, mainly through their influence on self-regulation and stress-management skills, key determinants of crime propensity. Furthermore, nutritional deficiencies in young children are associated not only with cognitive impairment but also with behavioral problems, such as increased propensity for aggression (Tremblay, Gervais and Petitclerc, 2008). Box 2.4 discusses the importance of nutrition during the first 1000 days of life (from conception) for brain development and the consequent determination of cognitive and non-cognitive skills.

In recent years there has appeared more and more evidence on crime prevention programs.

### Box 2.4 Nutrition and brain development in the first 1,000 days

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Proper brain development depends largely on the adequate availability of nutrients such as iron, certain proteins, energy sources such as glucose, some types of fat, iron, zinc, copper, and folic acid. The lack of one or more of these nutrients can cause permanent changes in brain functioning, both due to changes in brain structure and genomic changes (e.g., epigenetics).

Different brain zones work in an interconnected manner but developing along different trajectories. When a given zone is developing more rapidly it needs specific nutrients the most. This is why the lack of a certain critical nutrient at a given age may cause more severe damage than the lack of the same nutrient at a different age, and this then affect the overall functioning of the brain.

Most brain development takes place in the first 1,000 days from conception, and that's when the shortage of nutrients can have an effect on the future. Adequate nutrition of the pregnant woman and the newborn or young child is essential to ensure a healthy functioning of the brain in the long run. But this is not enough. Proper processing of available nutrients depends on the metabolic capacity of the receptor, which may be low due to disease or stress (Box 2.5), also compromising brain growth.

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Source: Wachs et al. (2014).

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**Lack of nutrition and early stimulation are factors that can increase the crime propensity.**

Moreover, even for kids with optimal biological conditions, the characteristics of the social environment in their early childhood may influence their crime propensity. In these early years the ties between parents and children take form, and the children begin to understand and exert their individuality. They begin to talk, to explore the world around them, to assert themselves, and to extend emotional ties with people outside the family. A violent environment during this process can have devastating effects on children, either directly or through their parents, as the stress associated with these situations may affect their parenting<sup>13</sup>. In addition, the lack of appropriate early stimulation, or certain modes of hostile parenting such as mother-child denial and other forms of dysfunctional parenting may increase crime propensity<sup>14</sup>.

Recent research in the field of biosocial criminology lists the environmental factors that trigger neurophysiological, genetic, epigenetic, and psychological mechanisms affecting crime propensity during the first years of life. For example, Scott (2008) shows the neurophysiological effects of child abuse on neurotransmitter activity and response mechanisms to stress, which determines self-regulation and the ability not to make decisions on impulse in the future. Regarding the relationship between genetics and crime propensity, the review by DeLisi and Piquero (2011) documents not only the influence of certain genes on the formation of self-control but also the influence of environmental factors which, during pregnancy and early childhood, can affect the action of protective or promoting genes “epigenetically”. Finally, there are also purely psychological channels through which environmental conditions (e.g., the mother’s depression, according to Walker *et al.*, 2007) trigger behavioral problems in a child, which feed his proclivity to engage in criminal activities later in life. Box 2.5 summarizes the mechanisms by which excessive stress at early ages limits the capabilities to manage stress episodes later on.

**Box 2.5 Toxic stress in early life**

In the face of threatening situations, the brain activates automatic, neuroendocrine, metabolic, and immunological mechanisms that promote adaptation to new circumstances to ensure survival. This response is known as ‘allostatic load’ and causes changes in brain architecture. Prolonged exposure to stressful situations makes allostatic load “toxic”, preventing the cognitive and emotional regulation mechanisms that are activated in response to new threatening situations act in a balanced and coordinated fashion, becoming ineffective.

In particular, prolonged exposure to stress in early life, including pregnancy, predisposes the brain to allostatic overload, and implies increased vulnerability to stress in adolescence and adulthood. Exposure of a child (or of his mother during pregnancy) to family or community violence, family dissolution, economic instability or deprivation, repeated moves, or verbal or physical abuse, may cause him stress overload and trigger over-reaction to circumstances perceived as conflicting or threatening later on. For example, it may increase the frequency of negative emotional states such as anxiety or anger and exaggerate the perception of threat even in situations that are not really threatening. These effects limit the capacities to find peaceful solutions to conflict.

**Source:** Wachs *et al.* (2014) and Lipina (2006).

The lower the socioeconomic level, the greater the incidence of these risk factors, be they biological, genetic, or psychological, which limit the formation of emotional skills in early childhood and thus impact on crime propensity. For example, in a study for Guatemala, Walker *et al.* (2007) found that biological, psychological or socio-economic risk factors in the homes of children up to 3 years old reinforce each other and enhance their respective negative effects on the cognitive skills achieved through adolescence. This evidence suggests that environmental shortcomings enhance purely biological ones, supporting the recommendation to implement comprehensive interventions to maximize the potential development of children from early on.

**Excessive stress at early ages limits the capabilities to manage stress episodes later on, this phenomenon increases crime propensity.**

Many programs target early childhood, trying to alleviate the burden of social vulnerability on child development. They can be classified into three groups: 1) those that focus directly on the children; 2) those that support parents in parenting practices; 3) those serving the needs of both children and parents.

## **FOCUSING ON CHILDREN: NUTRITION AND EARLY STIMULATION**

During the first 3-5 years of life, children not only develop motor control but also the ability to wait, to express a need verbally, and to find solutions to problems. These skills are strengthened through early stimulation (Tremblay, Gervais and Petitcherc, 2008) and they are important to reduce crime propensity. Early childhood education programs can be “model” or more massive. Two paradigmatic examples of (expensive but high quality) model early stimulation interventions are the Perry and the Abecedarian programs, both in the United States.

The Perry program served children 3 and 4 years old in vulnerable communities, and who at the time of enrollment had an intellectual quotient (IQ) below that appropriate for their age. The intervention consisted of imparting pre-school education to these children for 2.5 hours per day, for two years, at a school especially prepared to deliver the proposed curriculum. Children were trained in social skills following a plan-do-review method, and worked to solve problematic situations in groups, guided by the teachers in charge.

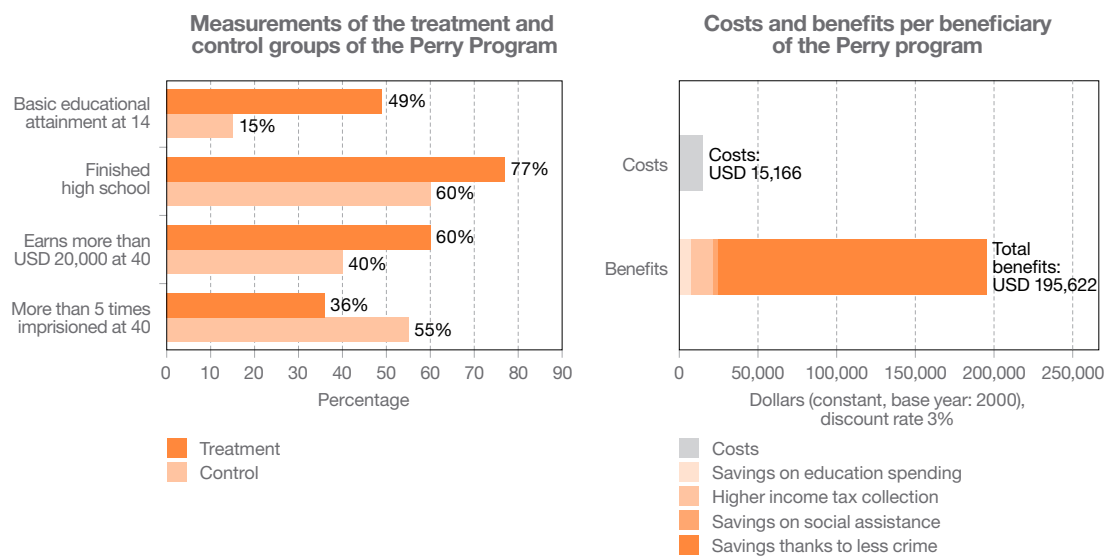
Although the Perry program did not improve cognitive abilities permanently as measured by IQ, it did achieve major changes in non-cognitive skills which, according to Heckman, Pinto and Savelyev (2013), explain its long term success in terms of higher educational attainment, higher earnings, and lower crime rates (Figure 3.a). Furthermore, the cost-benefit analysis of the Perry program showed a very positive result: a 13-dollar profit for every dollar invested (Schweinhart, 2005). Most of these benefits were due to the reduction in the crime rates of the beneficiaries (see right panel of Chart 2.3, p. 70).

Meanwhile, the Abecedarian program was much more intensive in many ways. It started earlier (at six weeks of age), lasted longer (up to third grade), and its pre-school component took all day instead of a few hours. The curriculum was based on a series of educational games focused on language, emotional skills, and cognitive development. It also included a health care component and the provision of a nutritional supplement.

**Early education model programs have shown to have high returns in the reduction of crime later in life.**

Contrary to the Perry case, Abecedarian did increase cognitive skills in a sustainable manner, but it was less successful in modifying socioemotional skills in the case of boys. This program achieved positive results in several dimensions, such as education, earnings, and health. In the case of crime, there were drops in different variables related to crime for the case of women but it was not as effective in the case of men.

**Chart 2.3.** Impact and cost-benefit analysis of the Perry Program



Source: Schweinhart (2005).

Separately, “Head Start”, also in the United States, is an example of an early childhood education program applied more universally. Its long-term results are also positive in many dimensions but more moderate than those of Perry or Abecedarian. The long-term effects on the crime rate of the participants are mixed, ranging from zero (Deming, 2009) to negative (decreasing the crime rate) as shown by Garcés, Thomas and Currie (2002). Another similar program, but which in addition requires the active participation of parents, the Chicago Child Parent Center (CPC), seems to have better results and reduce the crime rates among the youth who were beneficiaries when they were kids (Heckman and Kautz, 2014).

In Latin America, early childhood education programs are more recent and have been evaluated less frequently. One exception is the program *Hogares Comunitarios de Bienestar* (HCB, Community Homes of Welfare) in Colombia. While it is too early to understand its effects on crime, Attanasio, Di Maro and Vera Hernández (2013) show that it has achieved positive results in terms of, for example, children’s height. Meanwhile, Bernal (2013) found that the training of caregivers (mostly “foster mothers”) in the context of the HCB also produced positive results, this time in terms of children’s cognitive development.

## FOCUSING ON THE PARENTS: HOME TUTORING AND TRAINING IN PARENTING STYLES

Children who grow up with parents or caregivers who are unable to provide minimum requirements for containment and stability are deficient in their emotional development, which can lead to potentially criminal and antisocial attitudes (Doyle, 2008)<sup>15</sup>. Interventions or programs that focus on parents or caregivers aim at improving these conditions at home, strengthening parenting styles and alerting pregnant women or new parents about key issues to address in the early years of their kids' life<sup>16</sup>.

Problems related to parenting styles appear more frequently in poor families, not only due to scarce financial resources to bring up their children, but also because they live in more hostile environments and present higher incidence of teen parenthood. For example, in a study for Ecuador, Paxson and Schady (2007) show that the quality of parenting (how attentive parents are to their children, if they are able to provide appropriate responses to their needs, and how "tough" they can be) explains in part the correlation between socioeconomic status and children's cognitive development.

The idea behind conceiving these programs as crime-preventing tools is that good parent-child relationships and greater knowledge about the specific needs of early development can make it easier for children to incorporate self-control practices, which in turn regulate impulsive, aggressive, and confrontational behavior (Piquero *et al.*, 2008), i.e., limit the formation of the crime propensity in the long run.

These programs teach about basic nutrition and health needs during the first years of life and promote the use of assertive communication instead of physical or verbal abuse as tools to impart discipline. Their focus is usually on high-risk families, be this due to social vulnerability, teen parenthood or a history of family violence.

These interventions can be classified into two groups: tutorials arranged through home visits by professionals (such as nurses or social workers) and parent group training at neighborhood centers, schools, or health centers (without home visits). In Latin America, the program *Nadie es Perfecto* (Nobody's Perfect), part of *Chile Crece Contigo* (Chile Grows with You), belongs to the second group, and is a recent example of parent group training currently under assessment (Box 2.6). An important difference between the two types of interventions is their cost per family, which is considerably higher in the case of tutorials with home visits, limiting the possibility of scaling them up to cover large numbers of families (Galasso *et al.*, 2012)<sup>17</sup>.

15. A hostile home environment can affect even unborn children, as remarks Aizer (2011) in her work on pregnant women subject to domestic violence, who give birth to children with lower weight (a notable predictor of cognitive and socioemotional development).

16. They are also intended to assist parents facing a negative contingency, such as separation or natural disasters affecting the house.

17. Parent group training like *Nadie es Perfecto* cost about a tenth of the cost of a mentoring program with home visits. Although their expected effects on certain child development metrics are also smaller, their cost-effectiveness would be between 2.5 and 5 times higher than that of the visits (Carneiro *et al.*, 2013). In addition, an intensive version of *Nadie es Perfecto*, including interactive sessions with the children, would improve the magnitude of the effects more than it would increase the costs, resulting in cost-effectiveness between 4 and 9 times higher than that of a traditional home visitation program (Carneiro *et al.*, 2013).

**In Latin America, early childhood education programs are more recent and have been evaluated less frequently.**

**Interventions or programs that focus on parents or caregivers aim at improving these conditions at home, strengthening parenting styles and alerting about key issues to address in the early years of their kids' life.**

Miller, Maguire and Macdonald (2012) reviewed the results of multipurpose programs to improve parenting practices that rely on home visits. They find positive effects on the emotional development of children in the short term albeit zero impact on their cognitive abilities.

Piquero *et al.* (2008)<sup>18</sup> review the results of programs for parents with children under 5 that, while implemented in different physical environments (home, school, etc.), share the focus on preventing crime and violence among the children. They conclude that they have very positive results, reducing the behavioral problems of the children of treated parents<sup>19</sup>.

## **FOCUSING ON CHILDREN AND PARENTS: COMPREHENSIVE INTERVENTIONS**

Several interventions focusing on both children and parents show encouraging results in the short, medium, and long terms. These programs include various components that contribute to the full (physical and emotional) development of children and their families. A signature example is the Nurse Family Partnership (NFP), which assists low-income pregnant women from the prenatal period and to the first two years of their child. Evaluations show how profitable it is to support children along with their parents from as early as possible: NFP reduced risky behaviors in mothers and children (as measured when they became teenagers), improved cognitive and non-cognitive skills in children (e.g., reduced behavioral problems, anxiety and depression) and reduced children's involvement in criminal activities in adolescence and the transition to adulthood (Olds *et al.*, 1998; Heckman and Kautz, 2014).

Although the evidence on the impact of such interventions in Latin America is much scarcer than in developed countries, studies in Chile (Aracena *et al.*, 2009) and Jamaica (Walker *et al.*, 2011) report promising results.

In the case of Chile, Aracena *et al.* (2009) evaluated a program of visits to teen-parent homes by agents specially trained in health education. The visits began in the third trimester of pregnancy of future mothers aged 14 to 19, and continued until the children turned one year old. The results point to improvements in the mental health and nutrition of mothers and in the language development of children. However it is still early to assess impacts related to criminogenic behavior, which shall materialize in the longer term.

The Jamaica study estimated the effects of a program focusing on both children and parents, providing food supplements and/or early psychosocial stimulation for two years. The stimulation module consisted of a weekly home visit by a social worker, who would educate the mother in techniques of early stimulation

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18. The systematic review by Piquero *et al.* (2008) belongs to the series of The Campbell Collaboration and analyzes the results of 55 randomized impact evaluations, mostly in developed countries.

19. A previous systematic review of 19 randomized studies of interventions focused on the family or the parents but not necessarily in early childhood (Welsh and Farrington, 2003) also found a relatively large average effect size, with a re-offense rate 16 percentage points lower in the treated group (34%) than in the control group (50%).



through play, and resources to improve the mother-child bond and enhance the self-esteem of both. The study estimated the effects of the program not only on the psychophysical skills of the beneficiaries but also on their violent behavior in adulthood. While the positive effects of the food module on growth faded away as time passed, the stimulation module produced lasting improvements in the psychosocial functioning of the children as they reached adulthood; they participated in fights or showed otherwise serious violent behavior less frequently and they showed lower levels of depression and social inhibition.

**Group training programs for parents of low socioeconomic status take place at educational or health centers.**

### **Box 2.6 Training parents in vulnerable settings in Chile through *Nadie es Perfecto***

*Nadie es Perfecto* (NEP) is a group training program for parents of low socioeconomic status, belonging to the national training program for early childhood *Chile Crece Contigo* (CCC). It is structured in the form of workshops teaching parenting skills to parents and caregivers of children aged 0 to 5. Six to eight sessions cover the basic topics: (i) child care, (ii) non-physical disciplinary strategies, (iii) monitoring the safety of the child, (iv) child nutrition, (v) self-care, and (vi) building learning environments. Each topic includes: a) clear goals and key messages, b) group dynamics, c) supporting materials for facilitators and books for parents, d) homework. The workshops are run by professional facilitators and follow the methodology of the Canadian program Nobody's Perfect. The sessions are weekly, last about two hours, and take place at the health center regularly attended by CCC beneficiaries. Childcare services are provided to make attendance easier for the 8-12 parents forming each group.

NEP has been in place since 2010, when it began to gradually expand into different areas. A randomized impact assessment of the program is underway, in the monitoring phase. The assessment will explore the benefits of incorporating interactive sessions with children into the parent workshops, which appears to be cost-effective and easily scalable.

**Source:** Carneiro *et al.* (2013) and Galasso *et al.* (2012).

## **PREVENTING CRIME IN CHILDHOOD AND ADOLESCENCE**

School age (between 6 and 18 years old or so) is another vital stage in the socio-emotional development of children and teenagers, as they relate to the world not only through their families but also through their schools and communities or neighborhoods. This is why at this stage it is possible to affect not only crime propensity but also criminogenic exposure.

Moreover, at this stage, individuals begin to make a more intense use of emotional skills like self-control, impulse management, and negotiation and compromise amid conflict, to achieve a harmonious social integration. The more violent or criminogenic the child's environment, the more desirable it is to count on these skills. Unfortunately, the development of these skills among individuals from vulnerable environments is far from thorough, in part because of disadvantages hauled from early childhood. Lower levels of emotional skills along with a high exposure to conflict may explain why many young people

**Several interventions focusing on both children and parents show encouraging results in the short, medium, and long terms.**

resort to violent or evasive behavior (e.g., running away, taking up drugs or alcohol, etc.) as a way to overcome difficulties in their relationships with family or peers.

During this stage, various interventions can shape crime propensity and criminogenic exposure, focusing on: 1) the family, 2) the school, and 3) the community.

## **FOCUSING ON THE FAMILY: REDUCING THE INCIDENCE AND IMPACT OF DOMESTIC VIOLENCE**

Domestic violence is a big problem in Latin America. For example, it prevails with different levels of severity in 40% of households in countries such as Peru and Colombia (Agüero, 2013). Domestic violence is a major cause of stress and physio-neurological dysfunctions among children (Scott, 2008) and, therefore, experiences of violence at home feed crime propensity and promote a culture of violence in future relationships within or beyond the family.

Longitudinal studies as well as ethnographic works following criminal lives consistently find a history of family violence<sup>20</sup>. Meanwhile, data from the Comparative Study of Prison Population UNDP (2013) show that a high percentage of prisoners in Argentina, Brazil, Peru and El Salvador reported histories of family violence and other features of dysfunctional family environments (Table 2.2).

**Table 2.2** Self-reported indicators of family conflict among surveyed inmates in several countries

Variable	Argentina	Brazil	Peru	El Salvador	All the countries
Percentage who left home before the age of 15	38.5	28.0	36.3	37.5	37.3
Percentage who was beaten by their parents or caregivers	29.1	34.3	43	37.4	37.4
Percentage who said that his father or mother's partner would beat his mother	25.7	34.8	42.4	27.8	33.8
Percentage who said they were able to count "very little" or "nothing" on their parents or guardians	13.1	8.6	27.2	19.7	19.0

**Source:** UNDP (2013).

20. Auyero and Berti (2013) show how the "limits" of domestic violence (supposedly restricted to the household) can become blurred and result into a single form of violence governing the entire behavior of those who have been victims of this type of abuse/crime.

Furlong *et al.* (2012) reviewed the results of anti-domestic violence programs based on Cognitive Behavioral Therapy (CBT) for parents of at-risk children aged 3 to 12. This type of therapy assumes that behaviors are learned: people living under anxiety or stress begin at some point in their lives to systematically (and mistakenly) associate neutral stimuli with traumatic events, so that every time they face neutral stimuli they respond as if they were provocations or threats. Furlong *et al.* (2012) conclude that these programs improve parenting practices and reduce children’s behavior problems in the short term. Moreover, they appear to be relatively inexpensive for the benefits involved. However, the evidence on their long-term effects is still scarce.

**Domestic violence is a big problem in Latin America. For example, it prevails with different levels of severity in 40% of households in countries such as Peru and Colombia.**

### FOCUSING ON SCHOOL

School, traditionally regarded as an institution of social control, has played a central role in the theory of crime prevention for decades. However, its importance today has other edges, since the processes that take place within schools have changed, becoming more complex and probably more criminogenic, including the prominence of intra-school violent phenomena (e.g., bullying).

The effects of schooling on crime can be classified according to the time horizon in which they are expected to play out. Table 2.3 summarizes the channels through which schooling operates in the short, medium, and long terms.

**Table 2.3** Factors that link schooling with crime

Short-term factors	Medium-term factors	Long-term factors
<p><b>Incapacitation:</b> it could have a negative effect on crime, reducing criminogenic exposure because school hours are moments of supervised activities by competent adults with the authority to prevent the commission of crimes.</p>	<p><b>Risky peers and practices:</b> classmates usually make a better environment as far as criminogenic exposure is concerned, than those that can be found on the streets (especially in vulnerable communities). The effect of peers can reduce practices such as alcohol or drug abuse or other risky behaviors associated with the entry to crime.</p>	<p><b>Investment in human capital:</b> Increases the (cognitive and non-cognitive) skills valued in the workplace, thus reducing the relative return of criminal activities.</p>
<p><b>Concentration of young people:</b> the confluence of many young people in one place could increase the amount of "volatile" interactions between them, increasing criminogenic situations.</p>	<p><b>Non-cognitive skills:</b> provision of tools to manage stressful situations and reduce temperamental reactions when making important decisions (development of self-control, etc.)</p>	
<p><b>Plan coordination:</b> when young people gather in a given space and time it is easier for them to coordinate the crimes that could be committed outside the supervised hours.</p>		
Keys to reducing crime through (traditional) schooling		
<p><b>Adequate supervision and motivation</b> for the completion of tasks related to formal education such as studying.</p>	<p><b>Optimal assignment of peers and complete education</b> (which includes the development of non-cognitive skills).</p>	<p><b>Quality education,</b> which increases the market value of the cognitive and non-cognitive skills acquired at school.</p>

Source: Prepared by CAF staff

**A high percentage of prisoners in the region reported histories of family violence and other features of dysfunctional family environments.**

What does the evidence say about these effects? With respect to short-term effects, the most studied one has been “incapacitation”, which operates by simply foreclosing the possibility to commit crimes while at school, i.e., it is a mechanism that only works during school hours. Berthelon and Kruger (2011) find an incapacitation effect in Chile, where after an extension in school hours there was a drop in property offenses and violent crimes. In particular, they find that a 20% extension of school hours causes a drop between 11% and 24% (depending on the type of crime) in juvenile delinquency. Anderson (2010) and Machin, Marie and Vujić (2011) find something similar after an increase in the years of compulsory education in the U.S. and the U.K., respectively. Lefgren and Jacob (2003) also document an incapacitation effect from changes in the amount of effective school days in the United States<sup>21</sup>.

Meanwhile, the study of Jacob and Lefgren (2003) also found evidence of a “concentration” effect of criminal action. To mitigate it they recommend improving student supervision as well as providing the incentives and motivations that keep students interested and engaged in positive activities. Otherwise they do not find a “coordination” effect.

Regarding the medium-term effects of schooling, Deming (2011) analyzes the case of a school district in North Carolina (USA) and shows how, due to a quality-of-peers effect, schools providing higher quality education reduce the incidence of crime. Chioda, De Mello and Soares (2012) also point to the influence of peers as the main reason why crime decreased after an expansion of the program *Bolsa Família* in Brazil, which increased the enrollment rates among beneficiaries.

As for schooling’s role in the formation of socioemotional skills in the medium term, the evidence is scarce. However, the high efficiency of small-scale high-quality interventions based on cognitive-behavioral therapies has recently been documented. In particular, an intervention of this type called “Becoming a Man”, targeting adolescents from vulnerable settings in schools of dangerous areas of Chicago, not only managed to reduce participation in violent acts by 44% (Heller *et al.*, 2013) but also, when complemented with academic support, increased school performance significantly (about half a standard deviation of the national distribution) and reduced the percentage of drop-outs almost by half (Cook *et al.*, 2014). Although the combined procedure is expensive (around USD 4,000 per student), these promising results speak for high social returns.

Meanwhile, Piquero, Jennings and Farrington (2010) review the results of different types of interventions aimed at developing self-regulation skills in children up to 10 years old –the threshold of the most sensitive period to develop these skills according to the pioneering study by Gottfredson and Hirschi (1990). The authors find that these interventions are especially effective when they are focused on high-risk kids, when they have a reasonable duration (one year) and when they are administered in weekly sessions.

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21. Camacho and Mejia (2013a) analyze the schooling “induced” by the Colombian conditional cash transfer program “Familias en Acción” (Families in Action): they do not find evidence of an incapacitation effect on crime reduction though they do find drops in the incidence of crime via an income effect.

Regarding long-term effects of schooling –human capital formation– there is broad consensus that providing high quality education improves job opportunities, which in line with rational choice models (Becker, 1968 and subsequent developments) should reduce criminal involvement. In addition, greater human capital can enhance the capabilities for ordering, planning, and comparing the costs and benefits of different action courses, all of which help make better decisions at crucial moments, such as in criminogenic situations.

**Anti-bullying programs at school can be very effective, reducing the number of incidents of bullying about 20%.**

## BULLYING

Beyond these effects, today's schools face new challenges to control intramural violence, which may unleash disorders involving risky behavior for health or crime entry later on. The project *Niños del Milenio*, in Peru, showed that those who were victims of bullying as children or adolescents, were 1.6 times more likely to smoke cigarettes, 1.6 times more likely to drink alcohol, and 2.2 times more likely to have had sexual intercourse by an early age than all other children (Crookston *et al.*, 2014).

Several papers review the results of interventions to reduce violence at school, especially bullying<sup>22</sup>. Ttofi and Farrington (2011) collect evidence of 44 such interventions in developed countries and show that anti-bullying programs at school can be very effective, reducing the number of incidents of bullying about 20%. They find the most effective interventions to be those applied more intensively and including parent meetings, firm disciplinary methods, and careful supervision during breaks. Furthermore, the authors find that modules involving “working with schoolmates”, which were included in various programs, tend to increase bullying rather than reduce it.

However, because the results of Ttofi and Farrington (2011) refer to developed countries and to programs involving the use of sophisticated technological resources often lacking in Latin American schools, it is possible that their conclusions do not apply in the region. In contrast, Klevens *et al.* (2009) analyzed two interventions in public schools of Pereira (Colombia), which are inexpensive and tailored to the local realities. The first intervention consists of training teachers in classroom management techniques and training students in pro-social behaviors. The second intervention complements the first one with weekly parent meetings<sup>23</sup>. Both interventions were successful in reducing aggression and improving pro-social behavior. Furthermore, the combined intervention was a little more effective, with the highest gains being observed among male students. Box 2.7 reviews the evidence on the program *Aulas en Paz* (Classrooms in Peace), also in Colombia, which has also managed to reduce aggressive conduct and improve pro-social behavior in students through training in citizenship.

22. The definition of bullying includes several elements: physical, verbal, or psychological attacks; intimidation with the purpose of causing fear or suffering; (physical or psychological) force imbalance exerted by a child or adolescent against a weaker peer; and incidents repeated over a long period of time between students (Ttofi and Farrington, 2011). The issue of bullying is also related to the so-called “irregular gangs”, which according to a report by the OAS (2007) are semi-structured, short-lived, small- to medium-sized groups (15 to 40 members), which form mainly at school or in its vicinity. Their members range from 13 to 18 years old. Crime not being their *raison d'être*, their confrontations occur at school or in its vicinity and consist of minor offenses such as extortion or intimidation.

23. Oliver *et al.* (2011) review specific interventions on teachers involving classroom management techniques to reduce school violence. The studies refer to developed countries (11 studies refer to the United States and one to the Netherlands) and the results also suggest reductions in the incidence of disruptive behavior in the classroom.

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**Box 2.7 Aulas en Paz and the reduction of school violence**


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The program *Aulas in Paz*, carried out by the NGO *Convivencia Productiva* (Productive Coexistence) and *UnianDES* (Colombia), promotes the development of citizenship skills in schools of areas affected by violence. Targeting students from 2nd to 5th grade, the program was initially developed as a pilot project and gradually expanded to 27 public schools in 15 municipalities in four regions.

It is based on three components: Classroom, Family and Heterogeneous Groups. The Classroom component consists of 40 one-hour sessions per year targeting students. The Family component consists of workshops and home visits (the workshops take on a preventive approach in four sessions per year with parents or guardians, to improve their parenting style and their handling of discipline and family care; and the home visits focus on families of children with problems of extreme aggression). The Heterogeneous Groups component consists of 16 group role-playing sessions bringing together two students identified as the most aggressive ones with four students identified as the most pro-social ones, under the supervision of an adult facilitator.

Ramos, Nieto and ChauX (2009) and ChauX, Arboleda and Rincón (2012) have assessed the impact of *Aulas en Paz* and indicate it is successful in reducing violent behavior and improving pro-social conduct.

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**Source:** based on ChauX, Arboleda and Rincón (2012); Ramos, Nieto and ChauX (2009) and Frühling (2012).

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## EXTRA-CURRICULAR EDUCATION AGAINST VIOLENCE

In the extracurricular field, not necessarily linked to formal education, Latin America stands out as an innovative region in terms of large-scale prevention programs, especially in the case of cultural and sporting interventions. As example of the former, the system of youth orchestras in Venezuela (*El Sistema*, currently funded by the Venezuelan State and conceived in 1975 by the musician José Antonio Abreu), has become a successful model internationally, bringing together tens of thousands of young people in musical activities and other training aimed at social inclusion and violence prevention. Although no randomized impact assessment is available yet, the results appear promising<sup>24</sup>.

As for interventions that use sport as a means to target the youth at risk, the soccer program for social inclusion called “SOMOS” (Perú) stands out. It is led by Cantolao and the Right to Play foundation and supported by CAF. There is currently a randomized impact assessment underway to measure its impact on the habits and emotional skills of its young beneficiaries.

Other new and promising interventions in Latin America are *Abriendo Espacios* (Making Room) and *Escuela Abierta* (Open School) in Brazil. These programs consist of opening more than 4,000 public schools in all regions for sports and cultural

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24. The IDB is financing a randomized impact assessment of *El Sistema*, the results of which will become available in a few years.

activities throughout the weekend, benefiting about four million people at a very low cost per person (one to two dollars). This type of program is in pilot stage in other countries such as Argentina, Honduras and El Salvador. Moestue, Moestue and Muggah (2013) suggest that such programs have managed to reduce violence at school and in their surrounding environment.

On the other hand, a type of extracurricular activity that proved not just ineffective but actually counterproductive has been that designed to warn or scare young people with behavioral problems by taking them to visit prisons and talk to prisoners, as in the Scared Straight program. Such interventions, as analyzed by Petrosino, Turpin-Petrosino and Buehler (2004) and Petrosino, Turpin-Petrosino and Buehler (2013), do not reduce crime rates among young people and in most cases increase them.

Finally, Box 2.8 reviews some other extracurricular interventions aimed at preventing the incidence and alleviating the consequences of sexual violence against adolescents, some of which are also implemented in schools.

**A type of extracurricular activity that proved not just ineffective but actually counterproductive has been that designed to warn or scare young people with behavioral problems.**

### **Box 2.8** How to reduce and alleviate the consequences of sexual violence against adolescents

While it is difficult to obtain reliable statistics on sexual violence, particularly when perpetrated against minors, it is known that people close to the victim usually commit most of these crimes. The long-term consequences of having suffered sexual violence at an early age are very serious, and include depressive disorders, risky sexual practices, STDs and teen pregnancy (Scott, 2008). But aside from the abuses that occur within the family, abuses among peers are also common in the region, seemingly bearing much influence from role models typically associated with sexuality, i.e., the socially accepted ideas of masculinity and femininity.

Ricardo and Barker (2011) review 65 studies on teen sexual violence prevention programs implemented in developed, developing, and poor countries. They conclude that it is vital to prevent sexual violence before young women become sexually active, i.e., before adolescence, since it is around this time when the youth begin exploring the dynamics of romantic relationships and building gender identities, and it is also when the first events of sexual violence are usually observed. They also conclude that effective prevention should address cultural norms that “normalize” intimate violence as an extreme expression of masculinity and should provide potential victims with tools such as the ability to communicate effectively when facing the threat of sexual assault. However, although the authors find a change in the attitudes and the declared condemnation of sexual violence as a result of the programs, they do not document reductions in violent practices. Ricardo (2010) reports similar results for the H program—a program against gender violence replicated in several cities of Latin America by the NGO *Promundo*.

Macdonald *et al.* (2012) review the results of interventions based on cognitive-behavioral therapy (CBT) to help minors who were victims of sexual violence and their non-abusive family members deal with the psychological consequences of abuse (e.g., depression, post-traumatic stress disorders, and anxiety). They document positive effects, although moderate on average.

**Source:** based on Scott (2008), Ricardo and Barker (2011), Ricardo (2010), and Macdonald *et al.* (2012).

## FOCUS ON THE NEIGHBORHOOD: MORE OR LESS TARGETED INTERVENTIONS IN TROUBLED COMMUNITIES

The most vulnerable neighborhoods tend to have high crime rates, but it is difficult to know whether this is because poverty engenders crime, or because these neighborhoods have lower levels of collective efficacy to protect against crime, or because of the “multiplier” effect or “contagion” of criminal activity, generated by the repeated presence of criminogenic situations (high criminogenic exposure).

Gaviria (2000) and Glaeser, Scheinkman and Priest (1996) explore theoretically the effect of contagion due to greater criminogenic exposure on adolescent participation in criminal activities; and several authors manage to quantify that effect empirically. For example, analyzing the case of communities in the United States, Aizer (2008) finds that the most disadvantaged neighborhoods in terms of education, employment, and income level are also the most violent; and after deducting the impact of individual vulnerabilities, this can be traced solely to the effect of criminogenic exposure. Meanwhile, Damm and Dustmann (2013) exploit a natural experiment in Denmark resulting from the quasi-random assignment of refugee immigrant families to neighborhoods with different levels of violence between 1986 and 1998. They found that exposure to violent neighborhoods increases the future criminal behavior of the children brought up in these neighborhoods.

Now, it is hard to change all the conditions of a neighborhood at the same time, as did for example the program Moving to Opportunity, described in Box 2.9. Therefore, several interventions have been designed to make one step at the time. For example, Mockus, Murrain and Villa (2012) outlined interventions to build up “collective efficacy” in the whole community in order to limit criminogenic situations. Other interventions put more emphasis on dysfunctional groups within the neighborhood (e.g., gangs) or on problems that are particularly important among young people in the neighborhood (e.g., drug and alcohol).

### **Box 2.9** Effects of Moving to Opportunity

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Moving to Opportunity (MTO) was an ambitious housing program kicked off in the United States in 1994. It consisted of giving 4,600 low-income families who lived in state-owned residences the opportunity to move to neighborhoods of higher socioeconomic status. Potentially beneficiary families were randomly assigned to three groups: the first group received a voucher that could only be used to move to neighborhoods with low levels of poverty, the second group received a voucher to be used in any neighborhood, and the control group did not receive anything. This experimental design made it possible to undertake two impact assessments: a mid-term assessment (4 to 7 years after the draw) and a longer term assessment (10 to 15 years after the draw).

In their mid-term assessment, Kling, Ludwig and Katz (2005) and Kling, Liebman and Katz (2007) find large reductions in violent crimes, both amid young men and women, but the contrasting effect in other risky behaviors, including property crimes, which decreased among women but worsened among men. They also corroborate that beneficiaries were living in less poor and safer



areas, an effect that was attenuated in the long run. Quigley and Raphael (2008) argue that relocation benefits offered by MTO were not as large since, five years after the draw, beneficiary families went to live in neighborhoods located, on average, in the 96 percentile to live in neighborhoods located, on average in the 88th percentile of the distribution of poverty rates.

In their long term assessment, Ludwig *et al.* (2013) find improvements in some health indicators among the adults of the household --particularly in the incidence of obesity, diabetes, and physical limitations or disabilities, and mental health indicators such as depression and stress--albeit not in other health indicators, such as hypertension and the self-reported health state. They also report that beneficiaries felt more secure in their neighborhoods and were victimized less frequently. However, they find no improvements in the ability of households to support themselves economically.

With respect to the young people in the household, Ludwig *et al.* (2013) find no improvements in physical health indicators, but some improvements in the mental health indicators of women, particularly in their stress levels and the incidence of psychological disorders such as panic attacks or oppositional defiant disorder. The authors also find improvements in the incidence of problematic behavior and the frequency of arrests, but not in academic performance in math or language. Clampet-Lundquist *et al.* (2011) argue that the gender differences in the findings could be traced to young women having adapted better than young men to the new environments, due to their greater ability to make new friends and interact with peers and the distance of the father figure (since most beneficiary households had a female head of household).

Overall, the impacts on crime were found to be lower in the long-term assessment. One interpretation of this result is that many families moved back to poorer and less safe neighborhoods over time. Hence, two important lessons are extracted: (1) it is not easy to relocate families from poor neighborhoods to less poor neighborhoods, because families can return to the neighborhoods with lower socioeconomic status for reasons that transcend housing costs (this would also explain why only 48% of those drawn to the first treatment and 63% of those drawn to the second treatment actually used the vouchers); (2) the district in which young people live at any given point seems to have more influence on their decisions to commit a crime than the neighborhood where they grew up (Sciandra *et al.*, 2013).

## COMPREHENSIVE (NON-TARGETED) INTERVENTIONS

These interventions have sought to prevent crime through two channels: 1) redesigning the physical environment and 2) developing social capital.

### *Environmental design*

Policies of Crime Prevention Through Environmental Design (CPTED) seek to reduce opportunities for crime in specific areas of a community. Generally handled at the local or municipal level, these policies aim to improve the physical and environmental infrastructure, such as transportation facilities, community health facilities, lighting in public open spaces, and public parks. Since they focus on the physical environment rather than on people, they are dealt with in greater detail in Chapter 3.

### ***The development of social capital***

Policies of crime prevention through the development of social capital in the community rely on the idea that collective efficacy is an important determinant of crime (Sampson, Raudenbush and Earls, 1997). The idea is to rebuild social cohesion within communities to strengthen formal and informal institutions, using participatory approaches to build trust among key stakeholders of the neighborhood and identify the security needs of the community. Examples of this type of policy have been the programs implemented in Bogota under mayor Antanas Mockus to promote a civic culture that avoids the use of violence to resolve conflicts (for more details see Chapter 3 or examples in Mockus, Murrain and Villa, 2012).

In addition, greater social cohesion can contribute to greater security by enabling a successful implementation of other specific interventions, such as control strategies with community policing (see Chapter 5) or programs focused on vulnerable subpopulations. Indeed, a more cohesive society can validate public or third-sector policy interventions, participating actively in the design, implementation and accountability associated with these interventions. Box 2.10 highlights the program *Paz Activa* (Active Peace) in Chile as an example of an intervention that tried, first, to generate cohesion locally, and only then carry out specific programs more successfully.

#### **Box 2.10 The experience of *Paz Activa* in Chile**

*Paz Activa* is a pilot intervention led by the NGO *Fundación Paz Ciudadana* (Citizen Peace Foundation) in the district Héroes de la Concepción, in the municipality Recoleta in Chile. It promotes social inclusion in vulnerable neighborhoods, following the design of the program Communities That Care (CTC), implemented in communities or neighborhoods of the United States to prevent juvenile behavioral problems by involving the community and promoting intersectoral action (Munizaga, 2009).

*Paz Activa* has several stages: a leader is recruited to guide the process and help identify the key actors in the community; training is given to key people; a “community directory” is established to monitor the implementation of the intervention; statistical information (field surveys) is collected to identify risk factors affecting the youth; and specific intervention strategies for each risk factor are chosen. Finally these interventions are implemented, together with monitoring and evaluation systems that make it possible to recalibrate the action plan if necessary (White and Varela, 2011).

Although there is no rigorous evaluation of *Paz Activa*, the evaluation of Communities That Care undertaken by Hawkins *et al.* (2012) suggests that such comprehensive and participatory intervention strategies can be effective in reducing risky and/or criminal behavior among young people.

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**Source:** Prepared by CAF staff.

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### **TARGETED INTERVENTIONS**

These interventions have focused on specific problems or risk groups, such as drugs and alcohol problems or gangs, respectively.

**Drugs and alcohol**

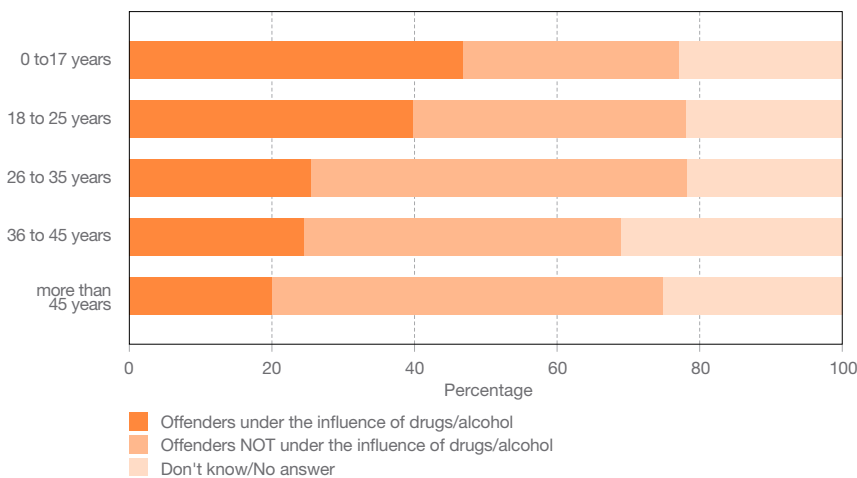
The problematic use of alcohol and illicit drugs is associated with a higher rate of crime. According to Goldstein and Brownstein (1987) problematic use of psychoactive substances increases the likelihood of being both victim and victimizer, through three channels. The “pharmacological channel” operates when alcohol or drugs lead to the use of violence by limiting self-control and the ability to process information to make rational decisions in a conflict. It also operates on potential victims by reducing alertness to danger and thus promoting exposure to hazardous situations. The “economic channel” operates when the need to get money to fund an addiction leads to crime. The “systemic channel” operates when members of organized drug micro-traffic networks use violence in the context of territorial disputes<sup>25</sup>.

**The CAF survey, shows that between 20% and about 50% of crime victims who got to see their victimizer/s think the latter were under the influence of alcohol or drugs at the time of the assault.**

Chart 2.4, based on data from the CAF 2013 survey, shows that between 20% and about 50% of crime victims who got to see their victimizer/s think the latter were under the influence of alcohol or drugs at the time of the assault. In addition, the percentages decrease with the perceived age of the victimizer/s, suggesting that young offenders act more often under the influence of these substances.

Meanwhile Table 2.4 (see p. 84), based on prison population data from UNDP (2013) notes that the average age of initiation into marijuana use among detainees is less than 16 years old, on average, for the countries included in the study.

**Chart 2.4** Answers of crime victims in Latin American cities to whether the offenders acted under the influence of psychoactive substances (2013)<sup>a/</sup>



a/ Cities: Buenos Aires, La Paz, Santa Cruz, San Pablo, Rio de Janeiro, Bogota, Medellin, Quito, Guayaquil, Montevideo, Panama City and Caracas.

Source: Prepared by staff based on CAF (2013).

25. Chapter 4 develops in depth how the “systemic channel” operates in the relationship between drugs and violence.

**A study made for Bogota found that the ban on alcohol sale in liquor stores at nighttime reduced the number of assaults and the number of injuries and deaths due to traffic accidents, albeit not the incidence of rape or domestic violence.**

**Table 2.4** Average age at which prisoners consumed marihuana for the first time

Variable	Argentina	Brazil	Peru	El Salvador	Average in four countries
Average age at which prisoners started smoking marihuana (first time)	15.8	15.4	18.1	14.7	15.9

Source: UNDP (2013).

A series of interventions address the abuse of alcohol and drugs by young people. Some measures fall on the entire population (i.e., have no target a priori), such as those trying to reduce the availability of these substances by making them more expensive, for example through sales tax increases. Markowitz (2000) and Markowitz and Grossman (1998) find effective results of such measures in the United States, manifested in lower violence, caused by decrease substance abuse due to higher taxes<sup>26</sup>. Other interventions try to just limit the sale of alcohol. De Mello, Mejía and Suarez (2013) find that the ban on alcohol sale in liquor stores in Bogota at nighttime (between 11pm and 10am) reduced the number of assaults and the number of injuries and deaths due to traffic accidents, albeit not the incidence of rape or domestic violence.

Amid the interventions to prevent the violence associated with drug use, those focusing on the systemic channel via various forms of legalization or decriminalization stand out<sup>27</sup>. Adda, McConnell and Rasul (2014) find that legalizing marijuana possession for personal consumption in the town of Lambeth, near London, led to an increase in drug use, but reduced the total number crimes, thanks to the reallocation of police efforts to control crimes other than possession. However, Kelly and Rasul (2014), who also evaluated the Lambeth case, found that decriminalization generated an increase in hospitalizations due to hard drug use, especially among the youth, which suggests that any strategy to decriminalize drug use should consider this type of public health effects<sup>28</sup>.

Other interventions seek to promote a measured and responsible use of alcohol or drugs, rather than tackling their availability. Such is the case of interventions like Multisystemic Therapy (MST), Functional Family Therapy (FFT), or LifeSkills Training (LST), which, undertaken in educational institutions or at the very homes of the young people at risk, by education or psychology professionals, have shown promising results<sup>29</sup>. In contrast, the program to prevent drug use among young people known as DARE (Drug Abuse Resistance Education), one of the most popular in the United States and administered at school by police personnel, does not

26. However, the price elasticities of alcohol/violence calculated for specific environments (developed countries) cannot be transposed directly to places where the culture and practices surrounding alcohol abuse differ significantly, like some regions of Latin America.

27. The most recent experience of Uruguay will shed light on what can happen in the context of a Latin American country.

28. For more details on these policies, see Chapter 4

29. These interventions are described as "models" in the inventory of the site Blueprints for Healthy Youth Development, of the University of Colorado at Boulder (<http://www.blueprintsprograms.com>), and they are also endorsed by the following US government offices: The Office of Justice Programs (CrimeSolutions.gov), The Office of Juvenile Justice and Delinquency Prevention (<http://www.ojjdp.gov>) and SAMHSA (Substance Abuse and Mental Health Services Administration).

show positive results compared with other strategies to prevent substance abuse at school (Petrosino and Lavenberg, 2007).<sup>30</sup>

Youth mentoring or tutoring programs also seek to lower drug and alcohol consumption (among other desirable outcomes such as improved school performance) by promoting behavioral changes through the company of an adult that serves as a role model. In the United States, the program Big Brothers Big Sisters (BBBS) is an example of this type of intervention: for close to a year each, at-risk youths spend a few hours per week with an adult, who is chosen after careful evaluation and training, and assigned to each youth, based on common interests, to join him/her in daily activities. The aim is that, through these encounters, each youth can forge a close relationship with a committed and assertive adult. The program seems to improve certain aspects of the youths' behavior, but its effects appear modest and short-lived (Tolan *et al.*, 2013).

Other interventions complement the tutoring programs with academic support and financial incentives for young people with bad grades in conflict-prone schools. This is the case of the Quantum Opportunity Program (QOP). Lasting approximately four to five years (while its beneficiaries are enrolled in middle or high school), the program has had several evaluation rounds that made it possible to measure its short, medium, and long term effects in a group of young beneficiaries. The short-term assessments speak for encouraging results, namely more years of completed education and better behavior among the treated youths in comparison with the control group. However, these effects were diluted in longer-term measurements and some effects even became negative. Positive results lingered among those beneficiaries who entered the program earlier, suggesting that the earlier the problem is addressed, the more lasting the positive results. In addition, the program was more beneficial for women than for men (Rodriguez Planas, 2012) and for individuals at very high risk of committing crimes, while not proving successful among young people with medium or low risk. Because part of the QOP program consisted of bringing together kids with different levels of risk, peer effects (exposure to riskier peers) could explain why it increased the average number of arrests observed after ten years of participating in the program (Rodriguez Planas, 2012 and Heckman and Kautz, 2014).

A final set of measures to prevent the use of drugs and alcohol are drug courts. Bailiffs in these specialized courts use both legal and moral authority in a collaborative manner to ensure withdrawal amid people with consumption charges, running regular medical tests to check on consumption, and monitoring compliance with the recommended rehabilitation treatments. This type of intervention has expanded greatly in the United States over the past 20 years. Mitchell *et al.* (2012) find that the passage through a drug court causes a drop in the rate of relapse to drug use from 50% to 38% in the case of adult courts, and from 50% to 43.5% in the case of youth courts. Furthermore, these results remain positive over time.

**Youth mentoring or tutoring programs seek to lower drug and alcohol consumption among other desirable outcomes such as improved school performance.**

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30. D.A.R.E. resembles Scared Straight in that it is police officers who take part in the instruction of children and adolescents; both interventions suggest that relying on the police to "alert" about the dangers of risky activities does not have the desired results.

**Empirical evidence found that drug courts are effective mechanisms to lower the rate of relapse to drug use among adults and young people.**

### **Gangs**

Gangs are an urban phenomenon linked to the young and poor in many Latin American cities. They are the last bastions where young people who are “disconnected” (in the jargon of social bond theory) build an identity and a sense of belonging (Mockus, Murrain and Villa, 2012)<sup>31</sup> or attain some level of protection against social disorder in the absence of a State capable of providing security (OAS, 2007).

Currently, many gangs are linked to micro and other drug trafficking networks, which leads many young gang members to the world of crime and violence (see Chapter 4).

This is especially the case of the so-called “criminal gangs”. But not all gangs are the same, nor is the gravity of their actions or their composition (OAS, 2007)<sup>32</sup>.

“Transgressor” gangs are of medium size (40-80 members) and operate in the neighborhood, typically bringing together kids aged 10 to 18 who are not enrolled in school. They have rules, hierarchies and initiation rites, and they impose violent control over the territory they claim as their own. “Violent gangs” are larger (100 to 500 members), they operate in districts under the control of criminal gangs, and their members are 15 to 30 years old and sometimes older. They have more violent purposes and a higher murder rate than transgressor gangs.

The gang phenomenon is especially important in Central America, particularly in countries like Guatemala, El Salvador and Honduras. These countries have implemented “tough” policies to end the violent impact of these groups, yet without sustained success over time<sup>33</sup>.

#### **Box 2.11 Cure Violence’s methodology to beat the gangs**

Cure Violence, originally called Ceasefire, is an anti-violence intervention associated with gangs, which seeks to stop violence at its source. The idea is to stop the use of physical violence in very targeted situations of disputes between gangs. The program started in Chicago and, after showing remarkably positive results, expanded to other places like Baltimore and parts of New York.

The Cure Violence methodology relies on “violence interrupters” who mediate in conflicts between street gangs and intervene in critical situations to prevent the use of weapons. The program caused sharp declines in violent crime rates, in particular a 41% reduction in armed clashes and a 73% decrease in violent deaths in the case of Chicago communities.

To reach these outcomes Cure Violence not only “interrupts” violence, but it also identifies and attempts to change the ways of thinking and acting of those individuals with greater criminogenic potential. There are also efforts to effect change in the rules of the conflicting communities, so that violence reductions are sustained over time. The violence interrupters are available 24/7 to meet the demands of both victims and victimizers, helping the latter for example to find a job, go back to school, or quit the gang.

Cure Violence’s approach is more general than that of its predecessor, Boston Operation Ceasefire, which was implemented in Boston in the mid 90s. Boston Operation Ceasefire’s approach

was more focused on the most active members of the most violent gangs and basically consisted of alerting these individuals about the terrible criminal justice consequences they would face if they committed one single violent act more.

According to Braga, Apel and Welsh (2013), this type of targeted interventions against gang violence could generate positive externalities by reducing the use of violence among untargeted people (non-gang members) who are somehow linked to gangs.

Given the success of Cure Violence, some countries in the region (e.g., Trinidad and Tobago) are beginning to implement it; an assessment of its impacts will be available in the near future (Frühling, 2012).

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**Source:** Prepared by CAF staff based on [www.cureviolence.org](http://www.cureviolence.org) and Skogan *et al.* (2009).

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## TRANSITION TO ADULTHOOD

The transition to adulthood is a critical moment in people's lives, not only because it involves important business and family decisions, but also because it is a critical time to decide more definitively on whether to start a "criminal career" or not. A series of events can lead to "positive" transitions at this stage, driving the individual away from criminogenic situations, or "negative" transitions, bringing the individual closer to such situations. Events such as marriage, the birth of a child, or a quality job can generate positive transitions<sup>34</sup>, while episodes such as imprisonment often generate negative transitions. Employment opportunities and the degree of rehabilitation achieved after incarceration are two major factors that dominate the relationship between the transition to adulthood and the transition to a criminal career.

**Better job opportunities today not only entail a static or short-term effect on crime, but also medium and long effects, associated with the greater future opportunity cost resulting from the accumulation of job skills in legal activities.**

## EMPLOYMENT OPPORTUNITIES

According to a basic rational choice model (Becker, 1968), the possibility of having a well-paid employment reduces the attractiveness of criminal activity because it increases the opportunity cost of committing crimes. In addition, when an individual chooses the path of crime, he gives up on accumulating skills that are valued in the legal job market. This implies that better job opportunities today not only entail a static or short-term effect on crime, but also medium and long effects, associated with the greater future opportunity cost resulting from the accumulation of job skills in legal activities.

Furthermore, although the empirical association between better job opportunities and lower levels of crime has usually been explained through the basic rational choice model à la Becker, Grönqvist (2012) has recently suggested that, as in the case of schooling, employment may also have an incapacitation effect, as it prevents individuals from a negative use of their free time on criminal pursuits.

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34. The empirical assessment of the effects of starting a family on criminal activity is difficult to carry out because of the presence of third factors driving both the decision to start a family and whether to continue with a criminal career, and which are not easily told apart in the data.

**The exposure of young people to more experienced criminals during incarceration can have a criminogenic effect.**

Empirical evidence on the effects of better job opportunities on crime is more heterogeneous and dispersed than the evidence on the effects of schooling. Using data for the United States, Imai and Krishna (2004) rely on a theoretical model to quantify the cost of sacrificing future job opportunities for committing a crime today, and find that it would have a strong deterrence effect on crime<sup>35</sup>. However, the dynamics of criminal versus labor skills is very complex, involving temporary and idiosyncratic factors (i.e., factors specific to each individual).

Perhaps that is why the experimental empirical evidence on the dynamic effects proposed by theoretical models is rather mixed (Munyo, forthcoming; Imai and Krishna, 2004). On the one hand, Schochet, Burghardt, and McConnell (2008), who run a randomized assessment of a youth employment program in the United States (Job Corps), suggest that the crime reduction achieved thanks to job opportunities is short-lived, in line with the incapacitation hypothesis and in contradiction with the idea that emphasizes the importance of skill accumulation. On the other hand, in a study for the U.K., Bell, Bindler and Machin, 2012, show that recession episodes have lasting effects on criminal activity. In particular, they find that young people who exit school in times of economic crisis have more chances to become “career criminals” than those who graduate in times of economic growth, when employment opportunities abound.

## **INCARCERATION: REHABILITATION OR RE-OFFENSE?**

Recent evidence indicates that, especially in the case of young people, exposure to more experienced criminals during incarceration can have a criminogenic effect (Aizer and Doyle, 2013). Other works (e.g., Di Tella and Schargrodsy, 2013) also suggest the presence of these negative effects when comparing the re-offense rates of those who have been incarcerated versus those who have been monitored electronically. Since these policies focus on one of the institutions of the criminal justice system, this evidence is discussed in greater detail in Chapter 5.

Regarding alternatives to incarceration, Wilson (2003) reviews the results of interventions that imprison individuals temporarily in training camps organized in the spirit of military camps to try to instill discipline, but they do not find positive results. Galiani, Rossi and Schargrodsy (2011) find a similar outcome: having gone through the military service in Argentina (formerly mandatory for those drawn out) increased the likelihood of criminal activity and worsened some performance indicators in the labor market. Meanwhile, Petrosino, Turpin-Petrosino and Guckenburg (2010) review the effects of the juvenile courts and find that, on average, young people who are formally judged in those courts instead of being referred to alternative programs of counseling or rehabilitation for young people with criminal records, maintain or even increase their subsequent criminal activity.

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35. Moreover, in light of this evidence they conclude that crime prevention measures are dynamically more effective than those of “redemption” or rehabilitation, as the possibility of redemption reduces the power of the future threat that helps prevent crime entry today.



## Conclusions

There is no silver bullet to end crime. However, there are many interventions targeted to individuals that reduce both their crime propensity and their criminogenic exposure, i.e., they limit the formation of criminals. These effects are not achieved instantaneously, but are rather the result of an investment process that encompasses various stages of life, and in which different actors are involved in addition to the individual himself. Investments to affect the formation of crime propensity seem more rewarding in the early stages of life (especially the prenatal period and infancy), while those seeking to reduce criminogenic exposure are more important as of adolescence.

In the first years of life, particularly up to age 5, attention to the child's brain development is crucial, as the brain contains the basis for the development of cognitive and socioemotional skills that later on lead to a rational management of emotions and knowledge to avoid criminogenic situations, or choose noncriminal alternatives in case of facing them. To foster a child's full development since early childhood, proper nutrition and early stimulation have proved very effective, as have some parent-focused interventions promoting assertive and empathetic parenting styles and warning about the importance of certain health care practices for the full development of the children's future capabilities.

In the following years, comprising the school ages (6 to 18 years, approximately) the influence of new institutions comes into play. School and peers in the community or neighborhood appear as important sources of criminogenic exposure. At this stage there is also a set of effective interventions to reduce both crime propensity and criminogenic exposure: those aimed at reducing domestic violence and their traces on children and adolescents; those implemented in schools to enhance cognitive and non-cognitive abilities; those that target intramural criminogenic behavior (e.g., bullying); those that focus on the community and encourage the interaction with peers involving less criminogenic exposure; and those seeking to restrict the use of drugs and alcohol or teen gang entry. Interventions based on cognitive behavioral therapy, both within families and in vulnerable schools or communities, stand out for their high efficacy, according to the most recent impact assessments.

The transition to adulthood is the last stage of life in which the transition to a life of crime can still be avoided. At this stage, the young adults' experiences in relation to employment or the possible passage through prison or correctional systems are determinant. Both types of experiences can encourage behavioral traits or provide criminogenic exposure that leads to higher crime rates. Relevant interventions at this stage aim at improving employment opportunities, so as to decrease the relative profitability of illicit activities. Moreover, because the evidence indicates that the prisons in the region have a criminogenic effect that may be determining of future criminal behavior, it is essential to improve prison conditions and to prevent prisons from serving as schools of crime.

Although many interventions promise very positive crime prevention outcomes, it is essential that they be conceived in a manner that is consistent with the for-

mation of skills throughout life. That is, a holistic view of crime prevention should consider the entire life cycle of individuals, coming up with timely and quality interventions at each stage. In order to achieve this comprehensive system of timely crime prevention, Latin America needs to better understand which interventions work and which ones do not. Thus, to capitalize on the strengths and weaknesses of the initiatives currently underway, it is necessary to generate more learning thereon. Carrying out quality impact assessments and using statistical information following criminal and non-criminal lives are key to put an end to the policy mistakes that have made of Latin America one of the regions with the highest crime rates in the world.





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# CRIME IN ITS PLACE

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## Chapter 3



## Chapter 3

# CRIME IN ITS PLACE<sup>1</sup>

## Introduction

*La Capuchina* is one of the oldest neighborhoods in Bogota. Named after the Church and Convent of the order of the *Capuchinos*, it used to boast typical colonial buildings that slowly gave way to early twentieth century architecture. About 6 thousand people live in *La Capuchina* today, mostly with the same complaint: street theft, explained by absurd due to the large number of people who pass by the neighborhood every day. The complaint is fair: in the 157 street segment blocks that make up *La Capuchina* there were 262 street theft and robbery reports during 2011 and 2012. However, underlying this statistic lies a fundamental fact. 67 of these crimes took place on the street segment of *Calle 13* located between *Carrera 13* and Avenue Caracas; i.e. more than 25% of *La Capuchina*'s thefts and robberies took place in 0.6% of its blocks (Mejía, Ortega and Ortiz, 2014).

"The Crucial Question for Crime: Not Who Done It But Where Done It". David Weisburd<sup>2</sup> thus highlights the importance, to truly understand crime, of studying the place where it occurs, as well as that place's features. It cannot be denied that some people have greater crime propensity than others. Identifying who commit crimes and finding ways to make them less likely to commit them has traditionally been the focus of criminology (see Chapter 2). However, it is equally unquestionable that every crime occurs in a specific place, at a specific time, and under specific circumstances that provide its perpetrator with the opportunity to commit it.

Are the time and the place of crime just random? No. The case of *La Capuchina* illustrates one of crime's most salient features: its marked concentration in a few places or "hotspots". For example, in five cities of Latin America<sup>3</sup> 50% of homicides occur in 1.59% of blocks and 50% of street thefts and robberies occur in approximately 7% of blocks (Mejía, Ortega and Ortiz, 2014). Something similar happens in American cities<sup>4</sup>. In addition to this concentration, there is much variability among blocks within neighborhoods. And it is also true that the surroundings of some hotspots often boast low crime rates (Mejía Ortega and Ortiz, 2014). In Bogota, for example, the variability of thefts among blocks within neighborhoods is nearly four times higher than the variability of thefts among neighborhoods (Mejía, Ortega and Ortiz, 2014).

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1. This chapter was written by Fernando Alvarez with research assistance from Mariana Urbina.

2. David Weisburd is a professor at The George Mason University and the 2010 recipient of the "Stockholm Prize in Criminology".

3. Barranquilla, Bogota, Cali and Medellin (Colombia,) and the Sucre municipality in Caracas.

4. Analyzing 323 thousand police calls in Minneapolis in 1986, Sherman, Gartin, and Buerger (1989) conclude that only 3% of addresses accounted for 50% of cases. Similarly, Weisburd, Groff and Yang (2012) studied the incidence of crime in Seattle at the street segment level between 1989 and 2004 and find that, depending on the year, between 4.7% and 6.1% of street segments accounted for 50% of crimes.

What is the most appropriate definition of “place” to address public safety? The “criminology of place” suggests that this definition should be as specific as possible (Sherman, Gartin and Buerger, 1989, Weisburd, Groff and Yang, 2012). Some neighborhoods are certainly more dangerous than others, but within each neighborhood there are very precise areas with hugely different levels of crime. Focusing on neighborhoods to analyze crime geographically would miss this point.

The time dimension also presents interesting patterns. Homicides are concentrated on weekends and at early hours, and street thefts and robberies are concentrated on working days and at certain times. The incidence of crime in a given place is also pretty stable over time. That is, it is unlikely for a place that is a “hotspot” in a given year to become a crime-free area the following year, and vice versa.

What makes certain times and places more criminogenic than others? Criminology offers two complementary approaches to answer this: the Crime Opportunity and the Social Disorganization theories. Indeed, Weisburd, Groff and Yang (2012) have recently highlighted the spatial coincidence between hotspots for crime and hotspots for crime opportunity and social disorganization.

According to these approaches, each space-time cell has a very particular configuration that determines its proclivity to bear crime. The elements that make a space-time combination criminogenic are varied. A space can be particularly crime prone due to topography, scarce police presence, or poor lighting. Commercial activity and foot traffic in certain places can also attract criminals. Weak social ties among neighbors and certain migratory patterns can undermine collective efficacy and weaken informal surveillance. Finally, a bad state of public spaces, for example due to garbage piling up, poor lighting, or vacant land, can send the signal that crime is king in that space, affecting not only citizens’ perception of insecurity, but also the sense of impunity of potential aggressors.

The CAF survey provides evidence on the extent of physical deterioration and lack of social cohesion in Latin American cities. For example, according to the 2013 edition, 60% of the respondents in Buenos Aires, La Paz, Santa Cruz, Rio de Janeiro, Lima and Caracas report poorly lit streets in the surroundings of their homes. Moreover, 46% claim to “almost always” observe alcohol consumption in their neighborhood’s public spaces, and 30% disagree with statements like “people around here are willing to help their neighbors”. These responses are correlated with some measures of crimes.

Public policy implications are self-evident. If certain characteristics of certain geographical areas are critical for a crime to occur, space-focused prevention policies should succeed in fighting crime. Among these interventions one can highlight hotspot policing, interventions to underpin social cohesion, and interventions to improve the public infrastructure. Assessments of these types of space-based strategies cast encouraging results. Studies find crime reduction



in the targeted areas, crime seldom migrates to adjacent areas (no crime displacement) and, what is more, it is possible for benefits of targeted interventions to even spill over (Diffusion of benefits).

**Within a city, or even a city block, it is common to find spaces –such as corners, alleys, blocks, courts, or shops—that are much more criminogenic than their surroundings.**

## Crime’s “where” and “when”

The new “criminology of place” highlights the importance of the characteristics of very precise geographical areas for crime to occur<sup>5</sup>. This is because the time and the space in which crime takes place are not accidental. Not only is crime more likely to occur at certain times and in certain cities, but also, within a city, or even a city block<sup>6</sup>, it is common to find spaces –such as corners, alleys, blocks, courts, or shops—that are much more criminogenic than their surroundings (Sherman, Gartin and Buerger, 1989, Weisburd, Groff and Yang, 2012).

### CRIME’S “WHERE”

How is crime distributed over space and what is the degree of spatial association among different types of crimes? The map of Bogota in Figure 3.1 (p. 98) displays information on this. Greater color intensity reflects higher density of crime. Although there is some degree of spatial clustering, also confirmed by the Moran index<sup>7</sup>, the location of each cluster appears, to some extent, to vary by type of crime.

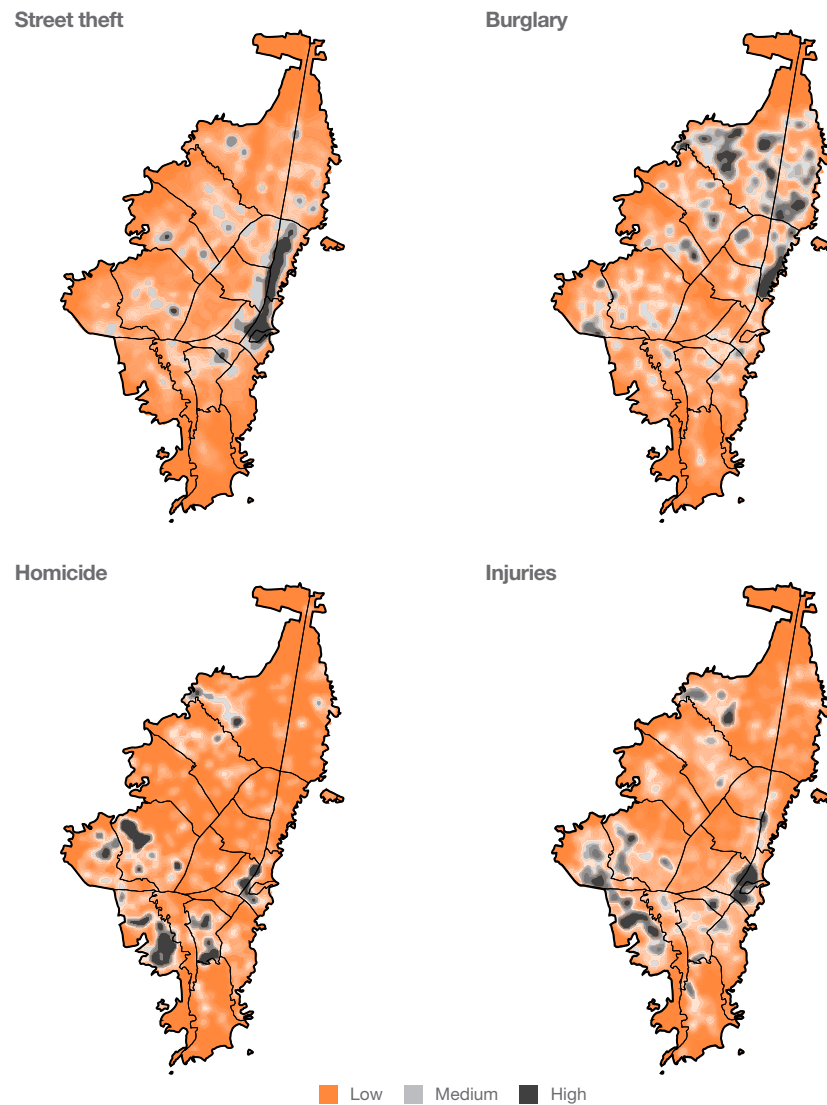
Homicides are concentrated in the central and southwestern regions (e.g., in Ciudad Bolívar and Ciudad Kennedy) with some incidence on certain city blocks downtown east (e.g. Martyrs) and northwest (e.g., in the Suba-Gauteng border). In contrast, burglaries are concentrated in the northeast (Usaquén, Gauteng and Suba) and street thefts are concentrated in the center of the eastern region (Chapinero, Santa Fe, La Candelaria and the Martyrs). Injuries overlap with homicides, though also with some street theft hotspots.

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5. Focusing on very precise geographical units does not disregard the elements that affect crime simultaneously in micro-spaces within an aggregate space, leading for example to some neighborhoods being more dangerous than others.

6. Because the term “block” denotes both the square among four streets (“manzana” in Spanish) and the distance between two corners (“cuadra” in Spanish), in this Chapter, “city block” will refer to the former and “block” to the latter.

7. These indexes make it possible to test statistically whether there is positive, negative, or no spatial correlation within a region (i.e., whether closer geographical areas are more, less, or equally similar). The Moran index is probably the most popular measure of spatial correlation. Essentially it consists of adding, for all pairs of geographical spaces, the product of the spatial similarity (closeness) to the similarity in the attribute (number of crimes). Mejía, Ortega and Ortiz (2014) calculate this index for different crimes and Colombian cities referred to in this report. In all cases, at the neighborhood level the distribution of crime is more clustered spatially than it would be were crime random.

**Figure 3.1** Intensity of crime in Bogota by type (2012)

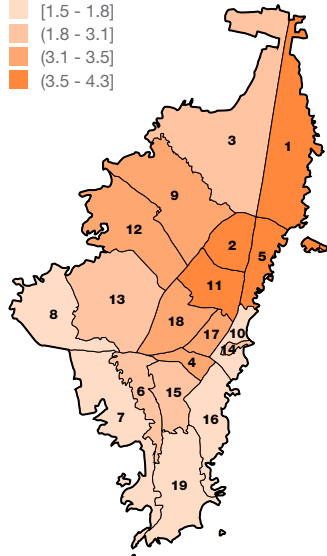
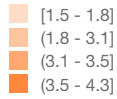
Source: Mejía, Ortega y Ortiz (2014).

It is pertinent to compare these patterns with certain socioeconomic characteristics of Bogotá's neighborhoods. The map on Figure 3.2 makes it possible to do just this, presenting information on the average social status, employment concentration, and fraction of land devoted to residential use versus "informal" use in each neighborhood<sup>8</sup>.

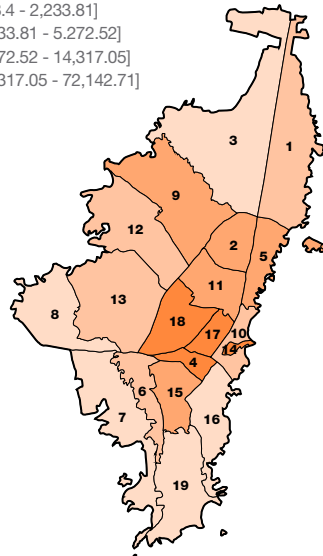
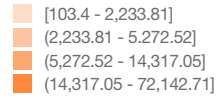
8. The Administrative Department of City Planning (DAPD) established the categories of land use following a population classification in each town consisting of six socioeconomic strata. However, these categories were reshuffled for the report of the Mayor of Bogotá (2006) to simplify the analysis of the distribution of land following a habitat criterium. The category "informal" encompasses poor areas, areas not fully developed, and areas of urban decay, among others, while the category "residential land only" includes areas of residential use only and low density areas.

**Figure 3.2** Socioeconomic indicators by municipality in Bogota (several years)<sup>a/</sup>

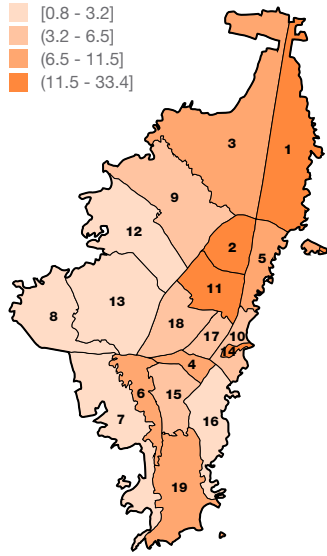
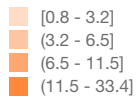
**Average socioeconomic status<sup>b/</sup>**



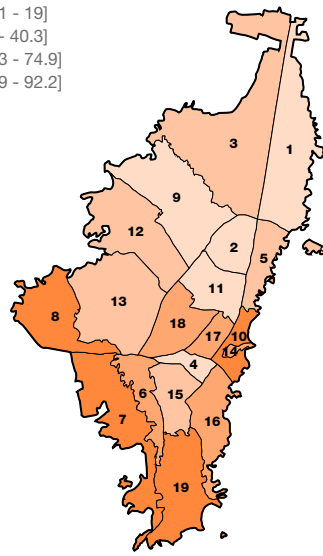
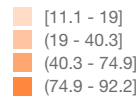
**Employment density (workers/km<sup>2</sup>)**



**Percentage land for residential use only**



**Percentage land for "informal" use**



- |                  |                  |                  |                  |                 |
|------------------|------------------|------------------|------------------|-----------------|
| 1 Usaquén        | 2 Barrios Unidos | 3 Suba           | 4 Antonio Nariño | 5 Chapinero     |
| 6 Tunjuelito     | 7 Ciudad Bolívar | 8 Bosa           | 9 Engativá       | 10 Santa Fe     |
| 11 Teusaquillo   | 12 Fontibón      | 13 Kennedy       | 14 La Candelaria | 15 Rafael Uribe |
| 16 San Cristóbal | 17 Los Mártires  | 18 Puente Aranda | 19 Usme          |                 |

a/ Years. average socioeconomic status, 2005, land of residential use only and informal use, 1999, employment density, 2004.

Source: Alcaldía Mayor and Environmental Observatory of Bogota (2006).

**The five most dangerous districts in Buenos Aires, with only 35% of the city's population, account for about 75% of the homicides perpetrated in 2011.**

Several patterns stand out. First, the central and southwestern regions (e.g., Ciudad Kennedy and Ciudad Bolívar), with the highest incidence of homicides, show relatively low socioeconomic status and more informal land use. Second, the northeastern parts (especially Chapinero, Usaquén and Suba), with the highest incidence of burglaries, show high socioeconomic status and a larger fraction of land devoted to residential use only. Finally, the center of the eastern region (Chapinero, Santa Fe and La Candelaria), with the highest incidence of street theft and robbery, has greater employment concentration.

To complement this analysis, Table 3.1 shows the correlation matrix among crime types at block level.

**Table 3.1** Correlation<sup>a/</sup> between the number of victims by crime type in Colombian cities (2011-2012)<sup>b/</sup>

Type of crime	Street theft	Injuries	Homicide	Vehicle theft
Street theft	1.00	0.38	0.14	0.35
Injuries	0.38	1.00	0.24	0.22
Homicide	0.14	0.24	1.00	0.11
Vehicle theft	0.35	0.22	0.11	1.00

a/ This indicator informs on the degree of linear association between two variables, in this case, between two types of crime. Therefore, a value close to 1 would indicate a very high overlap between these two crimes at the block level.

b/ The observations were grouped at the block level and the table shows the average correlations for Barranquilla, Bogota, Cali and Medellin.

**Source:** Mejía, Ortega and Ortiz (2014).

Although this correlation is positive in all cases, its magnitude is relatively low, in line with the spatial specialization suggested by the maps. Homicides are correlated more strongly with personal injuries, which is only natural given that certain factors contribute to both offenses.

This association can also be appreciated in Table 3.2 and Chart 3.1, which present information on intentional homicides by motive for the city of Buenos Aires in 2011. Forty percent of homicides (and up to 61% in district 1) are triggered by arguments or quarrels.

Table 3.2 shows how the concentration of crime in Buenos Aires is similar to that in Bogota. The five most dangerous districts (districts 1, 4, 7, 8 and 9), with only 35% of the city's population, account for about 75% of the homicides perpetrated in 2011. Moreover, 23 slums, with less than 6% of the city's population, account for over 34% of all crimes, underscoring an alarming homicide rate of 40 per 100,000 inhabitants<sup>9</sup>.

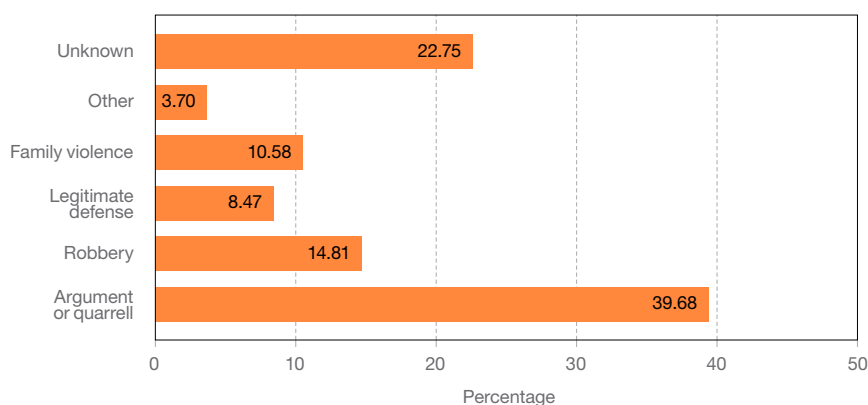
9. See Corte Suprema de Justicia de la Nación (2013)

**Table 3.2** Homicides by district in the City of Buenos Aires (2011)<sup>a/</sup>

District	Number of homicides	Homicides per 100 thousand inhabitants	Percentage of the city homicides	Percentage of the city population	Average household per capita income	Population with unmet basic needs (%)
1	33	16.03	17.46	7.12	4,054.15	7.01
2	3	1.90	1.59	5.46	4,049.34	18.12
3	11	5.87	5.82	6.49	5,059.66	2.43
4	39	17.87	20.63	7.55	3,825.96	12.59
5	4	2.23	2.12	6.19	2,567.71	14.91
6	5	2.84	2.65	6.09	4,374.34	6.32
7	22	9.97	11.64	7.63	4,573.17	2.44
8	27	14.42	14.29	6.48	3,315.93	9.84
9	17	10.51	8.99	5.60	2,147.74	13.83
10	6	3.61	3.17	5.74	3,112.79	5.32
11	6	3.16	3.17	6.57	3,056.82	3.82
12	1	0.50	0.53	6.92	3,638.98	2.41
13	4	1.73	2.12	8.00	3,995.72	1.94
14	3	1.33	1.59	7.82	5,811.30	1.94
15	8	4.38	4.23	6.32	5,335.45	2.65
<b>Total</b>	<b>189</b>	<b>6.54</b>	<b>100.00</b>	<b>100.00</b>	<b>3,584.05</b>	<b>5.11</b>

a/ The average household income per capita is measured in 2012 pesos.

Source: CAF staff based on *Corte Suprema de Justicia de la Nación* (2013), *Instituto Nacional de Estadísticas y Censos* (2010), and *Dirección General de Estadísticas y Censos* (2012).

**Chart 3.1** Crime in the City of Buenos Aires by motive (2011)

Source: *Corte Suprema de Justicia de la Nación* (2013).

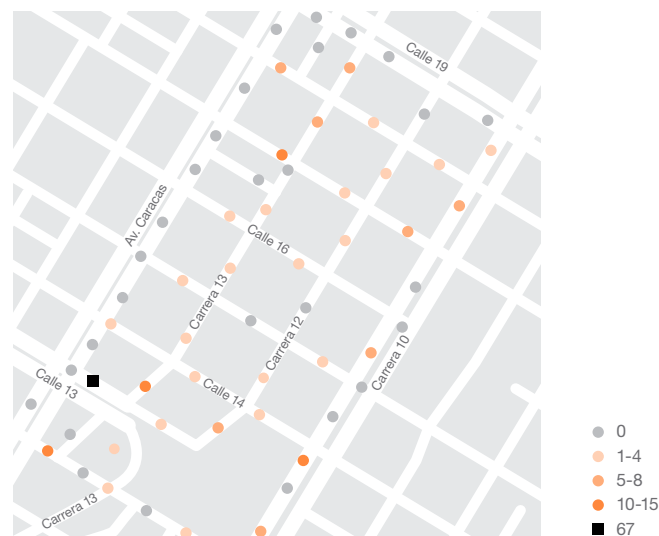
It is not as clear, however, how these homicide rates are associated with socioeconomic conditions in each district. Yes, district 9, among the most

**The modern approach of the criminology of place emphasizes the importance of focusing on very specific geographical spaces to understand the large variability in crime rates within neighborhoods, urban areas, and even city blocks.**

dangerous districts, has the lowest average household per capita income and one of the highest percentages of population with unmet basic needs. However, districts 1 and 7 are not among the poorest ones. And district 5, with socioeconomic indicators akin to those of district 9, has a very low homicide rate. This suggests that socioeconomic factors alone can hardly explain crime. Rather, it is worth complementing them with more specific geographical analyses.

The modern approach of the criminology of place emphasizes the importance of focusing on very specific geographical spaces<sup>10</sup> to understand the large variability in crime rates within neighborhoods, urban areas, and even city blocks. To provide an example, Figure 3.3 shows the number of street thefts by block in La Capuchina.

**Figure 3.3** Street theft and robbery in La Capuchina, Bogota (2011-2012)



Source: Mejía, Ortega and Ortiz (2014).

This neighborhood has some of the highest-crime blocks in Bogota. For example, the street segment of *Calle 13* located between *Carrera 13* and *Avenue Caracas* accounts for 67 of the 262 thefts occurred in La Capuchina in 2011-2012. However, Figure 3.3 shows several blocks of low or even no crime in its surroundings (see Mejía, Ortega and Ortiz, 2014), confirming the importance of analyzing small-scale geographical spaces.

10. Much of this chapter focuses on micro-spaces, usually blocks.

Table 3.3 presents information of just this kind for the years 2011 and 2012 in four Colombian cities (Barranquilla, Bogota, Cali y Medellin)<sup>11</sup> and the municipality of Sucre in the Metropolitan District of Caracas. For each city and type of crime, it shows the number of victims, the percentage of blocks without victims throughout the period, and the percentage of blocks that account for 50% and 100% of the victims. As benchmark, the table also shows the percentage of blocks that would account for 100% of crimes if crimes had been scattered randomly within each city.

**Table 3.3** Concentration of crime in Colombian cities and the Sucre municipality in Caracas, Venezuela (2011-2012)<sup>a/</sup>

Type of Crime	City	Number of victims	Percentage of segments without victims	Percentage of segments that concentrate 50% of victims	Percentage of segments that concentrate 100% of victims		Percentage difference between observed and hypothetical concentrations
					Observed	Hypothetical with randomization	
Homicides	Barranquilla	559	98.69	0.73	1.31	1.42	8.46
	Bogota	2,399	98.54	0.80	1.46	1.59	8.72
	Cali	2,732	96.10	2.48	3.90	4.85	24.30
	Medellin	2,103	97.03	1.90	2.97	3.72	25.31
	Sucre (Caracas)	1,253	90.51	2.04	9.49	19.52	105.67
<b>Total/average</b>		<b>9,046</b>	<b>96.17</b>	<b>1.59</b>	<b>3.83</b>	<b>6.22</b>	<b>62.55</b>
Aggression	Barranquilla	3,833	93.41	4.77	6.59	9.32	41.32
	Bogota	18,541	91.76	6.01	8.24	11.66	41.53
	Cali	7,510	90.92	6.63	9.08	12.76	40.40
	Medellin	1,423	98.19	1.28	1.81	2.53	40.13
<b>Total/average</b>		<b>31,307</b>	<b>93.57</b>	<b>4.67</b>	<b>6.43</b>	<b>9.07</b>	<b>40.98</b>
Street theft	Barranquilla	7,176	90.48	7.67	9.52	16.73	75.71
	Bogota	31,267	88.49	9.22	11.51	18.86	63.85
	Cali	12,179	88.43	9.34	11.57	19.86	71.67
	Medellin	2,634	97.22	2.19	2.78	4.64	66.57
<b>Total/average</b>		<b>53,256</b>	<b>91.15</b>	<b>7.10</b>	<b>8.85</b>	<b>15.02</b>	<b>69.82</b>
Vehicle (car and motorbike) theft	Barranquilla	1,680	96.60	2.20	3.40	4.20	23.37
	Bogota	7,597	96.00	2.54	4.00	4.95	23.88
	Cali	7,595	91.05	6.69	8.95	12.89	43.99
	Medellin	8,600	91.74	6.47	8.26	14.37	73.92
<b>Total/average</b>		<b>25,472</b>	<b>93.85</b>	<b>4.47</b>	<b>6.15</b>	<b>9.10</b>	<b>47.92</b>
Burglary	Barranquilla	770	98.24	1.01	1.76	1.95	10.59
	Bogota	8,500	95.52	2.84	4.48	5.52	23.20
	Cali	1,707	97.34	1.55	2.66	3.06	15.04
	Medellin	147	99.75	0.13	0.25	0.26	4.86
<b>Total/average</b>		<b>11,124</b>	<b>97.71</b>	<b>1.38</b>	<b>2.29</b>	<b>2.70</b>	<b>13.43</b>

a/ Barranquilla has 38,193 street segments; Bogota, 149,586; Cali, 55,015; Medellin, 55,458; and Sucre, 5,776.

Source: Mejia, Ortega and Ortiz (2014) and Kronick and Ortega (2014).

11. The figures are restricted to offenses that could be geo-referenced. For these four cities the geo-referencing success rates are about 80% (see Mejia, Ortega and Ortiz, 2014).

**In the studied cities,  
50% of street thefts or  
robberies take place on  
7.1% of blocks.**

The concentration of crime on space is striking. Fifty percent (100%) of street thefts or robberies take place, on average, on 7.1% (8.85%) of blocks. And 50% (100%) of homicides occur on 1.59% (3.83%) of blocks.

This concentration is also common in some United States cities. In Seattle, about 5% of the blocks concentrated 50% of all crimes between 1989 and 2004 (Weisburd, Groff and Yang, 2012). In Minneapolis, 50% of the 323,000 calls requiring police attention in 1986 came from 3% of addresses (Sherman, Gartin and Buenger, 1989). In Milwaukee, about 15% of bars accounted for approximately 50% of crimes in bars (Sherman, Schmidt y Velke, 1992)<sup>12</sup>.

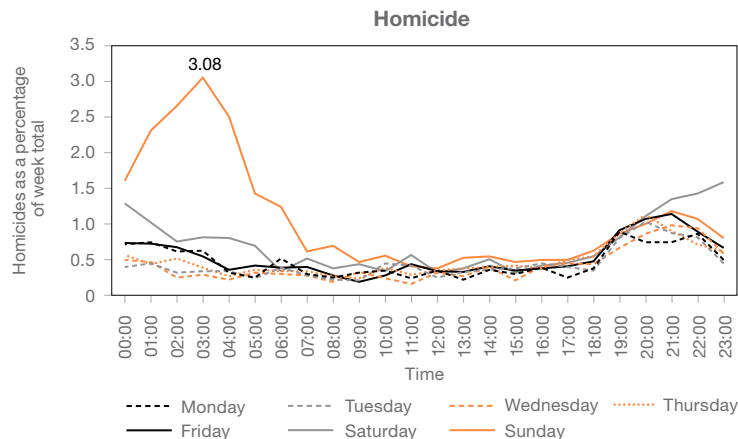
These concentration metrics should be interpreted with caution, since they may be a results of the low number of crimes (especially homicides) vis-à-vis the number of blocks. For example, if the crimes of Barranquilla were distributed randomly across the city, 100% of street thefts and robberies would take place in only 16.7% of blocks. That said, there would still be a difference of over 75% compared with the observed crime distribution, confirming the concentration of crime at the block level beyond its relatively low overall incidence.

## CRIME'S “WHEN”

Time patterns are also very useful to design crime-fighting interventions. On one hand, understanding how crime is distributed over time can help pin down the times when each hotspot should be patrolled. Furthermore, analyzing the stability of crime over time may shed light on which notion of space is most relevant for each crime type.

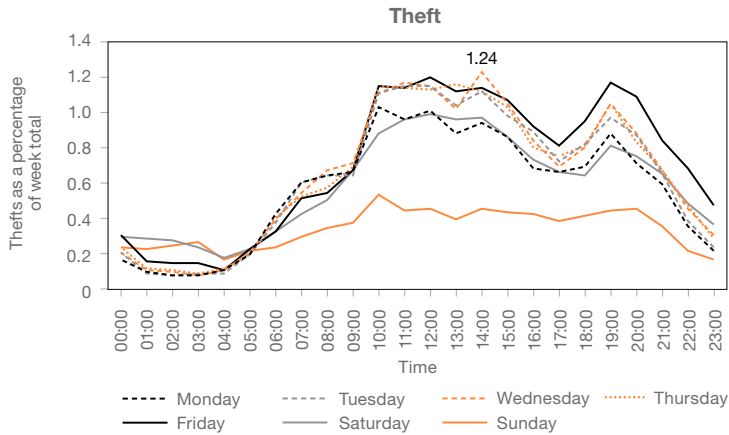
Chart 3.2 shows the crime rate in Bogota for street thefts and robberies and for homicides, by time and day of the week.

**Chart 3.2** Crimes in Bogota by time and day of the week (average 2011-2012)



12. The figures refer to different types of crimes in different periods of time. For example, there is information on homicides between 1960 and 1989 and information on other offenses in 1986-1990.





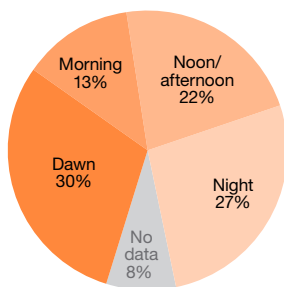
In Bogota, while homicides are more frequent at night, street thefts are more common during daylight.

Source: Mejia, Ortega and Ortiz (2014).

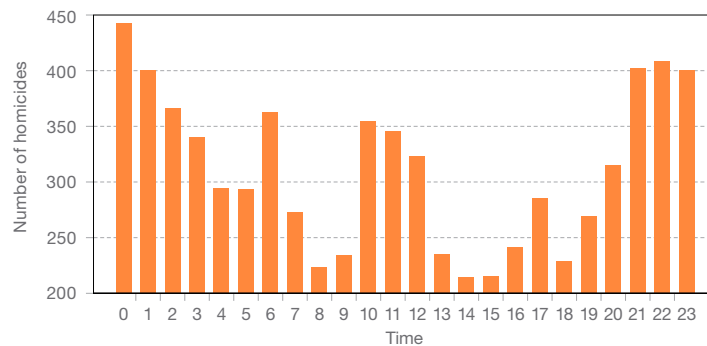
The time distribution of crime presents manifest differences by type of offense. While homicides are more frequent at night, street thefts are more common during daylight, (most likely because there are more potential victims). Sixty-two percent of homicides occur between 6pm and 6am, while only 34.5% of street thefts occur in that timespan. Homicides are most common on Sundays, mainly between 3am and 4am, possibly coinciding with the wrap-up of nightlife activities. In contrast, Sundays boast the lowest frequency of street thefts, which peak on weekdays around lunchtime and between 7pm and 8pm.

Chart 3.3 Distribution of homicides by time in the City of Buenos Aires and Miranda (several years)

City of Buenos Aires (2011)



State of Miranda (January 2010 - July 2013)



Source: Corte Nacional de Justicia de la Nación (2013) and Kronick and Ortega (2014).

Data from the city of Buenos Aires and the municipality of Sucre (Chart 3.3) confirm the concentration of homicides at night, although the non-negligible percentage of homicides committed at noon and in the afternoon in both cases is worth noting. In Buenos Aires in particular, almost 60% of homicides took place at night, and 22% at noon or in the afternoon.

**Blocks that are very dangerous in a given year usually remain that way in subsequent years.**

**This suggests that the factors favoring crime in small-scale environments are deep.**

Regarding the stability and persistence of crime over time, Table 3.4 shows the transition matrix of crime between 2011 and 2012 for street thefts and robberies (upper panel) and injuries (bottom panel) in Bogota. Each cell indicates the probability that a block with a certain level of crime in 2011 moves to another level in 2012. Overall, there is a lot of stability in these geographical micro-spaces. Blocks that are very dangerous in a given year usually remain that way in subsequent years, and vice versa.

**Table 3.4** Transitions in crime level in Bogota (2011 vs. 2012)<sup>a/</sup>

Street theft and robbery								
	C=0	C=1	C in [2.3]	C in [4.5]	C in [6.10]	C in [10.20]	C >20	Total
C=0	132,367	6,322	994	71	7	0	0	139,761
C=1	5,637	1,344	481	60	24	0	0	7,546
C in [2.3]	836	450	351	91	44	5	0	1,777
C in [4.5]	38	65	96	43	36	3	1	282
C in [6.10]	7	12	33	37	51	22	2	164
C in [10.20]	0	0	3	4	17	15	5	44
C >20	0	0	0	0	1	5	6	12
Total	138,885	8,193	1,958	306	180	50	14	
Injuries								
	C=0	C=1	C in [2.3]	C in [4.5]	C in [6.10]	C in [10.20]	C >20	Total
C=0	137,263	4,605	1,164	90	20	2	0	143,144
C=1	4,117	647	220	32	9	2	0	5,027
C in [2.3]	938	189	109	27	13	3	0	1,279
C in [4.5]	58	21	10	7	3	3	0	102
C in [6.10]	12	5	9	1	5	1	0	33
C in [10.20]	0	0	0	0	0	1	0	1
C >20	0	0	0	0	0	0	0	0
Total	142,388	5,467	1,512	157	50	12	0	

a/The observations are grouped at the block level.

Source: Mejía, Ortega and Ortiz (2014).

Of the 139,761 blocks without street thefts/robberies in 2011, almost 95% had no thefts or robberies in 2012 and over 99% had no more than one theft/robbery. Moreover, of the 56 blocks with ten or more thefts/robberies in 2011, 31 blocks (more than 55%) replicated that in 2012, and only 7 had five thefts/robberies or fewer. Finally, half of the blocks with more than 20 thefts/robberies in 2011 also had more than 20 of these crimes in 2012. The hottest block in 2011 (with 35 thefts/rob-

beries) was also the hottest of 2012 (with 40 thefts/robberies). The transition matrix for injuries also suggests some stability<sup>13</sup>.

This stability suggests that the factors favoring crime in small-scale environments are deep and not temporary. However, this does not mean they cannot change. If the conditions favoring crime are altered, blocks that at some point boast little crime could progressively become hotspots, and vice versa.

## HOW TO FIND A HOTSPOT

In order to design effective crime-fighting policies it is important to establish the right geographical unit of analysis (neighborhoods, streets, or blocks)<sup>14</sup>, to then identify which of these units must be subjected to an intervention. How to classify a geographical unit by its crime incidence? How to identify a hotspot?

The identification of hotspots must rely on both statistical methods and the suggestions and opinions of the police. Certain hotspots can remain hidden from certain methods when their population is too scarce. In addition, certain information, impossible to gather through statistical analysis but known to police officers, can be important to classify an area as a hotspot<sup>15</sup>.

One classification method could consist of defining certain crime thresholds beyond which an area would be classified as hotspot. In a recent study on the municipality of Sucre in the Metropolitan District of Caracas, Kronick and Ortega (2014) use just this approach. Focusing on homicides, they define two periods: from July 2011 to June 2012, and from July 2012 to June 2013. They classify a block as a “chronic hotspot” if it is among the 160 blocks with the most homicides in both periods<sup>16</sup>. They classify a block as a “cooling hotspot” if it is among the 160 blocks with the most murders only in the first period and had one murder in the second period. And they define a block as “getting hot” if it was among the 160 blocks with the most homicides only in the second period having had one murder in the first period. Finally, they call some blocks “new points” for being among the 100 blocks with the most homicides in the second period after boasting no homicides in the first period.

**The identification of hotspots must rely on both statistical methods and the suggestions and opinions of the police.**

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13. This stability is also verified by simple regression analysis between the 2011 and the 2012 crime rates. In the case of thefts and robberies, the autocorrelation coefficient is 0.7 and the R-square is 40% when considering the block as the unit of analysis. In the case of homicides the autocorrelation coefficient is much lower, albeit increasing when considering more aggregated geographical units, as one would expect (see Mejía, Ortega and Ortiz, 2014).

14. The right starting point is to investigate behavioral patterns in the most specific units. To the extent that certain crimes patterns are verified at this scale, that should also be the intervention unit. This chapter presents evidence on the importance of the block as the unit of analysis, even if in certain cases it might be useful to work with a more aggregate unit.

15. Anecdotal evidence can help identify, for example, the areas where the bodies of homicide victims are disposed of, even when they are not where the homicides took place.

16. For a block to be among the 160 blocks with the most homicides it means it is on the 97th percentile of the distribution.

Table 3.5 shows the number of blocks in each category, and the number of homicides they had in the first and second periods.

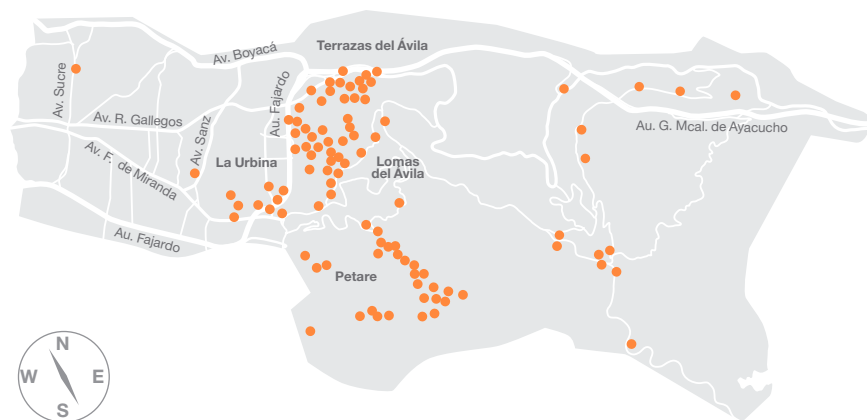
**Table 3.5** Types of block according to number of homicides in the Sucre municipality, Caracas (July 20 2011-19 July 2012 vs. 20 July 2012-19 July 2013)

Hotspot classification	Number of blocks	Average number of homicides (period 1)	Average number of homicides (period 2)
Chronic hotspots	38	2.61	2.18
Warming-up hotspots	28	0.61	1.36
Cooling hotspots	6	1.50	0.83
New hotspots	20	0.40	1.75

**Source:** Kronick and Ortega (2014).

Kronick and Ortega's methods results in 92 hotspots, representing 1.67% of the 5,776 street segments in Sucre. As shown in Figure 3.4, these hotspots are quite concentrated, mostly in Petare, one of the Sucre's five parishes, with a large fraction of households of low socioeconomic level and a large fraction of land devoted to informal uses. However, a few hotspots are also in Leoncio Martínez (west of Petare), a parish that is better urbanized and with quite a few middle-class households.

**Figure 3.4** Hotspots in the Sucre municipality, Caracas (July 2011-July 2012 vs. July 2012-July 2013)



**Source:** Kronick and Ortega (2014).

Other classification methods, albeit not devoid of limitations, do not require defining thresholds. In particular, this is the case of the classification method based on mixture models (see Jones, Nagin and Roeder, 2001). The starting point of this method is defining the number of groups into which the information to be analyzed—in this case, the criminal history of the blocks—will be classified<sup>17</sup>. Blocks are then grouped according to their similarity, considering not only the average incidence of crime in both periods but also its evolution. For example, a block with one crime in 2011 and 15 crimes in 2012 exhibits a very different trajectory from that of a block with 15 crimes in 2011 and one in 2012.

Table 3.6 shows the results of a classification exercise based on this method for street thefts and robberies, injuries, and homicides, in Bogota and Cali. The table shows the number of blocks that belong to each group and the number of crimes per block in each group in 2011 and 2012<sup>18</sup>. The method was restricted to street segments with at least one crime in one of the two periods, the rest of segments being classified as crime-free. It casts six groups in Bogota and 4 in Cali in the case of thefts and robberies, and two groups in the case of injuries and one group in the case of homicides, in both cities.

**Table 3.6** Classification of blocks by criminal history in Bogota and Cali (2011-2012)<sup>a/</sup>

Classification	Bogota			Cali		
	Number of blocks	Average number of crimes (2011)	Average number of crimes (2012)	Number of blocks	Average number of crimes (2011)	Average number of crimes (2012)
<b>Theft</b>						
Severe hotspot	8	26.38	32.63	4	34.50	23.50
Hotspot	44	14.05	15.61	39	12.59	7.18
Medium-high crime	79	8.13	8.70	0	0.00	0.00
Medium crime	510	3.95	4.10	230	4.06	4.25
Low-medium crime	14	0.00	5.29	0	0.00	0.00
Low crime	16,564	0.68	0.75	6,092	0.74	0.77
<b>Injuries</b>						
Hotspot	30	3.93	7.60	20	5.75	4.05
Low crime	12,293	0.59	0.69	4,978	0.72	0.69
<b>Homicides</b>						
Single group	2,189	0.58	0.48	2,145	0.57	0.61

a/ The crimes were grouped at the block level. The number of blocks refers to the total number of blocks that correspond to each group in the 2011-2012 period.

**Source:** Mejía, Ortega and Ortiz (2014).

17. To pick the number of groups one can rely on statistical criteria that weigh the model's goodness of fit and size. The criteria employed in this case is the Bayesian Information Criteria. And the search was restricted to 7 groups (see Table 3.6). The applications of this methodology are varied, ranging from clinical psychology (Nagin and Odgers, 2010) to criminology (Weisburd *et al.*, 2012).

18. The variable used in this exercise is the "criminal event" which in some cases may differ from the number of victims because an event can have more than one victim. Mejía, Ortega and Ortiz (2014) present further analysis on the number of victims.

Regarding thefts and robberies, in both cities the method identifies two groups that could be labeled as “hotspots”, with one of these groups (“severe hotspots”) showing a much higher incidence of crime. Eight blocks in Bogota and 4 blocks in Cali are assigned to the group “severe hotspots”, while 44 blocks in Bogota and 39 blocks in Cali are assigned to the group “hotspots”.

In the case of Bogota, moreover, the method assigns some 79 blocks to a group that could be labeled as “medium-high crime”, with eight thefts on average, and which could be treated as highly dangerous along with the hotspots. It also identifies a group of “low-medium crime”, made up of 14 blocks with no crime in 2011 but a little over 5 thefts per block on average in 2012. These groups do not emerge in the case of Cali.

The group “low crime”, with less than one theft per block per year in both cities, has the highest number of blocks: 16,564 in Bogota and 6,092 in Cali. The group with the second highest number of blocks in both cities is “average crime”, with about four thefts per year: 510 in Bogota and 230 in Cali.

Regarding injuries, the method casts two groups in both cities. The group “hotspots” comprises 30 blocks in Bogota and 20 in Cali. The group “low crime”, again, has the most blocks.

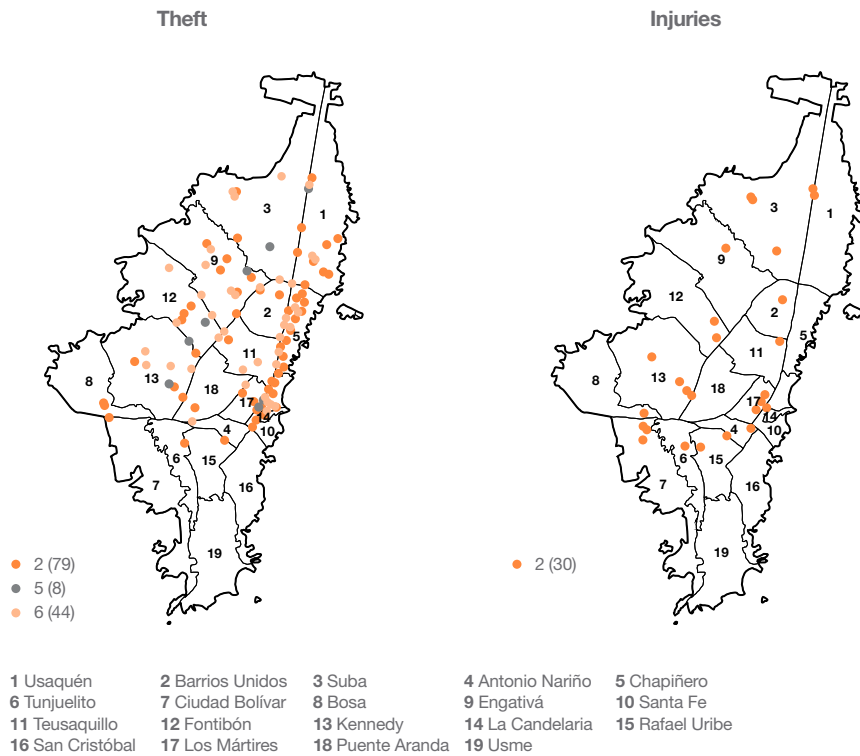
Finally, regarding homicides, the method does not find any blocks that can be labeled as hotspots. This may signal either that there are actually no hotspots at that geographical scale and that a different geographical unit should be used, or that an altogether different approach should be followed to identify hotspots.

For example, no block in Bogota had more than 4 homicides per year between 2011 and 2012. Just one block had 4 homicides in 2011 and just two blocks had 4 homicides in 2012. And the block with 4 homicides in 2011 had no homicides in 2012. However, the story looks different if the unit of analysis is expanded to a city block. Indeed, a city block in Bogota differs markedly from the rest, with the highest number of homicides from 2005 to 2012.

Meanwhile, one block in Cali had 6 homicides in 2011 and 5 homicides in 2012, clearly standing out (Mejía, Ortega, and Ortiz, 2014). However, this segment is not identified as a hotspot, perhaps because the classification method employed favors a parsimonious representation. The statistical cost of creating a new group just for this one block outweighs the cost of inaccurately classifying this segment along with other segments of less crime.

Figure 3.5 shows the segments that are highly dangerous in terms of street thefts and robberies and injuries in Bogota. Although some clustering can be observed, highly dangerous blocks (hotspots) are fairly sparkled throughout Bogota and very few city zones are free of high-crime blocks.

**Figure 3.5** Spatial distribution of high danger points in Bogota(2011)<sup>a/</sup>



Identifying hotspots, however, is just a first step. Each hotspot can have its own history, so that a strategy to bring down crime in these areas should explore its nature in each.

a/ In the case of theft, the map shows 52 hotspots and 79 medium-high danger points while in the case of injuries it shows 30 hotspots.

Source: Mejía, Ortega and Ortiz (2014).

Identifying hotspots, however, is just a first step. Each hotspot can have its own history, so that a strategy to bring down crime in these areas should explore its nature in each. How is crime distributed over time? Are hotspots for one type of crime most likely hotspots for other types of crime? What factors within these micro-spaces make them more criminogenic? Knowing all this would make it possible to implement tailor-made strategies with greater effectiveness<sup>19</sup>.

### IS FOCUSING ON MICRO-SPACES REALLY NECESSARY?

In every city, some districts and neighborhoods are more dangerous than others. For example, the Bogotá districts with more street thefts and robberies (Chapinero, Santa Fe and Candelaria) have more than ten times the number of thefts and robberies per capita of those districts with the fewest street thefts and robberies

19. The final section of this chapter reviews the evidence on some intervention strategies, which suggests that hotspot strategies that focus on the specific problems of each space are often the most effective.

**Evidence on the importance of very local factors makes the focus on micro-geographical spaces necessary.**

(Usme, Saint Kitts and Bosa). This is also true at the neighborhood level: the average theft per block in the most dangerous 25% of blocks is four times that of the least dangerous 25% of blocks (Mejía, Ortega and Ortiz, 2014).

The importance of broad geographical areas for crime is also reflected in spatial autocorrelation indexes, which indicate that neighborhoods with similar levels of crime tend to be close to one another. Furthermore, in those neighborhoods with relatively more hotspots, even streets not classified as hotspots have more crime (ver Mejía, Ortega and Ortiz, 2014)<sup>20</sup>. This means that certain factors related to larger geographical areas (e.g neighborhoods) do affect the spatial conformation of crime.

However evidence on the importance of very local factors makes the focus on micro-geographical spaces necessary. In particular, blocks within a neighborhood or city block tend to differ from one another in terms of crime more than neighborhoods and blocks differ from one another within a city.

Table 3.7 presents a crime variability decomposition exercise for Bogota. The upper panel shows the standard deviation among neighborhoods versus the average standard deviation among blocks within a neighborhood. The lower panel shows the standard deviation among city blocks versus the average standard deviation among blocks within a city block. The variability in the number of thefts within neighborhoods is almost 4 times the variability in the number of thefts among neighborhoods. And the variability in the number of thefts within city blocks is 1.5 times the variability in the number of thefts among city blocks. The results are qualitatively similar for other types of crime.

**Table 3.7** Standard deviation by type of crime in Bogota (2011-2012)<sup>a/</sup>

<b>Neighborhood vs. blocks</b>			
<b>Type of crime</b>	<b>Between neighborhoods</b>	<b>Within neighborhoods</b>	<b>Ratio</b>
Street theft	0.15	0.57	3.91
Injuries	0.05	0.34	6.42
Homicides	0.01	0.10	9.51
Vehicle theft	0.04	0.19	5.19
<b>City blocks vs. blocks</b>			
<b>Type of crime</b>	<b>Between city blocks</b>	<b>Within city blocks</b>	<b>Ratio</b>
Street theft	0.34	0.53	1.55
Injuries	0.20	0.32	1.60
Homicides	0.05	0.09	1.74
Vehicle theft	0.13	0.18	1.39

a/ There are 149,586 blocks, 27,030 city blocks, and 917 neighborhoods.

Source: Mejía, Ortega and Ortiz (2014).

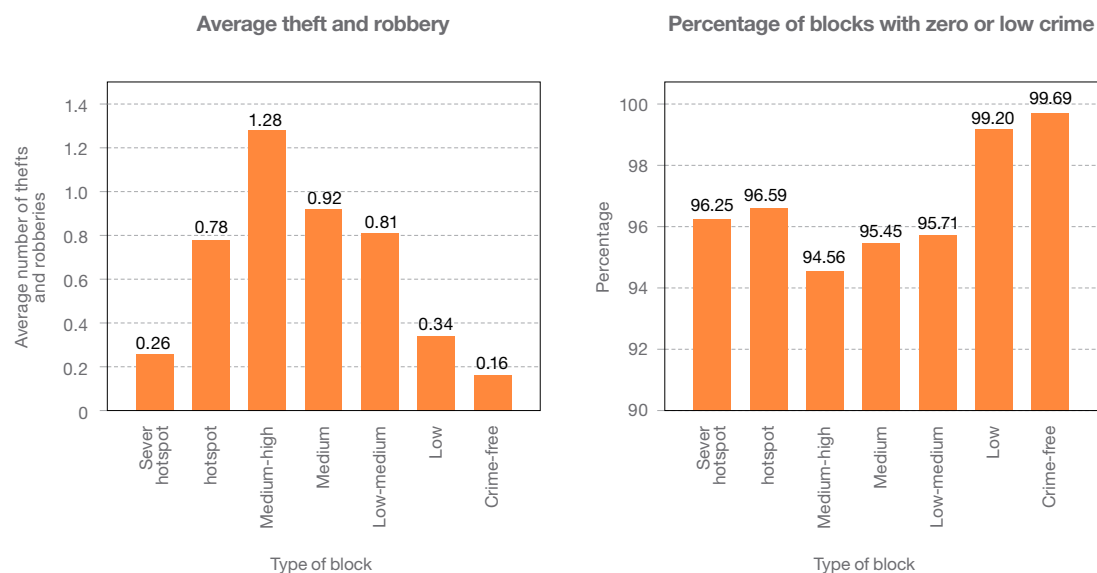
20. Regression analysis indicates that an increase of ten points in the frequency of hotspots for street thefts and robberies is associated with an increase of more than three thefts and robberies per block in those blocks not classified as hotspots.



Moreover, not always are the hotspots' surroundings more dangerous than the surroundings of blocks with less crime. Figure 3.3 (see p. 102), presenting this information for the neighborhood *La Capuchina*, speaks for itself, with a block of 69 thefts in 2011-2012 surrounded by many blocks of zero crime. This seems to be a general outcome, as suggested by Chart 3.4. The left panel shows the fraction of blocks with few thefts that surround each block group presented in Table 3.6 (see p. 109). The right panel shows, for each block group, the average number of crimes in the 10 blocks closest to it.

**In the 2011-2012 period, 17% of the hotspots for thefts and 30% of the hotspots for injuries had completely crime-free surroundings.**

**Chart 3.4** Criminal environment according to block type in Bogota (2011-2012)



Source: Mejía, Ortega and Ortiz (2014).

The blocks with low crime (those in the groups “crime-free” and “low crime”) have less criminogenic surroundings. However, hotspots do not appear to have highly criminogenic surroundings. In fact, 17% of the hotspots for thefts and 30% of the hotspots for injuries have completely crime-free surroundings (Mejía, Ortega and Ortiz, 2014). What accounts for these high-crime segments in such low-crime contexts?

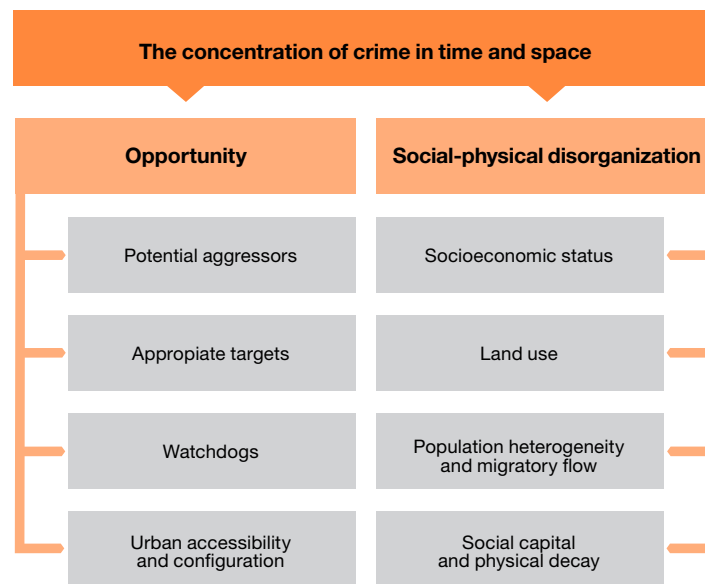
To sum up, the distribution of crime across space and over time is far from random. Crime is heavily concentrated in spaces as specific as blocks, and these hotspots bear high levels of crime consistently. To understand the nature of crime, it is necessary to start the analysis from a geographical space that is as specific as possible: it is necessary to zoom in.

Each space-time cell has a particular configuration which depends on the space's topography (flat space, hillside, alley, roundabout, street intersection); the social ties among its neighbors and quality of public spaces.

## Perspectives on the concentration of crime

What could account for two adjacent blocks being so different in terms of crime? What could account for certain hours being more criminogenic than others? Two complementary perspectives, summarized in Figure 3.6 help understand such phenomena: the theory of crime opportunity and the theory of physical and social disorganization.

**Figure 3.6** Explaining crime concentration



Source: Prepared by CAF staff.

Each space-time cell has a particular configuration that determines its proclivity to bear crime. This configuration is varied and depends on the space's topography (flat space, hillside, alley, roundabout, street intersection), the social ties among its neighbors, the latter's patterns of mobility and citizen action, and features like lighting, cleanliness, and quality of public spaces.

### THE ROLE OF OPPORTUNITIES

According to the theory of crime opportunity, for a crime to take place there must be an individual with a certain crime propensity (the potential aggressor) and an environment that gives that individual the opportunity to commit such crime. The potential aggressor assesses the context—including the potential victims, the size or quality of the loot, and the chance of success—and decides accordingly wheth-

er to commit a crime at that time and in that place. The context affects the opportunities for crime, and these opportunities affect the incidence of crime. In other words, there is a causal relationship between context and crime. Instead of focusing on understanding the crime propensity of the aggressor, the theory of crime opportunity zooms in on the act: when, where, and under what circumstances does it take place?

A cornerstone of this approach is the “routine activity theory” (Cohen and Felson, 1979), which holds that for a crime to take place, three elements must concur in time and space: a potential aggressor, the absence of an effective suppressor, and an suitable target—three elements that make up the so-called “crime triangle”. The suppressor is typically the guard watching over the criminal target, be it a guard in a parking lot, a police officer on the street, or even the very citizens<sup>21</sup>. Some consider other factors of influence on the aggressor to be effective suppressors, such as a family member in whose presence a potential aggressor behaves better (Felson, 1986, Sherman, 1995). The crime targets, meanwhile, may be more or less attractive. The greater their value and the easier their concealing and handling, the more attractive crime targets will be. The approach then suggests that crime rates are higher in some city areas even if the number of criminals is distributed evenly throughout the city either due to more and better criminal targets or due to poor surveillance in those areas.

The three elements that make up the crime triangle are not distributed randomly in space and time, but they emerge, rather, from people’s interaction patterns and from the environment in which they perform their routine activities. People’s usual places of origin and destination—work, home, recreation-sites—and the paths linking these “nodes” shape the spatial distribution of crime opportunities. For example, a person who every Friday at 12pm withdraws large amounts of cash from the same bank provides a clear opportunity for a criminal. Similarly, it has been established that as specific spaces as a barbershop in the Sucre municipality, for example, can become a hotspot for being the (accidental) meeting point of rival gang members. Space-time coincidence occurs, among other reasons, due to the coincidence of people’s life patterns.

Felson and Clarke (1998) have highlighted ten principles stemming from the theory of crime opportunity. The first principle is that “opportunities play an important role” in the occurrence of a crime. The second principle is that “opportunities are highly crime specific”, e.g., situations favoring vehicle theft do not necessarily favor identity theft<sup>22</sup>. This is consistent with the evidence from cities in Colombia, presented above, in which the incidence of homicide, thefts, and burglaries, predominates in different geographical areas and with different frequencies at different times of the day. The connection between the theory of crime opportunity and the

**For a crime to take place, three elements must concur in time and space: a potential aggressor, the absence of an effective suppressor, and an suitable target.**

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21. Citizens can exert a conscious surveillance, when they organize to that end, but also a “natural” surveillance, that is, one stemming from their routine activities. For example, a person returning home from work on foot can become, without seeking it, a watchdog able to identify a perpetrator or even take an active part in crime prevention.

22. It is thus possible for an intervention that reduces the opportunities for a certain type of crime to favor that of others, however, clearly some interventions operate transversely, reducing the opportunities for all types of crime, such as increased police presence.

**Disorder may signal the residents' unwillingness or inability to confront crime directly or indirectly, which potential criminals perceive as a circumstance or opportunity that portends success and encourages crime.**

criminology of place lies on the principle that "opportunities are concentrated in time and space". Therefore, to understand why crime is concentrated in time and space, it is critical to understand why opportunities are concentrated at certain times and in certain spaces<sup>23</sup>.

## **PHYSICAL AND SOCIAL DISORGANIZATION**

The physical and social disorganization theory may also be relevant to understand the relationship between crime and space. While it was originally used to explain differences among communities, it may be relevant to understand the relationship between crime and space in smaller geographical units (Weisburd, Groff and Yang, 2012).

This theory proposes that differences in crime rates can be traced to failures in communal institutions (family, schools, churches, etc.) and failures in those community relations that give ground to cooperative relationships among people (Jensen, 2003). These failures can manifest themselves as physical disorder—vacant land, broken windows, graffiti, trash—or social disorder—prostitution, alcohol, begging, fighting, and violent arguments (Sampson and Raudenbush, 1999). In any case, disorder may signal the residents' unwillingness or inability to confront crime directly or indirectly (Greenberg and Rohe, 1986, Skogan, 1990), which potential criminals perceive as a circumstance or opportunity that portends success and encourages crime. In short, disorder sends the signal to potential aggressors that committing a crime may be of little consequence (Kelling and Coles, 1996).

Some characteristics of the social structure, such as socioeconomic status, mixed land use, racial heterogeneity and residential stability, are important in this theory. These structural features, which reflect the social fabric, can not only shape individual behavior and affect social capital and collective efficacy, but also decant in physical and social disorder. For example, lower socioeconomic classes may have a hard time keeping their residences in good shape. Thus, low socioeconomic status may be associated with little capacity to correct or avoid physical disorder. Also, mixed residential use or very little residential stability may weaken the bonds among residents and be associated with lower or weaker social control and a higher incidence of crime.

The relationship between social capital and crime is bidirectional. Ongoing exposure to violence can undermine trust among neighbors, thus limiting collective efficacy, i.e., residents' willingness to intervene in public affairs for the common good. In order to build and maintain social capital it is important for societies to keep up mechanisms that promote interaction and trust among families, sectors, schools, and even generations. Community police can also promote trust among citizens and between citizens and the police.

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23. The fourth principle states that "crime opportunities arise from routine activities", the fifth principle, that "a crime affords the opportunity for a new crime", the sixth principle, that "some products offer more tempting crime opportunities than others", and the seventh principle, that "social and technological changes may lead to new opportunities for crime". The remaining three principles are related to prevention strategies and will be discussed in the next section.

## EMPIRICAL VALIDITY OF THESE THEORIES

Some studies have tried to assess the empirical validity of these theories (Sampson and Raudenbush, 1999, Weisburd et al, 2012) though, unfortunately, the evidence for the region is extremely poor. Studies for the United States find a negative relationship between collective efficacy and the rate of kidnappings and killings between 1995 and 2004 (Maxwell, Garner, and Skogan, 2012). For the region, a study in Medellin documents the importance of collective efficacy in reducing homicides and the perception of violent crime, even after adjusting for socioeconomic factors and paramilitary presence (Cerdá *et al.*, 2008). Box 1 summarizes a recent paper that analyzes the spatial distribution of crime in Seattle and its connection with the theories of opportunity and social disorganization.

### **Box 3.1** Concentration of crime and the theories of crime opportunity and social disorganization: evidence for Seattle

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As in many cities, Seattle's crime is heavily concentrated in hotspots. Indeed, a recent study found that between 4.7% and 6.1% of street segments (depending of the year) account for 50% of the crimes committed between 1989 and 2004 (Weisburd, Groff and Yang, 2012). To explain this concentration, the study combines the perspectives of crime opportunity and social disorganization.

To proxy for the abundance of potential aggressors, the authors build an indicator that integrates the fraction of youth runaways with the fraction of youth with low academic achievement. To proxy for the presence of criminal targets, they use the number of job posts in each street segment and the presence of public facilities (parks, hospitals, schools, libraries, etc.) and commercial establishments. Finally, to proxy for police surveillance, they use the location of police and firefighter stations, and to proxy for informal surveillance they use the fraction of vacant land in which the absence of a manager undermines public control. They also take into account the quality of street lighting as a complement to surveillance.

With respect to physical and social disorganization, they analyze "structural features" of the place, such as socioeconomic status, land use, racial heterogeneity, proximity to downtown, and the presence of physical disorder. They also include measures of social capital. To proxy for the socioeconomic status of the street segment they use the value of residential property and the presence of housing public assistance programs. To proxy for physical disorder they use the number of incidents such as graffiti, abandoned cars, trash, and dilapidated houses, reported to the respective authorities. To proxy for social capital and public control they use the number of unsupervised teenagers and the percentage of active voters, assuming that active voters are more willing to participate in public affairs for the common good.

All these variables show a high concentration as well as interesting patterns of spatial location. For example, 50% of "youth at risk" are concentrated in 3% to 4% of street segments and half of employees work in 0.8% of street segments. Only about 6% of street segments have an emergency station within a quarter mile and 50% of all public lighting is

concentrated in 11.5% to 13% of street segments. Fifty percent of physical disorder marks are in 1.5% to 3% of street segments, while 50% of active voters live in 12% to 13% of street segments. Despite this concentration, these indicators vary hugely by block, with hotspots for crime opportunities and physical and social disorganization being sparked throughout Seattle.

Finally, the authors integrate all these variables from the crime opportunity and social disorganization theories along with certain crime variables into a statistical model. They include segment length and the average crime rate on the streets within a quarter mile from each segment. First, they estimate a multinomial logit model to explain to which group each street segment corresponds, having obtained the groups through a previous statistical classification exercise. The model shows a good fit, explaining more than 63% of the variability in the crime variables. The authors then analyze which factors make a particular segment a chronic hotspot versus a crime-free segment. They find the strongest association in the case of the variables reflecting the presence of victims, particularly the number of employees. The variables underscoring the presence of potential aggressors are also statistically and quantitatively significant. Among the variables reflecting social disorder, the value of properties and the proxies of physical disorder are the most statistically and quantitatively significant. The authors conclude that both types of variable are useful to explain crime patterns at the street segment level and that hotspots for crime indeed seem to be associated with hotspots for crime opportunities and social disorganization.

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**Source:** Prepared by CAF staff base on Weisburd, Groff and Yang (2012).

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## A LOOK AT THE CAF SURVEY

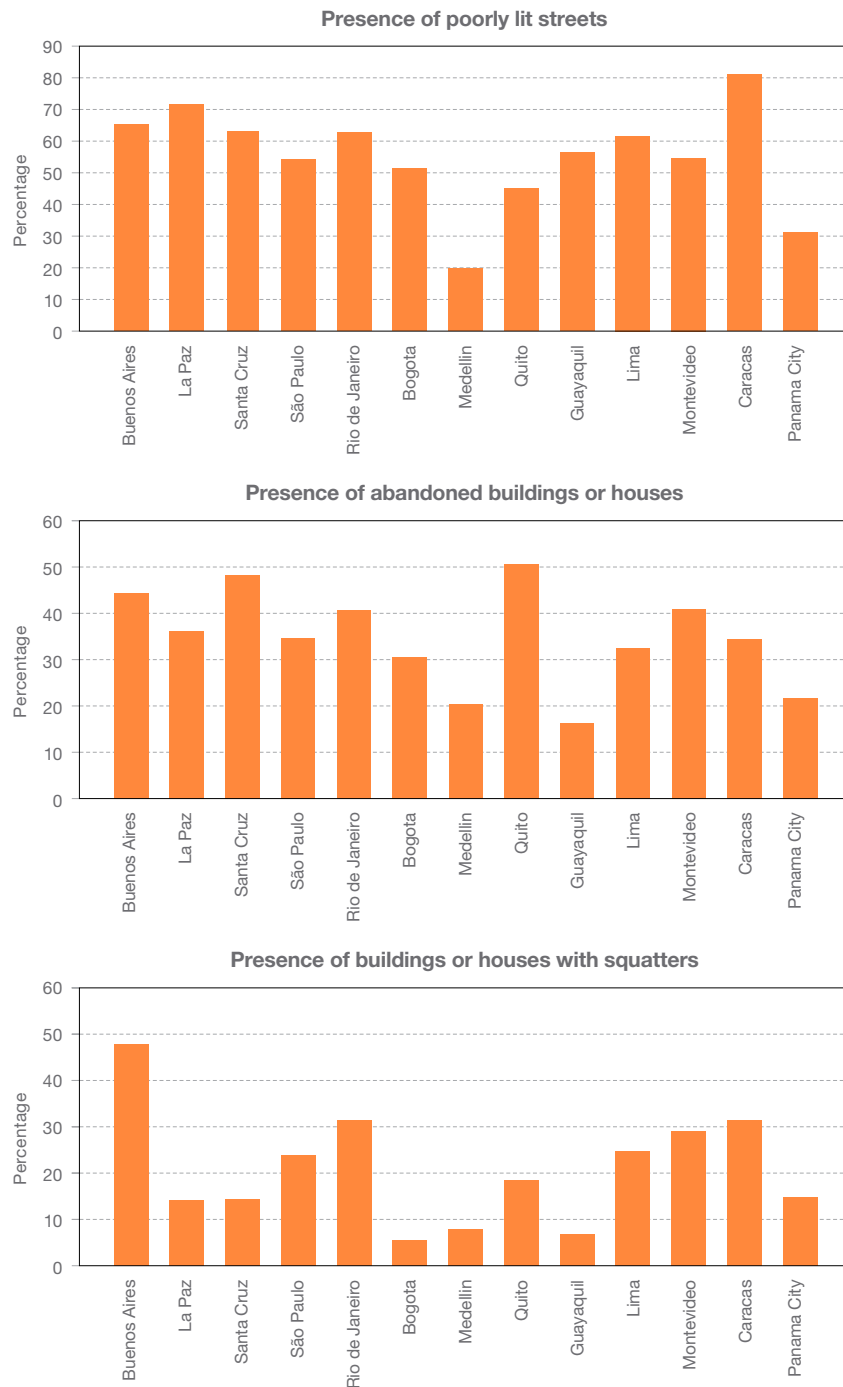
If there is a connection between criminal activity, crime opportunities, and physical and social disorganization, it is worth reviewing the state of physical and social disorganization in Latin American cities. This section does just this, relying on the information elicited by the 2013 CAF survey for 13 of the main cities in the region<sup>24</sup>.

Chart 3.5 presents information on specific marks of physical disorganization, such as poorly lit streets and abandoned houses or houses with squatters within three blocks of the respondent.

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24. The CAF survey is a yearly household survey undertaken in the main cities of the region. In 2013, the survey covered Buenos Aires, La Paz, Santa Cruz, São Paulo, Rio de Janeiro, Bogota, Medellin, Quito, Guayaquil, Montevideo, Caracas and Panama City.

**Chart 3.5** Presence of physical disorganization within three blocks in Latin American cities (2013)

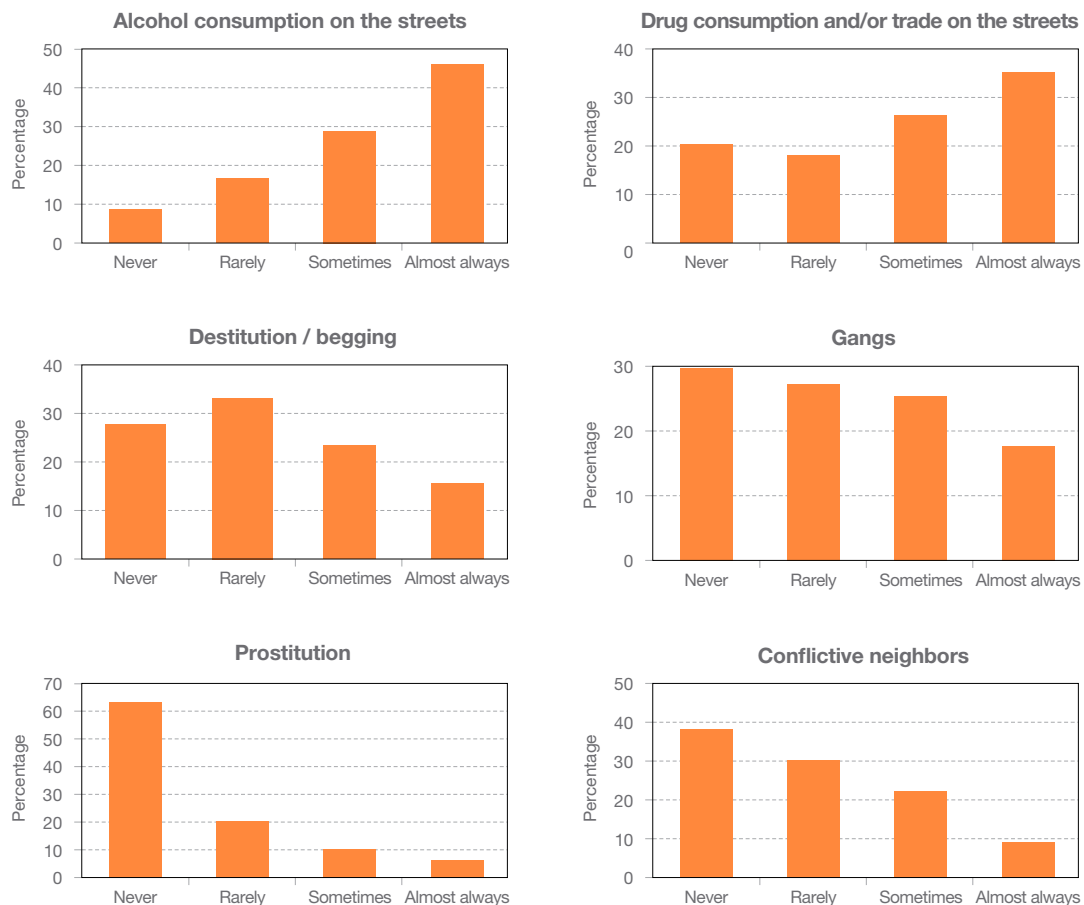


Source: CAF (2013).

**More than 60% of respondents in Caracas, La Paz and the Metropolitan Region of Buenos Aires report poorly lit streets around their homes.**

Despite quite a bit of variation, signs of physical disorder are widespread. Caracas, La Paz and the Metropolitan Region of Buenos Aires (RMBA) have the severest lighting problems. In all three cases, more than 60% of respondents report poorly lit streets around their homes. Medellin, on the other side, has the lowest percentage of respondents reporting lighting deficiencies. Quito, Santa Cruz and RMBA have the highest incidence of abandoned buildings, reported by more than 40% of respondents. Even in Guayaquil and Medellin, on the other side of the spectrum, around 20% of respondents report this problem, too. Finally, RMBA, Rio de Janeiro and Caracas show the highest incidence of buildings or homes with squatters. This indicator looks less problematic overall, but still points to a non-negligible situation.

**Chart 3.6** Presence of social disorganization in neighborhoods in Latin American cities (2013)<sup>a/</sup>



a/ Cities: Buenos Aires, La Paz, Santa Cruz, São Paulo, Rio de Janeiro, Bogota, Medellin, Quito, Guayaquil, Montevideo, Panama city and Caracas.

Source: CAF (2013).



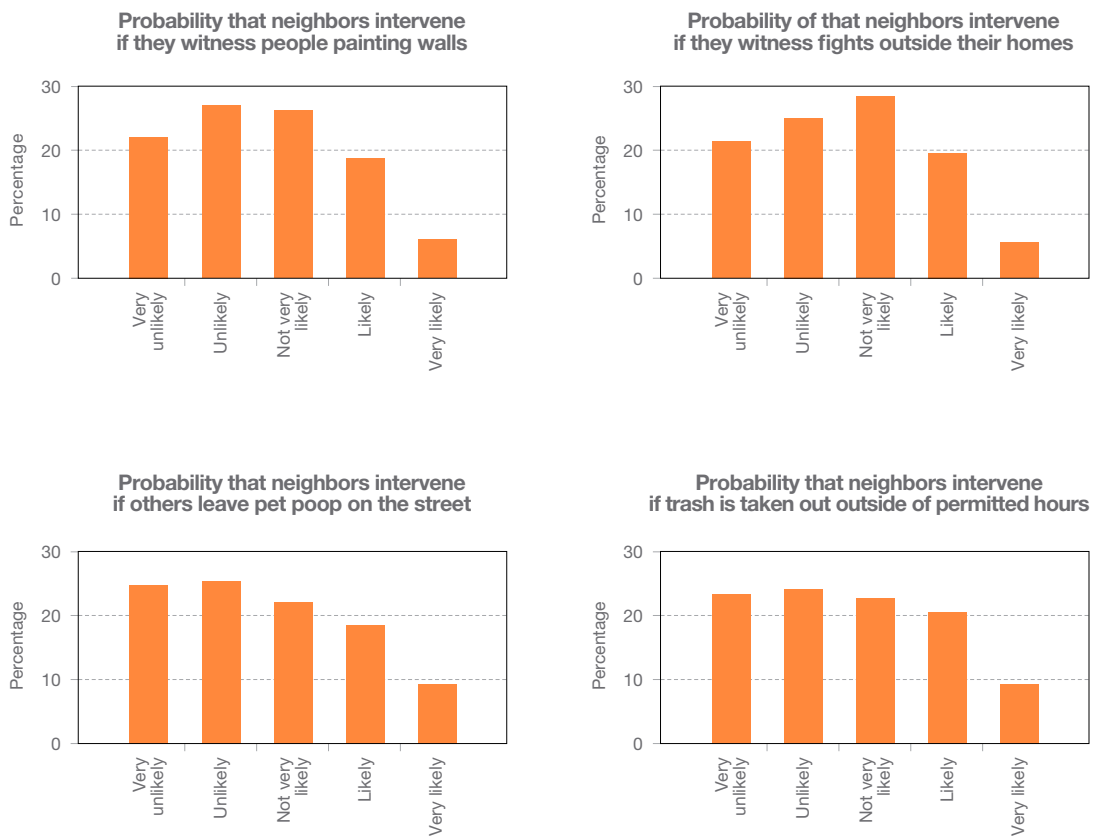
Chart 3.6 highlights indicators of social disorder in the area or neighborhood of residence of the respondents, such as alcohol and drug consumption abuse or sale on the street, homelessness, gangs, prostitution, and conflicting neighbors.

**46% of respondents report seeing alcohol abuse, and 35% of respondents report seeing drug dealing and abuse, “almost always” in the public area of their neighborhoods.**

Alcohol and drug abuse and sale seem quite alarming. Forty-six percent of respondents report seeing alcohol abuse, and 35% of respondents report seeing drug dealing and abuse, “almost always” in the public area of their neighborhoods. And more than 60% of respondents report seeing drug dealing and abuse “almost always” or “sometimes”.

Charts 3.7(a) and 3.7(b) show some metrics associated with social cohesion, collective efficacy, and social capital.

**Chart 3.7(a)** Social capital, social control, and social cohesion in Latin American cities (2013)<sup>a/</sup>



a/ Cities: Buenos Aires, La Paz, Santa Cruz, São Paulo, Rio de Janeiro, Bogota, Medellin, Quito, Guayaquil, Montevideo, Panama City and Caracas.

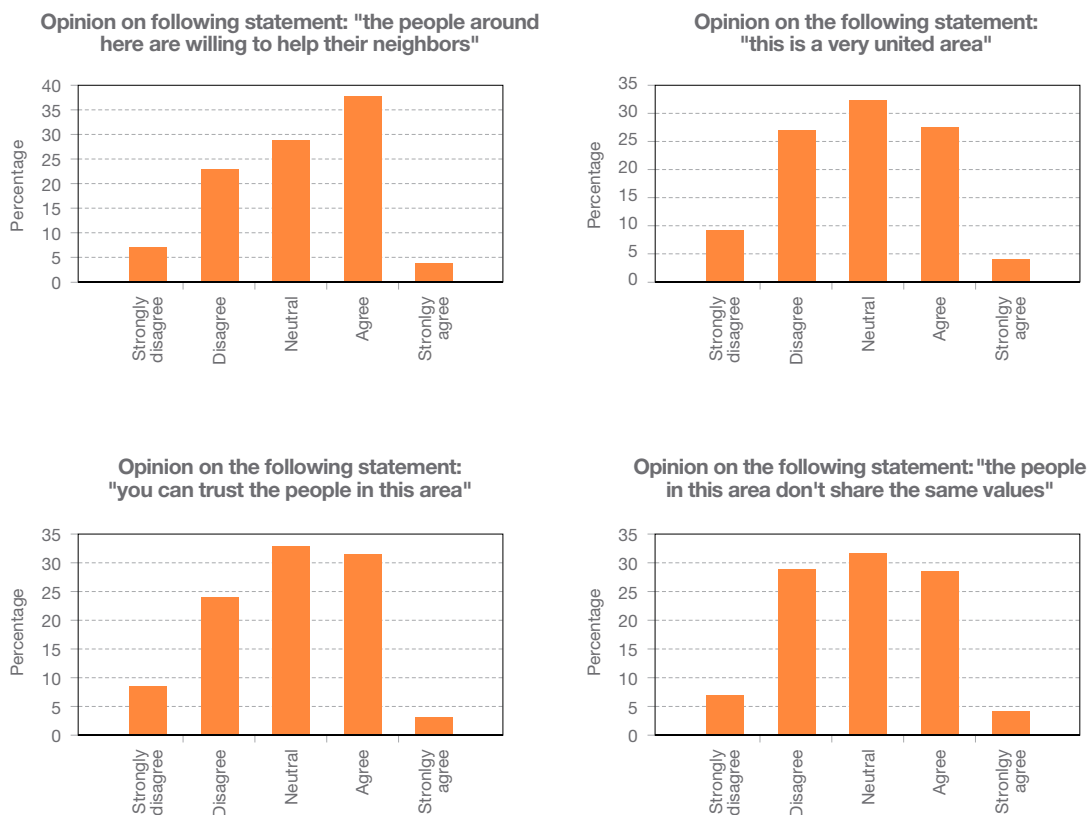
Source: CAF (2013).

**More than 60% of respondents considered it very unlikely, unlikely or not very likely for neighbors to confront the offender.**

Chart 3.7(a) suggests little citizen action against offenses such as wall painting, fighting, pet poop, or garbage outside the permitted hours. In all cases, more than 60% of respondents considered it very unlikely, unlikely or not very likely for neighbors to confront the offender.

The metrics of Chart 3.7(b), while less extreme, also point to a shortage of social cohesion. About 30% of respondents generally disagree with statements associated with bonds of comradeship among neighbors.

**Chart 3.7(b)** Social capital, social control and social cohesion in Latin American cities (2013)<sup>a/</sup>



a/ Cities: Buenos Aires, La Paz, Santa Cruz, São Paulo, Rio de Janeiro, Bogota, Medellin, Quito, Guayaquil, Montevideo, Panama City and Caracas.

Source: CAF (2013).

The low collective efficacy suggested by Charts 3.7 (a) and 3.7 (b) can be traced to lack of "civic culture". Indeed, those citizens who are more aware and respectful of the values of coexistence, are not only less prone to break rules and commit crimes, but also more likely to intervene in matters of collective interest and confront the rule infringements of other citizens. A comprehensive crime fighting

policy can thus incorporate elements of civic culture, as has been the case in Bogota since the mid-nineties. This experience is briefly outlined in Box 3.2.

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**Box 3.2 Promoting civic culture: the case of Bogota**

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Since 1995 the city of Bogota has undergone renowned change. Initiated by Mayor Antanas Mockus and advanced by his successors, this change has relied on building a “civic culture” on the idea that violence can be resisted through respect and peaceful interaction among citizens.

In essence, these leaders promoted the adoption of shared habits, actions and regulations conducive to a sense of belonging and peaceful coexistence, and to recognition and respect for civic rights and duties. Civic culture affects the behavior of individuals in the public sphere in three ways: the self-regulation of the individual, the regulation among citizens and the regulation prompted by the criminal justice system.

In practice, civic culture was promoted through a set of different programs. For example, “traffic mimes” emulated rule-breaking pedestrians (e.g., those walking outside the zebra crossing) and made disapproving faces to rule-breaking drivers (e.g. those running a red light). And even citizens were encouraged to use cards to approve (thumbs up) or disapprove (thumbs down) the behavior of other citizens, thus promoting self-regulation.

Other initiatives related to the promotion of civic culture were “Hour of the Carrot”, “Women’s Nights” and “Culture to the Park”. “Hour of the Carrot” made nightclubs close at 1am to avoid excessive drinking leading to violence and accidents. “Women’s Nights” relied on the premise that there was a higher incidence of crime by men and, on some Fridays, encouraged women to “seize the night” and men to stay home; violence declined 40% on those evenings, as a result. And “Culture to the Park”, a three-day music festival in public spaces, especially in the park Simón Bolívar, was intended to favor the peaceful interaction of people from different generations and/or social strata.

Promoting the use of public spaces required adequate infrastructure. Thus, some mayors of the city (especially Peñalosa) took action on this front. They created the Office of Public Spaces and improved sidewalks, lighting, traffic signs, and ornaments. The system TransMilenio improved public transportation. And the “Civic Culture Observatory”, created in 1996, resulted in greater transparency in key statistics (e.g., urban violence) and constant evaluation and monitoring of various initiatives.

Change in civic culture came with a big reduction in crime. The homicide rate declined from 88 to 22 per 100,000 inhabitants in a decade and traffic accident-related deaths dropped 20% thanks to increased compliance with traffic rules by both drivers and pedestrians. Moreover, the program was very popular, with 61% of citizens considering it the most important government initiative and 96% stating that the programs should be maintained. Beyond the extent to which the reduction in crime could be attributed to the civic culture initiatives, their beneficial effect on the city are unquestionable.

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**Source:** Prepared by CAF staff based on Riaño (2011).

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**A comprehensive crime fighting policy can thus incorporate elements of civic culture, as has been the case in Bogota since the mid-nineties.**

What is the perception of crime in the residential environment (neighborhood or area) of Latin American citizens? Chart 3.8 provides information on the perception of victimization in the city and the neighborhood (left panel), and on the perceived frequency of “acts of aggression and/or crimes” in the neighborhood (right panel).

**Chart 3.8** Crime and perception of crime in Latin American cities (2013)<sup>a/</sup>



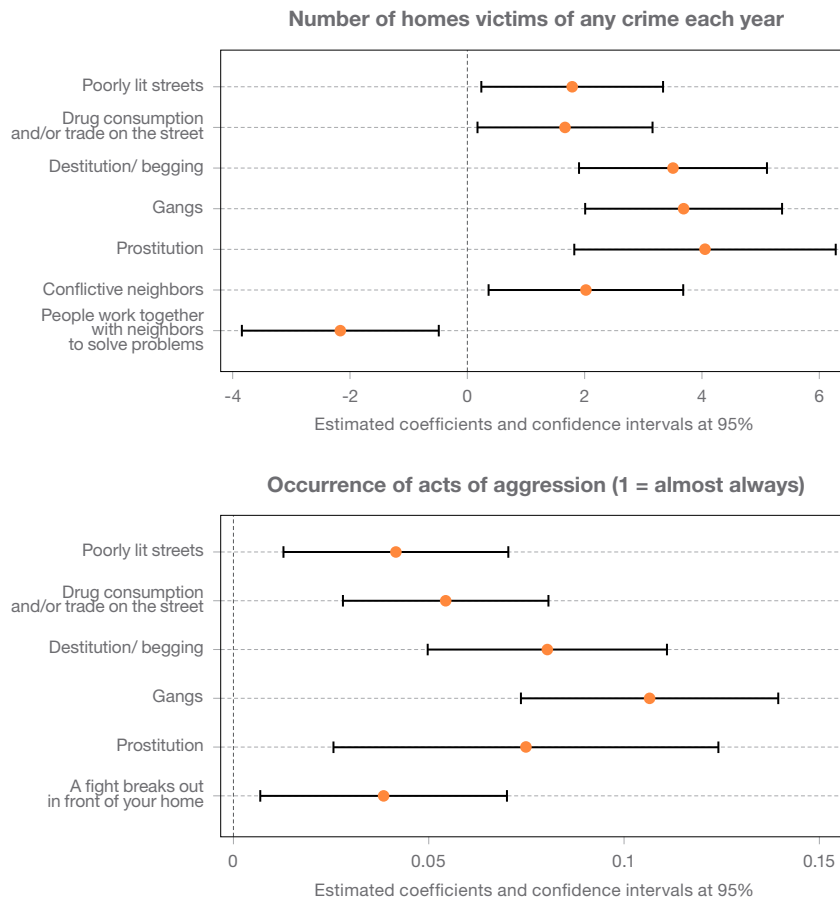
a/ Cities: Buenos Aires, La Paz, Santa Cruz, São Paulo, Rio de Janeiro, Bogota, Medellin, Quito, Guayaquil, Montevideo, Panama City and Caracas.

Source: CAF (2013).

The perception of victimization appears to be greater in Caracas and Bogota. Furthermore, in all cities the perception of crime in the neighborhood is lower than the perception of victimization in the city. About 56% of respondents report seeing acts of aggression or crimes almost always (17.6%) or sometimes (38.1%) in the area where they live.

It is interesting to explore the level of association between measures of physical and social disorganization and the perception of crime. Chart 3.9 shows the results of a statistical exercise along these lines, including the questions or variables that turned out statistically significant along with the estimated coefficient for each and its respective confidence interval segment (at 95%).

**Chart 3.9** Physical and social disorganization and perception of crime in Latin American cities (2013)<sup>a/ b/</sup>



a/ The charts report the coefficients and confidence intervals at 90% estimated by ordinary least squares (OLS) and controlling for perception of the number of homes victims of crime in the city every year, the presence of squares, parks, pedestrian streets, and boulevards, and the perception of police presence.

b/ Cities of Buenos Aires, La Paz, Santa Cruz, São Paulo, Rio de Janeiro, Bogota, Medellin, Quito, Guayaquil, Montevideo, Panama City and Caracas.

Source: CAF staff based on CAF (2013).

Lighting problems, begging, conflicting neighbors, and poor social cohesion are associated with greater (perceived) insecurity, although the results are quantitatively modest<sup>25</sup>. For example, residents who respond that people in their community work together to solve neighborhood problems, perceive a 2.14 percentage points lower victimization rate than those who do not. Although this association is verified with measures of crime perception rather than administrative measures of crime, perception matters (and quite a bit!) for welfare.

25. Obviously this exercise does not identify whether there is indeed a causal relationship between physical and social disorganization and crime measures. However, evidence on a causal relationship between place-targeting interventions and the crime rate is shown below.

Lighting problems, begging, conflicting neighbors, and poor social cohesion are associated with greater (perceived) insecurity.

## The criminology of place and crime fighting

In their work on crime opportunity, Felson and Clarke (1998) highlight three principles linked to crime fighting<sup>26</sup>. First, one can fight crime by acting on the elements that affect crime opportunities. Second, reducing the opportunities for crime generally does not produce “crime displacement”. Third, it is possible that targeted policy has positive spillover effects on adjacent geographical areas, i.e., that there is “diffusion of benefits”<sup>27</sup>.

Felson and Clarke’s first principle motivated the design and implementation of a set of strategies focused on the places and circumstances underlying crime (Welsh and Farrington, 2010). However, the evidence regarding displacement and/or diffusion of benefits as a consequence of these policies has been mixed. Some studies find evidence on crime displacement, others on diffusion of benefits, and others no impact whatsoever on the adjacent areas to those intervened. There seems to be, though, a bias in favor of the idea of diffusion of benefits<sup>28</sup> (e.g., Clarke and Weisburd, 1994, Weisburd *et al.*, 2006, Braga and Weisburd, 2010, Braga, Papachristos and Hureau, 2012).

Crime fighting interventions based on the criminology of place can be of three types: place-based policing strategies, interventions on the physical space, and other interventions, such as those fostering social capital or limiting the sale of alcohol<sup>29</sup>.

### PLACE-BASED POLICING STRATEGIES

If there are places and times of varying danger within municipalities and urban areas, it seems reasonable to increase police presence in the right places and at the right times. This is the foundation of hotspot policing, already widespread in some developed countries. For example, a recent survey of 176 police departments in the United States revealed that almost 90% of them relied on hotspot policing to deal with violent crimes (Braga, Papachristos and Hureau, 2012).

In contrast, hotspot policing is still rare in Latin America. A recent exception is the strategy adopted by the Sucre municipality, in the Metropolitan District of Caracas. The authorities identified 92 blocks as homicide hotspots and increased police

26. These principles, conceived from the perspectives of crime opportunity, translate perfectly well into the physical and social disorganization approach.

27. Both crime displacement and diffusion of benefits can be thought of not only in a geographical sense but also with regard to time, type of crime, and type of victim, among others. The vast majority of studies focus on the geographical dimension.

28. Intuitively, whether there is crime displacement or diffusion of benefits could be due to a myriad of factors, including the type of crime, the type of intervention, and the configuration opportunities in the treated areas and their surroundings. For example, if the adjacent areas present lots of crime opportunities, crime displacement might be easier. Or if the adjacent areas are relatively integrated with the treated area (e.g., visually, given the topography) the diffusion of benefits would be more plausible.

29. These interventions can be interconnected and their separation may be somewhat artificial. For example, a new square or better public space can motivate local governments to increase the police presence in these places and, in turn, activate informal social control.

presence in some of them, with 4 daily 15-minute stops. The local police stuck to the old policing routine in rest of the municipality. There were incentives for police officers to comply with the hotspot policing plan during the launch phase and, in addition, compliance was monitored by GPS<sup>30</sup>.

What is the effect of these police strategies on criminal activity? Braga, Papachristos and Hureau (2012) provide an excellent literature review and a meta-analysis of 19 studies, 17 of which refer to cities in North America, one to a case in Australia, and one to a Latin American country, Argentina<sup>31</sup>. Their review is limited to experimental or quasi-experimental studies (which favor causal interpretation) and on interventions in smaller geographical areas than a neighborhood or a community.

Eighty percent of the reviewed evaluations provide evidence of significant crime reduction in the treated areas. The greatest impact was documented in the case of Argentina: a 75% reduction in vehicle theft. Similarly remarkable effects were found in other quasi-experimental studies, including one on the New Jersey case: a 58% reduction in drug-related crimes and a 45% reduction in the incidence of prostitution (Weisburd et al, 2006). The results of the experimental studies were more modest, but still important in some cases. For example, Taylor, Koper, and Woods (2011) find a 33% reduction in street violence in Jacksonville, Florida.

The meta-analysis points to a significant and positive overall effect on the treated areas, albeit a modest one. It highlights differentiated effects by type of crime, with the largest effect being on drug-related crimes (down 24.9%) and the lowest on property theft (down 8.4%). And it also shows heterogeneous effects by type of police intervention, with problem-oriented policing strategy more than doubling the effect of the traditional strategy<sup>32</sup>.

Most of the studies considered in the review assess whether there was crime displacement and/or diffusion of benefits. Only three of the 17 measurements suggest displacement. In contrast, eight measurements suggest diffusion of benefits. The meta-analysis also suggests significant, though modest, overall diffusion of benefits.

## INTERVENTIONS ON THE PHYSICAL SPACE

Theoretical approaches such as “broken window” propose that decay in the physical environment can promote criminal activity. Thus, improving the quality of public space should cause a reduction in criminal activity in the treated area and potentially around it.

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30. CAF has sponsored a randomized impact assessment of this strategy (Kronick and Ortega, 2014), which not only represents the first assessment of a hotspot police strategy in the region, but also the first assessment focused on homicide hotspots. As we went to press, the assessment results were not available yet. However, it appears that the intervention has already contributed to manage and control policing in a better way.

31. Di Tella and Schargrodsky (2004) assessed the effect of changes in police presence following a terrorist attack in Buenos Aires. The police effort was focused on particular micro-spaces, although not necessarily crime hotspots. In that sense, while not a “pure” hotspot strategy, it was useful to assess the impact of police presence in very specific geographical areas.

32. This type of strategy aims at changing the underlying conditions that favor the occurrence (or opportunity) of crime in the treated areas while the traditional strategy consists of increasing the typical police activity in the treated areas (see Chapter 5).

**Studies of the place-based policing strategies show evidence about a significant reduction in crime in the treated spaces.**

**Improving lighting caused a 21% (statistically significant) reduction in the crime of the treated areas.**

The first element of the physical environment that can be linked to crime is lighting. Lighting shortcomings can encourage crime through two channels. First, better lighting favors the recognition of potential aggressors, facilitating the “natural surveillance” afforded by citizens in their daily activities. Second, a well-lit street, like a place in good shape, can make neighbors proud of that street and enhance community cohesion and informal social control (Welsh and Farrington, 2007).

Welsh and Farrington (2007) reviewed 13 evaluations of public space lighting interventions, 8 of which refer to the United States and 5 to the United Kingdom. Their meta-analysis suggests that improving lighting caused a 21% (statistically significant) reduction in the crime of the treated areas, the overall effect being largely explained by the big impacts of the United Kingdom interventions<sup>33</sup>.

The meta-analysis highlights other interesting findings. First, nighttime crimes do not drop significantly more than daytime crimes, which the authors interpret as a validation of the citizen-control hypothesis. Second, none of the four papers that assess crime displacement and diffusion of benefits find evidence of crime displacement, while two of them find diffusion of benefits. Finally, some studies include a cost-benefit analysis and suggest that the monetary benefits of reducing crime far outweigh the financial costs of the intervention (e.g., Painter and Farrington, 2001): improving lighting appears to be a cost-effective part of a comprehensive crime-fighting plan.

Another element that could help reduce crime is the improvement of public spaces. Local governments adopt such improvements often, even if not always with crime fighting in mind. The program “*Barrio Mío*” (My Neighborhood), promoted by the Municipality of Lima, is a case in point. The program engages the community, offering training and encouragement to neighbors to protect the buildings. It seeks to boost social organization, so that communities can generate their own development and participate in the planning and building of their own neighborhood (e.g. salvaging abandoned buildings)<sup>34</sup>.

Another, more focused example is the program “*Mi Parque*”, undertaken by a Chilean foundation dedicated to establishing quality green areas in vulnerable communities in Chile. Relying on the active participation of the communities in need, public-private funding, and efficient landscape design, the foundation carried out 53 projects in 386 thousand square meters between 2009 and 2011, reaching 152,000 beneficiaries<sup>35</sup>. By involving communities in the transformation of their physical environment, the intervention goes beyond just building a public area, boosting social capital and cohesion.

In the context of this report, CAF sponsored a randomized impact evaluation of *Mi Parque*, the first experimental evaluation of a program aimed at rehabilitating a

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33. In the case of the United States, half of the studies find significant effects and half no effects. All the United Kingdom evaluations find a positive effect, although one of the assessed interventions combined lighting improvements with other interventions (e.g., fencing certain areas).

34. See Municipalidad Metropolitana de Lima (2013).

35. See *Mi Parque* (2013).



public space in vulnerable urban areas in Latin America. First, the researchers generated 30 pairs of “parcels” from the eligible pool of *Mi Parque*<sup>36</sup>. Then, they randomly assigned one parcel in each pair to integrate the treatment group, with the other parcel going to the control group. Finally, they randomly selected a sample of 25 to 30 households in the vicinity of each parcel, and they administered a questionnaire to these households both before and five months after the intervention.

The study explores the impact of the program in different dimensions, such as use of the park and other public spaces, social capital, citizen security, investment in the residence (interior and exterior), and life satisfaction. Table 3.8 summarizes the results of the study based on a preliminary sample of 20 out of the 60 neighborhoods proposed for the evaluation.

**The program “*Mi Parque*” reduced criminal episodes by 0.3 standard deviations.**

**Table 3.8** Average impact of the intervention *Mi Parque* regarding each result category

Dimension	Category	Average effect	Standard error	Number of observations
Park use	Park use	0.670***	0.091	229
	Park maintenance	0.457***	0.107	308
Social capital and ownership over the neighborhood	Ownership over neighborhood	0.066	0.045	315
	Trust and relationship with neighbors	0.052	0.048	306
	Participation in community organizations	0.365***	0.097	359
Safety	Perception of neighborhood safety	0.170*	0.097	200
	Perception of park safety	0.369***	0.102	230
	Crime in the neighborhood	-0.098	0.062	206
	Crime in the park	-0.305***	0.098	201
Investment and price of residences	Investment on residence façade	0.123*	0.070	348
	Other investments in the residence	-0.047	0.073	353
	Residence price	0.186*	0.107	159
Other factors	Environmental preferences	0.145	0.091	344
	Perception of health, satisfaction, and family relationships	0.061	0.059	262
	Neighborhood oriented towards leisure time	0.054	0.045	200

\*, \*\*, \*\*\* denote statistically significant differences at the 10%, 5% and 1% levels, respectively.

Source: Braun, Gallego and Soares (2014).

36. To be eligible, parcels must be deteriorated public spaces in vulnerable neighborhoods of the Metropolitan Area of Santiago de Chile. The pairing relies on an index based on the parcel size and the socioeconomic status of the neighborhood, among other factors.

Although the preliminary nature of the sample calls for some caution, the results look encouraging. The intervention has a significant and quantitatively important effect on the use of the park and the incidence of crime in its surroundings. For example, the intervention reduces criminal episodes by 0.3 standard deviations<sup>37</sup>. There is also a spillover effect on objective measures of neighborhood safety, although, as expected, not as big as the local effect. Similarly, there are significant effects on social capital, particularly community participation and organization and identification with the neighborhood. Although there is no effect on the rest of the variables, the study concludes that improving the public space can be an effective crime fighting tool, not only in the surroundings of the recovered space, but also throughout the neighborhood, thanks to certain diffusion of benefits.

Another intervention linked to the transformation of space or its accesses is the establishment of barriers to vehicle traffic. Welsh, Mudge, and Farrington (2010) reviewed the impact of these interventions in four American cities: Los Angeles, Miami, Dayton and St. Louis. To provide an example, two years after “Operation *Cul de Sac*”<sup>38</sup>, in Los Angeles, there was evidence of a significant reduction in the incidence of assaults and homicides, although no effect on property crime compared with adjacent areas.

## OTHER INTERVENTIONS

Ties among neighbors can serve as counterweight to criminal activity. A more cohesive community is more disposed to help others facing crime, to avoid decay of the physical environment that could attract crime, and to take preventive measures such as active surveillance, in the interest of public safety in the community.

An initiative based on the ties among neighbors is “Neighborhood Watch”, considerably popular in developed countries. For example, the 2000 report of the National Citizen Security Council of the United States documents that 41% of the population lives in communities that have adopted such schemes. In some of its forms, the scheme includes such things as simulating the presence of neighbors at home, by picking up their newspapers and mail.

Many of these schemes are coordinated with the police, giving way to another potential crime reduction channel, by improving the timeliness and quality of the police’s information. Although the typical goal of such schemes is usually to curb residential burglary, their potential benefits are broader, since many burglaries can trigger violent crimes.

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37. The information corresponds to the undertaken household surveys and not to administrative data. The measures on the incidence of crime refer to the frequency with which the respondent has experienced or witnessed certain crimes (e.g., gunshots, theft and robbery, consumption and distribution of alcohol, etc.).

38. *Cul de Sac* is a French term that can be used to refer to a dead-end street or a street with restricted vehicular access. The intervention consisted of barriers to vehicular traffic in a ten-block area with high incidence of violent crime associated with criminal gangs.

A recent paper reviews 19 studies and 43 evaluations of neighborhood watch schemes<sup>39</sup>, all in developed countries, and mostly the United States and the United Kingdom. Out of the 24 evaluations that quantified the scheme effects, 19 show a significant crime reduction effect. Remarkably, the other 5 find an increase in criminal activity, perhaps because the activation of the scheme might send a signal as to the value of the criminal objectives. The meta-analysis suggests a 26% decrease in criminal activity in the treated group compared with the control areas.

Another common strategy is to install a closed circuit television (CCTV). This can be done both in smaller spaces, such as residences and parking lots, or in larger spaces, such as neighborhoods or municipalities. The evaluations of this type of strategy suggest that it may be an effective tool, especially against certain crimes such as vehicle theft in parking lots (Welsh and Farrington, 2010). To exploit the potential of these mechanisms it is essential that certain conditions be met regarding lighting and the system's coverage.

Finally, the curfew for alcohol sale and the operation of nightclubs can also be effective to prevent crime, especially in the vicinity of bars and liquor stores. The main channel through which alcohol consumption may affect crime is the pharmacological: alcohol abuse can encourage more criminal and/or violent behavior, while at the same time reduce the judiciousness and environmental awareness of potential victims.

In a project sponsored by CAF and IDB, de Mello, Mejía and Suárez (2013) evaluate the effect of alcohol sale restrictions in Bogota<sup>40</sup>. First, they find that the restrictions reduced the problematic consumption of alcohol<sup>41</sup>. Moreover, they find that a 10% increase in problematic consumption cause a 13% increase in both deaths and injuries from traffic accidents, and a 15% increase in attacks. The strongest effects take place in the blocks with shops that sell alcohol and also depend on the density of these shops.

Summing up, changing the conditions that determine the opportunity for crime in very specific geographical areas can cause an overall reduction in criminal activity. Doing this does not simply displace crime from one corner to the other, on the contrary, it may entail benefits for adjacent areas. Consequently, this kind of policies, a.k.a. "situational crime prevention strategies", should be an essential component of any crime fighting strategy.

**Interventions targeting at very specific places not only cause a significantly crime decline in the treated areas, but it also appears not to migrate to adjacent areas.**

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39. Neighborhood watch schemes are typically part of a package that also includes "property marking" and "security surveys", resulting in a thorough examination of the physical environment to assess security. The review did not exclude those interventions that also included these components.

40. In January 2009, the mayor of Bogota issued a decree restricting the sale of alcohol in liquor stores and supermarkets from 11pm to 10am. The decree affected 9 of the 20 areas that make up the city and did not apply to night entertainment venues (bars, clubs and similar).

41. The authors counted on metrics of "exaggerated emotional state" and "drunk walking", with which they constructed a composite index reflecting problematic alcohol.

## Conclusions

Crime has a space-time dimension. It does not happen randomly but rather shows a remarkable concentration in a few very specific areas, with a lot of variability among adjacent areas. It is thus essential to incorporate this dimension when analyzing crime and designing prevention policy.

Preparing and maintaining geo-referenced information is a first step to identify patterns as well as hotspots and hot moments. This must rely not only on statistical methods, but also on the opinions and suggestions of the police, especially when policy implementation is the goal. A bottom-up analysis looks like the right thing, that is, it seems suitable to focus on very specific areas such as addresses or blocks, since studying crime's geographical patterns at the neighborhood level, or even at the city-block level, may not be enough. A spatial focus also favors the design and implementation of preventive strategies.

But identifying patterns, and in particular hot spots and hot moments, is just the beginning, not the end. The next step is to understand what factors make these spaces and these moments more criminogenic. The list of suspects is very diverse and includes factors affecting crime opportunities as well as factors underscoring physical and social disorganization.

Understanding the spatial patterns of crime makes it possible to implement space-based prevention strategies to modify crime opportunities, social cohesion and the physical environment in the most criminogenic places. Possible strategies include hotspot policing, better lighting, vacant public space recovery, neighborhood watch, and restrictions on access to certain areas. Understanding the circumstances that operate in each place makes it possible to undertake "tailored-made" interventions, which should have better effects.

These sorts of interventions targeting at very specific places, could cast doubt on their overall effect, since they may simply displace crime from one corner to the other. But the assessments of them are encouraging. Not only does crime decline significantly in the treated areas, but it also appears not to migrate to adjacent areas and, on the contrary, it appears to drop there, too, albeit modestly.

It would be naive to think that improving lighting, the quality of public spaces, the ties among neighbors, or the location of the police, could just as easily stop crime. However, it would be absurd to ignore these findings and not to incorporate the notions of space and circumstance into a comprehensive crime fighting strategy.





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# DRUG TRAFFICKING AND VIOLENCE

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## Chapter 4





## Chapter 4

# DRUG TRAFFICKING AND VIOLENCE<sup>1</sup>

*“I will make him an offer he can’t refuse”.*

Don Vito Corleone in *The Godfather*.

## Introduction

There are good reasons for governments to ban the illegal drug market. Drugs are potentially addictive substances that can harm the health of consumers and affect their social environment. Moreover, their pharmacological effects, such as aggressive and irresponsible behavior, can cause violence.

However, if the State bans the production, distribution and sale of illegal drugs without reducing its demand, it creates economic rents for the agents who operate in that market, who can make huge profits. These rents are associated with the risks people take when breaking the law, such as potentially being caught and punished.

When a market is illegal, those who operate in it cannot go to court to settle disputes over their economic transactions, enforce contracts, or secure property rights. This is how they end up resorting to violence, as a way to replace the State<sup>2</sup>.

This is why illegal markets, such as that of drugs, are an environmental factor that may be associated with high incidence of interpersonal violence and other crimes (robbery, extortion, kidnapping, etc.). This chapter reviews this phenomenon in Latin America documenting how the violence associated with the production, trafficking, distribution and consumption of drugs in some countries of the region accounts for a significant proportion of the increase in violent crime, particularly the homicide rate.

Not all illegal markets are equally violent. The use of violence to resolve disputes in the drug market is greater than in other markets such as that of illegal DVDs –partly because the associated rents are much greater, and partly because the entry costs are much higher. The illegal drug market requires an expensive logistics of territorial control over the areas of farming, production and trafficking. Violence, then, is a way to “compete” for the market, which should have some scale and magnitude to be worth the cost. Furthermore, violence (or the credible threat of its use) serves to maintain a certain “contractual stability” throughout the different stages of the business.

Controlling and banning the production, trafficking and sale of drugs could increase crime and violence because, by displacing established drug cartels, it could give rise to disputes between new groups to monopolize the space these cartels leave behind. In addition, repressive state action could increase the price of illegal substances, increasing potential rents and encouraging greater disputes over market control.

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1. Daniel Mejía and Juan Camilo Castillo wrote this chapter.

2. There are ways other than violence to resolve disputes in illegal markets. However, violence has been one of the main strategies used to resolve disputes by those who operate in illegal drug markets.

That is, when the State decides to excessively regulate or ban certain markets, it can generate rent opportunities and violent disputes over those rents, which end up affecting citizen security. This issue is of vital importance in Latin America because the emergence and growth of illegal markets explains part of the level and growth of crime, especially in the countries of production and trafficking of illicit drugs such as cocaine, heroin and, to a lesser extent, marijuana.

Illegal drug markets can lead to violence and crime through multiple channels, of which the most important for the region is the “systemic channel”, i.e., the violence generated by disputes between criminal organizations to gain control over the market and the geographic locations where to operate, the so-called drug “*plazas*” or routes. This channel also encompasses the violence associated with *vendettas* between drug producers and distributors for disputes over transactions, property rights, and contract enforcement. For example, in Colombia, illegal armed groups are constantly vying for territories suitable for the production and trafficking of cocaine; and, in Mexico, clashes between different cartels are legendary. Targeted killings between cartels have also been recurrent in those countries affected by drug trafficking, as they serve to settle disputes over nonpayment, betrayals, and theft of illegal merchandise, such as drugs or weapons.

It is no coincidence that almost all of the most violent countries in the region are located along the main routes of illegal drug production and trafficking. For example, the countries in the Andean region and Colombia (the largest producer of cocaine) and some countries in Central America, Mexico and some Caribbean islands (the main cocaine trafficking routes into final markets in North America) have the highest homicide rates in the continent.

In Colombia the increase in drug trafficking from 1994 explains a very high percentage of homicides (Angrist and Kugler, 2008; Mejía and Restrepo, 2013a). In particular, between 1994 and 2008 the size of the cocaine market nearly tripled, and it explained about 25% of the homicide rate. If the size of the cocaine market had not increased as it did, by 2008 Colombia would have had only 28, instead of 39, homicides per 100,000 inhabitants. This means that Colombia had more than 5,700 extra violent deaths per year, on average, between 1994 and 2008, on account of drug trafficking (Mejía and Restrepo, 2013a).

In Mexico, the murder rate tripled between 2006 and 2010, from nearly 8 homicides per 100,000 inhabitants in 2006 to over 23 in 2010. Much of this increase is also explained by disputes between criminal organizations seeking greater territorial control of drug trafficking toward the United States and Canada. Since 2006, there have been over 65 thousand drug-related murders.

Drug trafficking has also unleashed unprecedented waves of violence in Guatemala, Honduras, El Salvador and, more recently, Caribbean countries such as the Dominican Republic, Haiti and Trinidad and Tobago. The vast majority of analysts and journalistic sources coincide in pointing to the rise of drug trafficking as the main (albeit not the only) culprit.

Other parts of the continent, especially its large and high-income cities, have higher rates of interpersonal violence (such as murder or fighting), fed by micromarkets. This is the case of Rio de Janeiro, São Paulo, Mexico City, or Medellín, and more recently Rosario, in Argentina, where fights over the territorial control of districts or favelas to sell drugs has become one of the most important citizen security challenges for the local authorities.

## Illegal markets, violence and state regulation

Why does a State decide to ban the production, trafficking, sale and use of drugs? Chiefly, drugs can cause serious harm to people's health and to their social environment. Although consumers harm themselves, they also entail high costs for public health systems. In addition, drugs may affect public safety by tipping people toward irresponsible or aggressive behavior, including property crime, to fund their expensive habits<sup>3</sup>.

States may decide to ban or regulate the production, marketing, and consumption of drugs, but if this ban does not discourage demand, some individuals might pay higher prices for these substances, raising the potential rents of the illegal market. These revenues are used by individuals and organizations which, unable to resort to the judicial system, the police, or government agencies to enforce contracts or secure property rights, choose to use violence or the threat of its use as a substitute for the State. This has important negative consequences for society: the deterioration of public safety, the loss of state legitimacy for not monopolizing the use of force, and the corruption associated with bribes to government officials to avoid detection and prosecution.

The use of violence in many illegal drug markets responds to factors specific to this activity. The first factor is associated with technological features in the production, trafficking and sale of these substances. The operation of some markets, such as cocaine and heroin, requires very high fixed costs to control the areas of farming, production and trafficking, and to mount processing centers that require the use of specialized and costly inputs. These fixed costs generate economies of scale, so that agents that operate in these markets must be large relative to the potential market and boast some monopoly power. This allows them to obtain large economic rents, which they have to protect by very sophisticated armed structures. This combination of high rents and illegality is what encourages the use of violence to settle disputes. In illegal markets that do not generate high rents, or in markets that have high entry costs and therefore high economic rents but are not illegal, the use of violence to resolve disputes is much less prevalent.

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3. In the scheme proposed by Goldstein (1985), these two types of violence are called the "pharmacological channel" and the "economic channel".

**States face a trade-off between the benefits of reducing the harm caused by drug use and the negative consequences of banning it.**

Second, the type of government enforcement may determine the degree of violence in these markets. If policies are focused on reducing supply in producer and transit countries, drug prices as well as the revenues associated with the drug market operation will increase, leading to more disputes over market control. Conversely, policies that confront drug use as a public health issue cause a decrease in the demand for drugs as well as their prices. Thus, they can reduce the rents of the drug business and the violence exerted to operate it.

Last, the institutional presence of the State and the extent to which it has a monopoly over the use of force also influence the level of violence in illegal markets. Those areas where the State has no institutional presence or territorial control are more likely to become areas of contention between groups seeking to control drug trafficking. But the institutional presence of the State and its effects on violence are not limited to security policies. When the State creates opportunities for the development of legal activities, it makes it harder for illegal armed groups to recruit the youth. This is why the presence of the State in the form of education, health and employment programs is critical to understand the extent to which illegal markets generate violence.

The ban on the production and trafficking of drugs, then, could imply unwanted costs in terms of crime and violence. States face a trade-off between the benefits of reducing the harm caused by drug use and the negative consequences of banning it. While most of the States that choose to ban the use and trafficking of drugs argue that their social costs outweigh the costs associated with their prohibition or regulation, there are international treaties that tip the balance in favor of a prohibitionist approach to drug policy. An example of this is the Single Convention on Narcotic Drugs, United Nations, 1961, which bans the production and supply of a large number of drugs, thereby limiting the policy options available to States.

In recent years, a number of countries (and regions within countries) have argued that international drug treaties contradict more important objectives, such as human rights, the right to health, and citizen security, so that the strict prohibition of drugs, they say, should be rethought. Basically, this was the argument used by Switzerland, Portugal, Holland, and most recently Uruguay, who have chosen to decriminalize or even legalize (with appropriate controls) the market of certain substances such as marijuana. These countries have weighed the costs of complying with drug treaties against the internal costs stemming from prohibition such as violations of human rights or the right to health, and have opted for public health policies against drug use.

The States who intervene in these markets can do so via supply policies (i.e., trying to control production and trade) or through demand policies (i.e., affecting consumption). With regard to supply-side policies, the available tools are summarized in Figure 4.1. First, the State must decide whether to ban the market completely or partially, or regulate it through taxes on production or trade. Regulation is a much more versatile tool than prohibition because it can go from a tax aimed at correcting the possible negative externality of drug use, to a tax that is high enough to eliminate the legal market completely (Becker, Murphy and Grossman, 2006). That is, regulation affords governments a wide range of strategies.

**Figure 4.1** Intervention strategies on drug supply

Source: Prepared by the author.

The States who intervene drug markets can do so via supply policies or through demand policies, affecting consumption.

Supply-side policies appear to leave the States a difficult choice between two objectives that cannot be met simultaneously: reducing the costs associated with the existence of illegal markets (such as violence, corruption, and other costs) and reducing the direct and indirect costs of drug use. However, some authors have insisted that these two objectives are not necessarily conflicting, unless governments use inappropriate enforcement methods (Lessing, 2013; Kleiman, 2009). This happens when the government tries to eradicate illegal markets completely, even if this has repeatedly proven to be not only an elusive goal (Reuter and Kleiman, 1986; Lessing, 2009), but also one capable of generating pronounced violence cycles. An example of this are the years of alcohol prohibition in the United States, which was abandoned because of its inefficacy as well as the pronounced waves of violence that it generated. More recently, this is also what happened in Mexico after the declaration of war against drug trafficking in late 2006, which propelled violence to unprecedented levels. The same is true of the initial attempts to retake some of the favelas in Rio de Janeiro that were under the control of drug trafficking groups, which resulted in the death of several civilians, many of whom were not related to drug trafficking.

The alternative policy departs from accepting that drug trafficking and illegal markets cannot be eradicated completely, and that attempts to reduce their incidence should generate the least possible collateral costs. The most debated drug trafficking strategy today is “selective enforcement”<sup>4</sup> (Kleiman, 2009), which consists of directing state enforcement efforts toward the most violent drug trafficking organizations, so that the use of violence becomes too costly. Under such strategies, the government prioritizes the reduction of violence over the complete eradication of the market.

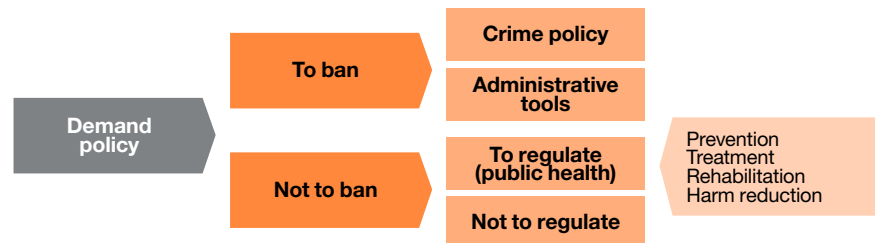
As a complement to the supply-side policies, the State can also target policies toward demand, such as those focused on consumption prevention and control, as well as on treatment and harm reduction. Figure 4.2 (see p. 142) illustrates the choices before governments. Their goal is not only to minimize drug use, but also

4. Also called “conditional enforcement” in the literature.

**The alternative policy departs from accepting that drug trafficking and illegal markets cannot be eradicated completely, and that attempts to reduce their incidence should generate the least possible collateral costs.**

to use public health and damage control tools, so that whatever consumption persists, it cause the least possible harm to the consumers' health and environment. To this end, the first decision for States to make on the demand side is whether to allow or ban consumption.

**Figure 4.2** Intervention strategies on drug demand



Source: Prepared by the author.

The idea from which prohibition departs is that substance abuse is inherently bad, and therefore must be eliminated. This position upholds that the use of psychoactive substances is morally unacceptable and therefore should be penalized and clamped down. It also argues that alternative policies may end up promoting drug use by making drugs less expensive for people who can potentially become problematic substance users.

Against prohibition, there are two different positions, based on quite different reasonings. On one side, there is the position of not interfering with any tool. Based on libertarian ideas, this position upholds that individuals have a right to consume psychoactive substances without state intervention, since consumption affects primarily the consuming individual himself. It proposes full legalization as a policy against state interference in the lives of citizens.

Then there is the position of regulating. This position recognizes that substance abuse can be harmful to health and increase certain types of crime and violent behavior, and it proposes preventing consumption and treating consumers with public health tools. While this position does not preclude the State from punishing violent behavior, it emphasizes preventive policies that discourage consumption, and rehabilitation programs that prevent recidivism. The vast majority of users of psychoactive substances are occasional and do not cause any harm to others (Kleiman, Caulkins and Hawken, 2011). So, policies should be focused on campaigns that prevent initially harmless consumption patterns from becoming problematic. There are also addicts who do not commit crimes, but who do have a health problem that must be addressed with public health tools, not criminal policy. In the case of drugs such as cocaine and heroin, the vast majority of consumption is accounted for by a relatively small percentage of consumers (those who are addicted or dependent), while the vast majority of consumers are

casual and account for a small fraction of total consumption (Kleiman, Caulkins and Hawken, 2011).

The countries that have chosen to regulate drug use with public health tools, preventing problematic patterns of consumption and treating and rehabilitating drug dependents, have obtained very positive results, not only reducing the harm associated with drug use, but also lowering the prevalence of problematic use and the crime rates associated with illegal drug markets. This is the case of Portugal, Switzerland and the Netherlands<sup>5</sup>.

In summary, there are several reasons why policies that focus on regulation can reduce the crime and violence associated with drug markets. First, policies that address drug use as a public health issue lower demand and prices. With this, they manage to reduce the rents earned by illegal armed groups and the violence exercised to operate in these markets. In contrast, supply-reduction policies in producer and transit countries could result in increased drug prices and their associated rents, and thus lead to higher levels of crime and violence. That is why policies established at the national and regional levels (i.e., coordinated between countries) should combine efforts to affect the most violent segments of the production chain (e.g. the most active and violent cartels) with initiatives that discourage consumption. These demand reduction policies achieve the triple aim of reducing drug consumption, the rents received by illegal armed groups, and the violence the latter perpetrate<sup>6</sup>.

## DRUG TRAFFICKING AND VIOLENCE IN LATIN AMERICA

The operation of illegal drug markets in Latin America has been closely associated with the use of violence and coercion. Anecdotal evidence for this is overwhelming, especially in cases such as Brazil, Colombia, Guatemala, Honduras, Mexico and El Salvador. In addition, several academic studies have shown a relationship between the emergence and growth of illegal drug markets and different indicators of violent crime.

Miron (2001), for example, uses a cross section of countries in different regions of the world and shows that there is a positive correlation between various indicators of the war on drugs and the levels of violence; studies on specific countries, on the other hand, show less clear results<sup>7</sup>.

Establishing a causal relationship between drug trafficking and violence is not trivial: just as there are arguments backing that drug trafficking causes violence, there are several arguments indicating that violence favors trafficking. First, violence makes legal activities less profitable, which makes drug trafficking more attractive. Furthermore, violence may require state resources, thereby weakening its ability to face other illegal activities, reducing the punishment to drug trafficking and making

**Regulation policies of illegal drug markets recognize that substance abuse can be harmful to health, but try to deal with consumption with public health policies like prevention and treatment.**

5. For Portugal, see the assessment by Hughes and Stevens (2010).

6. Mejía and Restrepo (2012) develop this idea in a formal model.

7. For example, Bove (2011), uses time series analysis for the case of Afghanistan and demonstrates that there is no clear relationship between opium cultivation and violence.

**The boom of drug trafficking in Colombia between 1994 and 2008 explains around 25% of the average homicide rate in Colombia during that period.**

it more profitable<sup>8</sup>. Additionally, there may be other economic, social and political factors that cause violence and drug trafficking at the same time. For example, a weak State or dysfunctional state institutions can lead to more violence and drug trafficking at the same time. Given this, establishing that drug trafficking causes violence is not as simple as showing a correlation between the two.

Some studies have used appropriate methodologies to establish a causal relationship. Angrist and Kugler (2008), for example, exploit the breakdown of the air bridge between Peru and Colombia (in particular between coca fields in Peru and cocaine processing centers in southwestern Colombia) to unravel the causal effect of drug trafficking on violence. Until 1994, most of the world's cocaine came from coca grown in Bolivia and Peru, which was transported by air to Colombia to be processed in its cocaine hydrochloride laboratories. Since 1994, in an effort to close these drug routes, the Peruvian government began to shoot down the planes crossing the border with Colombia, which displaced coca cultivation from Peru to Colombia. Using difference in difference analysis, the authors show that the arrival of coca crops caused increased levels of violence in Colombia.

Mejía and Restrepo (2013a) use a panel of municipalities in order to disentangle the causal relationship between the size of the illegal cocaine market and several indicators of violence between 1994 and 2008. They use an instrumental variables approach that exploits the variable aptness for coca cultivation across Colombian municipalities and the exogenous changes in the external demand for Colombian cocaine over time. Their findings indicate that the size of the cocaine market increases the level of violence in a statistically significant, quantitatively important, and robust manner. In particular, the size of the illegal cocaine market explains about 25% of the average homicide rate in Colombia between 1994 and 2008. This means that if the size of the cocaine market had not increased as it did (it almost tripled in that period), the homicide rate in 2008 would have been 28, as opposed to 39, homicides per 100,000 inhabitants. Moreover, there would have been 60% fewer forced displacements, 36% fewer attacks by illegal armed groups, and 20% fewer incidents involving landmines.

Similarly, Dube, García Ponce and Thom (2014) show how the drop in corn prices (exogenously determined by climate change in the United States) stimulated the substitution of maize by opium and marijuana in Mexico, which in turn increased violence.

A recent work by Chimeli and Soares (2013) shows that the causal relationship between illegal markets and violence is not exclusive to drug markets. This relationship does not seem to depend on the specific type of traded goods, but rather on the illegal rents involved. The authors exploit the change in the regulation of mahogany logging in Brazil in the early nineties, which went from being legal to illegal in two years. They show how, after the ban, violence increased in those regions where there was an active mahogany market, in a clear example of the functioning of the systemic channel of violence.

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8. For example, Lind, Moene and Willumsen (2009) show that violence increases opium cultivation in Afghanistan through a decline in institutional quality.



The phenomenon of illegal markets can be separated into three stages: production, trafficking and consumption.

## ILLEGAL DRUG PRODUCTION

Drug production requires territorial control. Chemical drugs, such as methamphetamine and ecstasy are produced in laboratories that must be protected by criminal organizations. Other drugs, like marijuana, do not include a chemical processing stage, but are refined from plants, which requires the control of large areas for cultivation. Finally, some drugs such as cocaine and opiates need both types of territorial control: first there is the need to grow the plants, be that coca or poppy, and then there is a chemical process to produce and refine the drugs. To protect the laboratories and to obtain the chemical precursors of cocaine or heroin require armed groups that can ensure territorial control. So, it is not strange for there to be violent actors linked to drug trafficking in those rural areas where drugs are produced.

While several drugs are produced in Latin America, cocaine has the greatest impact. Practically the entire global cocaine production is concentrated in Bolivia, Colombia and Peru. Its production is divided into three stages (Mejía and Rico, 2010). First, there is the cultivation of coca leaves, which requires large tracts of land in rural areas. Second, coca is processed into coca paste and cocaine base, two intermediate steps that can be produced in an artisanal fashion, without advanced equipment and with accessible ingredients. Third, the coca base is processed to produce cocaine. This last step requires substantial physical infrastructure, since it must be carried out in laboratories involving investments of over a million dollars, which is why it is essential for drug traffickers to protect the labs from detection and destruction. It also involves access to certain chemicals that are not readily available, which is why drug traffickers have to mount distribution and storage networks.

Although cocaine production involves a complex chain, it represents a small fraction of its sale price. In fact, the value added of the stages of cultivation, processing into coca base, and the subsequent transformation of the base into cocaine, represents only 29% of the sale price of cocaine at the Colombian border. This means that the remaining 71% corresponds to the trafficking of the drug from its processing centers. All this shows that even if drug production has high visibility and is the target of many government efforts, it is often not the stage that entails more revenues for the drug traffickers or the one causing the greatest public safety problems.

Among the cocaine-producing countries, Colombia has been the only one in which drug trafficking has become a problem of large-scale violence. The situation originated about three decades ago, when the drug business was dominated by large cartels with a vertically integrated structure ranging from the cultivation of coca to the distribution of cocaine in consumer countries. The use of violence (e.g., kidnappings, bombings, targeted killings) by the Medellín and the Cali cartels has been well documented: the cartels used violence as a means to intimidate law enforcement agencies and prevent persecution and extradition to the United States.

When the Colombian authorities clamped down these cartels, not only did drug trafficking not cease, but it also increased markedly, this time with a more fragment-

**Among the cocaine-producing countries in Latin America, Colombia has been the only one in which drug trafficking has become a problem of large-scale violence.**

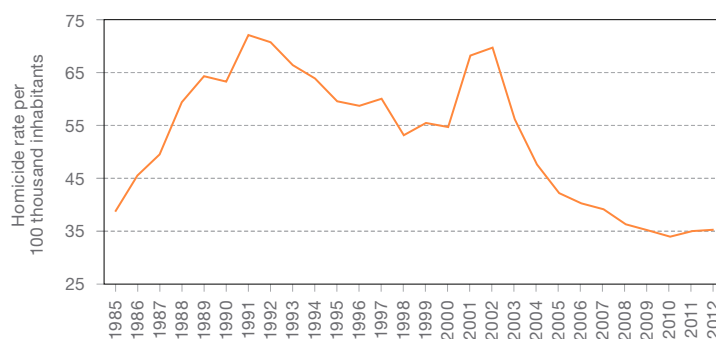
**From 2001 on there is a steady drop in the homicide rate in Colombia, which has been attributed to Plan Colombia and to the stronger security policies during the government of Alvaro Uribe.**

ed structure that was no less violent. The fall of the two major drug cartels (Medellin and Cali) led groups like the FARC and other paramilitary groups to seize the vacuum and become directly involved in this business in order to finance the operations of their illegal armies. These armed groups had the ability to control the large rural areas necessary for the cultivation of coca, besides providing security and adequate supply networks to the laboratories of cocaine production, so that it was very easy for them to take over. With the participation of the FARC and the paramilitary groups, drug trafficking grew rapidly during the second half of the nineties; in parallel, most violence indicators (homicide, assault, kidnapping) skyrocketed.

The weakening of the security conditions and the increase of drug trafficking led the government of Andres Pastrana (1998-2002) to design and put in place a plan to recover large parts of the country from the FARC and attack the whole chain of cocaine production and trafficking (Rangel, 2000). This strategy, which was called “Plan Colombia”, was implemented with the support of the United States government.

Chart 4.1 shows the evolution of the homicide rate in Colombia between 1985 and 2012, including two very sharp peaks. The first peak, during the first half of the nineties, was associated with the violence of the Medellin cartel, and the second peak, at the end of the decade, had to do with the strengthening of the FARC and the emergence of paramilitary groups, both associated with drug trafficking. From 2001 on there is a steady drop in the homicide rate, which has been attributed to Plan Colombia and to the stronger security policies during the government of Alvaro Uribe.

**Chart 4.1** Homicide rate in Colombia (1985-2012)



Source: Prepared by the author based on National Police of Colombia (2013).

President Alvaro Uribe (2002-2010) implemented “iron fist” policies against the FARC and ELN guerrillas aided by the resources provided by Plan Colombia. Initially, his strategy focused on reducing coca crops through herbicide spraying campaigns. However, the methodology of aerial eradication did not have the expected results. Indeed, Abadie *et al.* (2013), Camacho and Mejia (2013b) and Roza

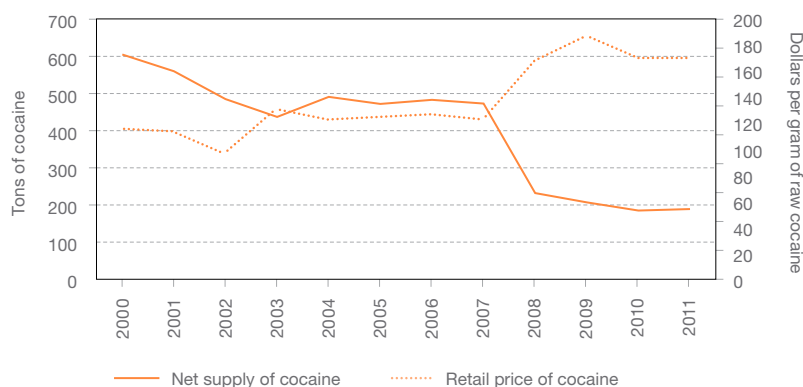
(2013) show that for every hectare sprayed with herbicide, there is a decrease of only 0.1 to 0.2 cultivated hectares.

Besides its low effectiveness, aerial eradication causes significant collateral damage. Both Rozo (2013) and Camacho and Mejía (2013b) show that the inhabitants of the sprayed areas have higher rates of abortion, skin disease and infant mortality. Rozo (2013) also shows that school attendance decreases, which is consistent with the decline in family income due to crop destruction: parents are forced to withdraw their children from school and send them off to work in order to attain subsistence income levels. A final side effect, and perhaps the most important one, is that aerial eradication causes more violence (Rozo, 2013; Abadie et al, 2013), in another example of the ongoing dilemma facing countries in the region.

Finally, crop spraying was a bad choice because the Colombian government could have intervened against drug trafficking in other ways. Mejía and Restrepo (2013b) assess theoretically the eradication of crops that would have been achieved through interdiction, i.e., fighting the major links in the chain of drug trafficking, such as the laboratories for cocaine processing and the shipments overseas. Their main result is that interdiction is much more efficient than spraying in terms of the supply reduction achieved per unit of money invested.

After several years of using spraying as the primary method to combat drug trafficking, the Uribe government reassessed its strategy in 2007 to put more emphasis on interdiction. So it was that the potential cocaine production net of seizures declined nearly 50% between 2007 and 2009. This “supply shock” caused an unprecedented rise in international cocaine prices (Chart 4.2) and a decrease in the sources of financing of illegal armed groups, who had to adapt and find other funding sources such as illegal mining and, again, extortion.

**Chart 4.2** Net supply of cocaine from Colombia and cocaine prices in the United States (2000-2011)



**Source:** Prepared by the author based on UNODC (2012), National Police of Colombia (2013) and *National Drug Intelligence Center* (2011).

**The recent success of Colombia in the fight against drug trafficking and organized crime has had regional consequences.**

The recent success of Colombia in the fight against drug trafficking and organized crime has had regional consequences: coca cultivation increased in Peru and Bolivia; processing and trafficking centers moved to Ecuador and Venezuela; and the operation centers of the large Colombian cartels moved to Central America and Mexico.

This shows the importance of coordination among governments to achieve effective reductions in aggregate drug production at the regional level. Without this coordination, production only moves to other countries where repression is not as strong. And these drug business displacements are accompanied by significant increases in violence, such as when coca production migrated from Peru to Colombia in the mid-nineties (Angrist and Kugler, 2008; Mejía and Restrepo, 2013a), or when drug trafficking operation centers moved from Colombia to Mexico and Central America (Castillo, Mejía and Restrepo, 2014). Another case, which has not yet been documented formally in academic work but has been highlighted in investigative journalism articles, is the recent increase in drug trafficking and violent crime in the Dominican Republic and other Caribbean islands as a result of fewer controls on the drug trafficking routes in the Caribbean as a consequence of budget cuts in the United States Southern Command.

The dominant role of cocaine notwithstanding, Latin America also produces other drugs. Mexico produces large quantities of marijuana, methamphetamine and opiates for sale in the United States, although cocaine remains the main source of income for Mexican cartels<sup>9</sup>, even if produced outside the country. Other countries in the region, such as Brazil and the Southern Cone, produce marijuana for domestic consumption, but their main associated public safety challenges are an urban, related to the control of consumer markets.

## **DRUG TRAFFICKING**

Drug trafficking is perhaps the stage with the highest costs for Latin America in terms of public safety. The cartels engage in disputes of various kinds. First, they engage in disputes over the territorial control of the routes, even if these do not involve large areas, as in the case of coca or poppy, but rather some key spots for the exit of drugs from producing countries, their passage through intermediate countries, and their entry into consuming countries, such as roads and ports. Second, cartels engage in disputes over the control of the urban centers, where roads and ports are located. Finally, they engage in disputes over the trade links with the cocaine suppliers, be that producers or traffickers in previous stages, and with the buyers who will take the drugs to consumer markets.

The most documented case, again, is that of cocaine, which goes from producing countries (Bolivia, Colombia and Peru) to particularly the United States. A few decades ago most of the cocaine used to pass through the Caribbean, but in the eighties the American government was very successful in controlling the

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9. Some estimates indicate that the fraction of income from cocaine can reach 50%.

entry of cocaine through this route. This led to a change in the operations of drug traffickers, who began transporting cocaine through Central America and Mexico. Today, the transportation chain starts in the cocaine laboratories of rural areas in Andean countries; then, most cocaine is transported to the Pacific Ocean, where it is loaded into fast and semi-submersible clandestine boats that carry it to Central America or Mexico. Another important part is carried by air from eastern Colombia to Central America, especially Honduras and Nicaragua. Once in these destinations, cocaine is transported by land to the north to cross the border between Mexico and the United States through major roads and entry points.

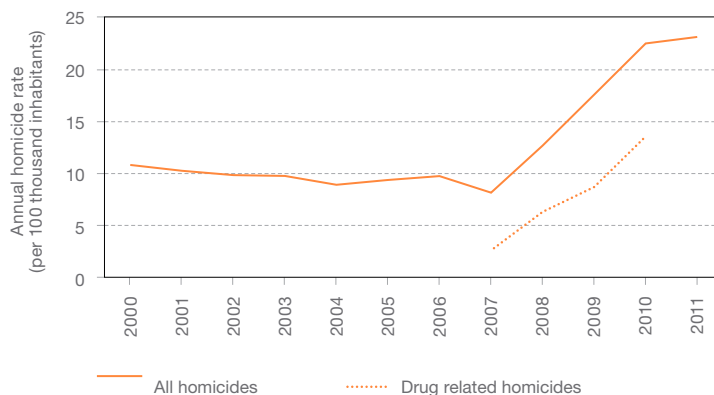
Other drugs produced in Mexico such as marijuana, opiates and methamphetamine, are transported by the same land routes used to transport cocaine into the United States, which are controlled by Mexican cartels.

Although Central America and Mexico have been trafficking routes for at least two decades, they had not always had high levels of violence. By contrast, homicide rates in several Central American countries and Mexico declined along with economic growth between 2000 and 2007, reaching a record low in 2007. But then they started increasing very rapidly in some countries, reflecting clashes between drug trafficking organizations such as the Sinaloa and the Gulf cartels and the Zetas in Mexico, and gangs like the *Mara Salvatrucha* in Guatemala, Honduras and El Salvador.

The recent rise in violence in Mexico has drawn much attention. Chart 4.3 shows the evolution of the total homicide rate and the rate of drug-related killings for the period 2000 to 2011. The structural change in the trend as of 2007 seems to be explained by the increase in drug-related homicides.

**Although Central America and Mexico have been trafficking routes for at least two decades, they had not always had high levels of violence.**

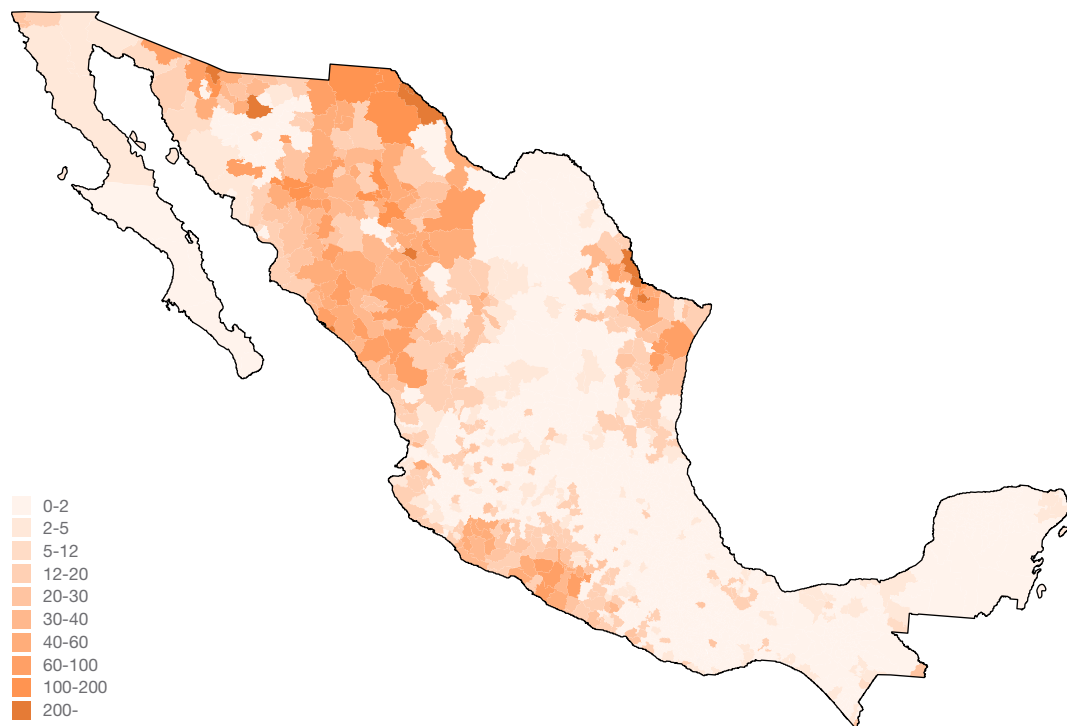
**Chart 4.3** Total and drug-related homicide rates in Mexico (2000-2011)



**Source:** Prepared by the author based on INEGI (2013) and the Presidency of the Mexican Republic (2012).

Not all Mexican cartels have the same *modus operandi* (Guerrero, 2011b). Some have national presence and control the routes for several drugs across the country, from the point of entry or production to transportation to America. This is the case of the Sinaloa cartel, the Zetas and the Gulf cartel. Other cartels have a presence in certain key points, especially along the border with the United States. Their business is to collect “tolls” on the drugs that cross through the areas they control. This is the case of the Tijuana cartel and the Juarez cartel. Finally, some cartels have control over small regions throughout the Mexican territory and obtain rents from the routes that go through them, in addition to managing micromarkets to meet domestic drug demand. All the other cartels belong into this third group. Many of them are factions that dismembered from some of the major cartels due to internal disputes, after which they gained control over the areas where the faction leader was in charge.

**Figure 4.3** Geographical distribution of the drug-related homicide rate (per 100,000 inhabitants) in Mexico (2007-2010)



**Source:** Prepared by the author based on the Presidency of the Mexican Republic (2012).

The disputes among cartels over the control of the drug routes are particularly violent in northern Mexico, especially around certain cities with roads that cross the border with the United States, such as Ciudad Juarez, Nogales and Nuevo Laredo, which have the highest homicide rates (Figure 4.3). This is because drugs reach their highest value just before the point of entry of the United

States. The national cartels are permanently fighting over these territories, both among themselves and against the cartels that charge them tolls for crossing the border.

Until 2006 Mexican cartels operated relatively peacefully. There were a small number of cartels (Sinaloa, Juarez, Tijuana, Gulf, *La Familia Michoacana* and Millennium), each had control over its territory, and there were few disputes among them (Guerrero, 2011; Merino, 2011). The State was a relatively passive actor who overlooked their operations consciously. This means that, despite a *de jure* ban on drugs, the *de facto* strategy was not to enforce the law systematically against the cartels. The main reason for inaction was that the government was aware of its own weakness and inability to face a big and difficult-to-solve phenomenon.

Since 2006 several developments conspired to take violence rates to unprecedented levels. On the one hand, the new government declared an all-out war against drug trafficking organizations. It deployed an overwhelming use of force to attack the cartels with the aim of eliminating them, even sending the military to the cartels' areas of operation and even to some cities. Contrary to what many expected, this war was not at all easy, and it intensified between 2007 and 2010. While the Mexican government undertook several successful operations against cartel leaders, like capturing Alfredo Beltran Leyva and Eduardo Arellano Felix and killing Nazario Moreno Gonzalez, the homicide rate almost tripled between 2006 and 2011 (Chart 4.3, see page 149), stabilizing thereafter above 23 homicides per year per 100,000 inhabitants.

The increase in the homicide rate was not only due to the fighting between the cartels and the government, but also and primarily due to clashes between different cartels for control of the main drug routes to North America. Another important consequence of the policy of all-out war was that the uncertainty and fear generated by the wave of captures led to many betrayals and the fragmentation of several cartels into smaller, but in many cases more violent, organizations. Between 2007 and 2011, Mexico went from having six major cartels to having 16, seven of which have national presence and nine of which have local operations.

An additional factor that explains the increase in violence in Mexico since 2007 is the contraction of the supply of cocaine as a result of successful interdiction policies in Colombia (Chart 4.2, see page 147). This supply shock pushed cocaine prices up, and with them the illegal rents that cartels could obtain. Castillo, Mejía and Restrepo (2014) show that the contraction in the supply of Colombian cocaine accounts for 21.2% and 46% of the increase in total homicides and drug-related killings in northern Mexico (where almost all the observed increase in national figures comes from), respectively.

The combination of higher illegal rents with repressive policies, which were poorly targeted and without violence reductions as a priority, turned out an explosive cocktail. The situation has led to a heated debate in academic and policy circles in Mexico. On one hand, some argue that it was the way in which the drug war was carried out that unleashed the wave of violence rather than drug trafficking itself, since the latter had been operating for some time without the levels of violence

**The contraction in the supply of Colombian cocaine from 2007 accounts for 21.2% and 46% of the increase in total homicides and drug-related killings in northern Mexico, respectively.**

**Mexico, Belice, Guatemala, Honduras and El Salvador have become a key region for the operations of transnational drug trafficking.**

observed since 2007. By attacking the cartels, the Mexican government prompted their fragmentation to a point in which their pre-existing agreements failed to be sustainable, triggering wars between different factions. Additionally, the fall of the leaders of the main cartels created power vacuums and led former lieutenants to fight each other for those positions (Guerrero, 2010 and 2011; Merino, 2011).

On the other hand, some authors, like Villalobos (2012) argue that in order to eliminate drug-related violence, there is first the need to go through a temporary phase of high violence, after which homicide rates fall. The stabilization of homicide rates as of 2010 is used as an argument backing this theory. Also Poire and Martinez (2011) have shown that the fall of the cartel leaders does not cause waves of violence as claimed by government opponents, and argue that the levels of violence would have still increased if the government had not carried out operations against drug trafficking.

Some studies explore more rigorously whether there was a causal relationship between the strategies implemented by the Mexican government and the increase in violence. Dell (2012) explores this question by showing that in those municipalities governed by a mayor from the PAN, the party in office at the national level between December 2006 and December 2012, violence increased disproportionately compared with that in other municipalities. The author argues that there may have been more collaboration between the federal government and the local government to implement operations against major drug cartels in these municipalities. To overcome potential measurement errors stemming from the fact that the municipalities with PAN mayors may be systematically different from those with mayors from other parties, Dell (2012) focuses on those municipalities where the election was defined by a small number of votes (i.e., there was a close election). She shows that even in those municipalities where the PAN won by a small margin there was a disproportionate increase in violence. She interprets this result as evidence of a causal effect of the operations against drug trafficking on violence.

Addressing a similar question, Calderón and Díaz Cayeros Magaloni (2013) show that the Calderón government's interventions caused an increase in violence, but only a temporary one. They use a database of locations and dates of operations that sought to hit drug cartels' structures, such as captures and killings of their leaders and staff, and check if these operations caused some variation in the homicide trend in the region where the cartel operated compared with the trend in the rest of the country. They find that, indeed, the operations against the cartels led to increased levels of violence, but these increases faded off after a period of 6 to 12 months.

Beyond Mexico, the situation in Belize, Guatemala, Honduras and El Salvador is even more critical. Not only are their homicide rates the highest in the world (Chart 4.4, p. Xx), but they have also increased gradually over the past decade, especially in Honduras and El Salvador.

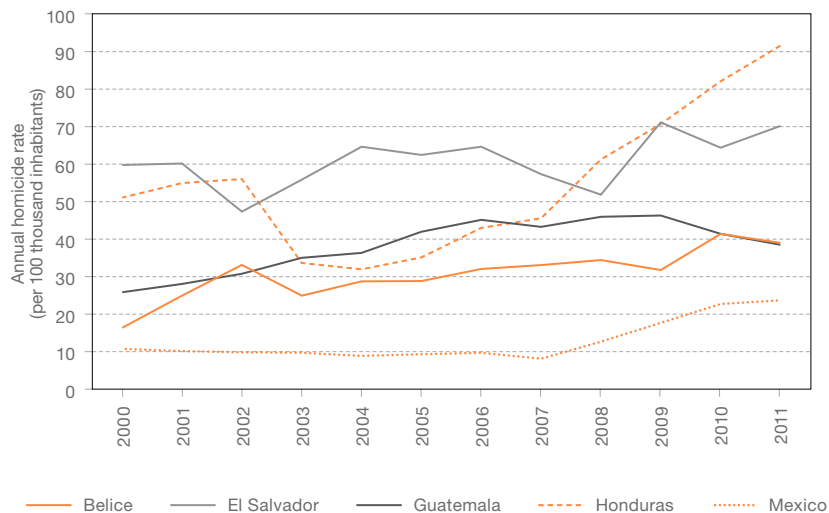
These countries have played a much more active role as drug trafficking routes than Panama, Costa Rica or Nicaragua. In fact, the routes used by the Mex-



ican cartels often start with the discharge of cocaine from Colombia to El Salvador, Guatemala, and Honduras. Thus, these countries have become a key region for the operations of transnational drug trafficking, harboring organizations that charge tolls on Mexican cartels for the transportation of their drugs<sup>10</sup>.

Insecurity in these countries has worsened due to the presence of *maras*, gangs originating in Californian prisons (Arana, 2005) whose members were mostly illegal immigrants who had escaped from the Central American civil wars in the eighties. After committing crimes and being trialed in American courts, they established organized networks within prisons and created gangs such as the *Mara Salvatrucha* and the *Mara 18*. After serving their prison terms, their members were deported to their home countries. Naturally, they came back together into those gangs they had formed in the United States and established direct ties with their northern counterparts.

**Chart 4.4** Homicide rate in Central American countries (2000-2011)



Source: Prepared by the author based on UNODC (2013).

Interestingly, these groups have a quite different structure from that of traditional organized crime groups such as the Italian mafia or the United States gangsters, which had very clear hierarchical structures (Box 4.1).

10. The most prominent case is that of the Taxis cartel in El Salvador, which is characterized by high-profile leaders who are successful entrepreneurs in the legal sector, as one of its founders, José Adán Salazar (InSight Crime, 2012).

**Box 4.1** The structure of *maras* and their ties with drug trafficking

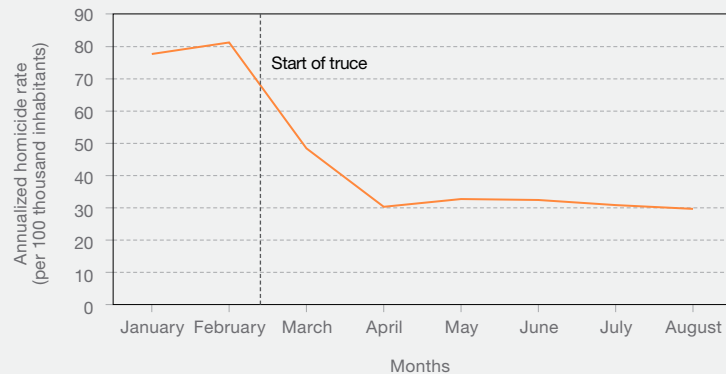
*Maras* rely on a network structure (Williams, 2001). Instead of a few leaders who rule over the lower ranks, there is a core of regional chiefs, called “*ranfleros*” and “*palabrerros*”, and a periphery encompassing the *maras*’ local groups, called “*cliques*”. This organization presents challenges for the authorities. First, it is a robust structure; because there is not a single leader, no *mara* becomes disorganized after the capture or killing of its core members, who are easily replaceable. Second, the periphery is not necessarily subordinate to the core; this means there can be quite unlikely alliances with groups that are geographically distant or belong to different social groups from those who traditionally would join a gang. This allows the organizations to have a transnational reach and maintain links to important political and economic players.

The *maras* used drug trafficking as an additional source of income. Its high profitability has increased their power as well as the incentives to fight with one another. Farah and Phillips (2013) say that the relationship between the Mexican cartels and the *maras* at present is uncertain, as it is under negotiation. This relationship varies across regions. For example, the Zetas are very powerful in Honduras and leave a minimal role to the *maras*, which is almost exclusively to sell drugs for consumption. In El Salvador, however, the *maras* charge tolls on the passage of the drugs and the Zetas only take over across the border with Guatemala. In addition, the *Mara Salvatrucha* and the Zetas have begun to work together on other fronts, such as the smuggling of illegal immigrants into the United States, pointing to potentially greater collaboration for drug trafficking in the future. Another important thing is that the power center of the *maras*, initially in Californian prisons, has gradually shifted to Central America, especially to the “*ranfleros*”, the regional bosses usually in Central American prisons.

There is a clear relationship between the high homicide rate in these countries and the clashes between these gangs. After a truce between the *Mara 18* and the *Mara Salvatrucha* was announced, for example, the homicide rates in Belize and El Salvador declined substantially (Chart 1, see page 155). The homicide rate in El Salvador, in particular, dropped more than 50%, even though official figures prior to the truce say that only 11% of homicides were related to gang violence (García, 2012). The average daily number of homicides dropped from 14 to 5.5, implying that not even 15 months into the truce almost 5,000 violent deaths had been avoided (*The Economist*, 2012).

Despite this outcome, critics of the truce insist that the State should not play the role of negotiator between drug-related criminal groups, as it entails a very clear violation of its sovereignty and recognition of its inability to control the problem. Additionally, critics insist that the truce is only a short-term solution, as it is unstable and any misunderstanding can make gangs return to their previous state of permanent war. Something like this happened with the truce in Belize, which only lasted until the assassination of two leaders led to a new wave of violence (*The Economist*, 2012). A last point of criticism suggests that the truce has not actually lowered the rate of homicides, but that gangs have reduced their visibility, dismembering and hiding the corpses (Seelke, 2013).

Continued on next page >

**Chart 1** Homicide rate in El Salvador (2012)

Source: Prepared by the author based on Ministry of Justice and Public Security (2012).

Despite the critical situation of the Central American states, there is little evidence to understand it and make a detailed diagnostic. There is little statistical information on the areas of operation of these groups, the policies implemented by the government to face them, and the levels of violence. Therefore, quantitative studies on the relationship between drug trafficking and violence are scarce despite the dimension and importance of the problem. This is influenced by these countries' very vulnerable economic conditions (even when compared with other Latin American countries) and by the fact that, because of their size, state agencies do not have enough resources to collect the necessary information to perform more rigorous studies and diagnostics on their security conditions.

## CONSUMER MARKETS

The third link in the drug-trafficking chain is that of consumer markets. Although the main markets are in the United States and Europe, consumption in Latin America has grown quite rapidly recently. The violence generated by the drug consumer markets is predominantly urban and different from the one generated by large-scale drug trafficking. Basically cartels and local gangs fight with one another over the control of neighborhoods, where each group has the monopoly on drug sale.

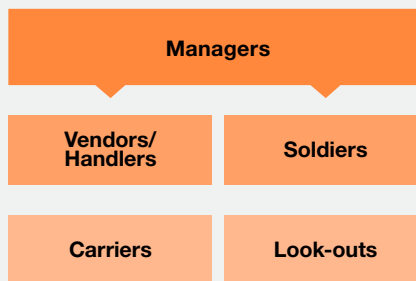
The prototypical case is that of Brazilian cities, especially São Paulo and Rio de Janeiro. To understand how microtrafficking works, it is helpful to understand its hierarchical structure and the role of each link in its chain of operations. This structure is presented in Box 4.2.

**The violence generated by the drug consumer markets is predominantly urban and different from the one generated by large-scale drug trafficking.**

#### Box 4.2 The structure of micro trafficking organizations in Brazil

At the upper echelon are the managers, who run all operations. At a second level are the vendors who are located on the street to distribute the drugs to customers; the packers, who receive the shipments and pass them to vendors in small quantities; and the so-called soldiers, who are responsible for controlling the territory where the organization works. At the bottom are the transporters, who are responsible for carrying small amounts of drugs from one place to another; and the observers (*olheiros* in Portuguese), who are on watch to warn the others when the police or members of enemy gangs are coming. The latter are the entry posts, where the children who enter the business start their criminal careers.

Figure 1 Hierarchical structure of micro drug-trafficking in Brazil



Source: Prepared by the author.

Most of the members are very young, with a high proportion of children. Like the *maras* in Central America, this has serious consequences for society, since when young people join a criminal gang they foreclose the possibility of receiving an education that could allow them to obtain a job and a steady income in the future. Once these young people enter the drug trade it is very hard for them to have viable alternatives in other sectors of the economy in the future.

Source: Observatorio de Favelas (2006).

In 2006, the *Observatorio de Favelas* (Favela Observatory) conducted an extensive work of interviews of criminal faction members<sup>11</sup> in Rio de Janeiro in order to understand their demographic characteristics, and the motivations behind their actions. It conducted 230 interviews in June 2006 with a monthly longitudinal follow-up until October of that year. The findings are revealing. Sixty seven percent of respondents were between 16 and 18 years old, and 57% had joined at the age of 13 to 15, reflecting the predominance of children in these groups, mostly from vulnerable

11. From the Portuguese *fações criminosas*, used to call the Brazilian criminal organizations.

sectors of Brazil's society. Sixty three percent of respondents were black or mulatto (*pardos*, in Portuguese). They usually came from large families, composed of children from different fathers. In addition, the parents of 38% of the respondents were from the Northeast, the least developed region of the Brazilian territory.

The study also reveals their poor working conditions. They worked over ten hours a day, and in many cases over 18 hours. The working days were especially long for drug dealers, whose incomes consist of commission fees. Violence was a constant part of working life. Fifty three percent of respondents had been arrested and 54% reported having suffered extortion by the police. Even worse, 68% had been in an armed confrontation with the police, 53% had been in a confrontation with a rival faction, and 24% had had firearm injuries. In a follow-up conducted two years after the study, Carvalho and Soares (2013) found that 18% of respondents had been killed, speaking for a much higher mortality rate than that of the active military forces in some wars.

These conditions make one wonder why young people enter a criminal career linked to drug distribution. Some authors point to young people who are irrational and think only in the short term (Lee and McCrary, 2005) or who, when facing this decision, are unaware of their risks and consequences. However, seventy three percent of respondents said that the most unpleasant aspect of their work was the risk of losing their lives. When asked why they took up drug dealing, a large majority responded that they were seeking to obtain high incomes quickly in order to support their families or out of lack of other alternatives. Interestingly, even if as members of these groups they may make more money than what they would elsewhere, 75% earned less than the minimum wage in 2006, which that year amounted to 260 reais, or about \$120 per month. Finally, about 20% took up drug dealing in order to interact with faction members, or for the sense of power or the adrenaline of the work. All this indicates that further consideration should be given to the type of incentives behind the decisions of young people to enter these criminal ventures.

Carvalho and Soares (2013) use data from the *Observatorio de Favelas* for a more detailed analysis of the drug dealers' wages. One of their most important findings is that they show no returns to education: more years of schooling do not lead to higher wages or higher positions in the hierarchy of criminal factions. On the other hand, there are returns to experience in the job and to having survived fights against other factions or against the police. Finally, having acted against the rules of the faction is associated with lower wages.

Carvalho and Soares (2013) also study the probability of leaving the drug business. This probability decreases with the years of experience, suggesting that those members who have developed more ties with the organization usually stick around. On the other hand, those members who are at the greatest risk, because they have been in more armed confrontations, have a higher probability of quitting, supporting the idea that gang members do value their own safety.

Finally, it is important to understand how the drug business works in Brazil. Much more than in other Latin American countries, there is an intimate relationship be-

**A study by Observatorio de Favelas reveals that violence was a constant part of working life among the criminal faction members in Rio de Janeiro.**

**In Brazil there is an intimate relationship between drug trafficking and organized crime, although the origin of the latter had nothing to do with drug trafficking.**

tween drug trafficking and organized crime, although the origin of the latter had nothing to do with drug trafficking. Criminal organizations in Brazil emerged from a particular policy of the military government, which in order to discredit leftist militants, put them in prison with common criminals. This allowed criminals to learn from the way militants were organized, and to use that know-how to mount criminal structures that then began to handle all the illegal businesses of Brazilian cities (Lessing, 2013). Paradoxically, the structure of criminal groups depends on their hierarchy in prison, against which the government can do little, since prisoners have already been prosecuted and sentenced. This has been exacerbated in recent years due to the easy access to cell phones, which allows them to run their operations unrestrictedly from prison.

One of the clearest cases is the *Primeiro Comando da Capital* (PCC), the main criminal faction operating in São Paulo, consisting of some 13,000 members, of which about 6,000 are incarcerated (Adorno and Salla, 2007). Its hierarchical structure has allowed the PCC to take advantage of the emergence of the drug business in Brazil in the nineties. Although this business is not the PCC's only source of funding, it was critical for the organization's current level of power. It made it possible, for example, for the PCC to stand against government forces in frontal battles. The clearest example of this occurred in May 2006, when the PCC carried out several attacks against the civilian police, the military police and prison authorities, ending in the death of 40 members of the authorities and 80 members of the PCC.

Rio de Janeiro, however, is the most prominent example of how criminal groups have become a major security problem in Brazil. Unlike what happened in São Paulo with the PCC—a criminal organization that extracts rents from any illegitimate business—factions in Rio de Janeiro are mainly engaged in the distribution of illegal drugs in the domestic market, dominating the business in different neighborhoods of the city. Many favelas are controlled by a criminal faction that controls not only drug trafficking but also exerts military control over its area of operation, while the presence of government authorities is almost nonexistent. One of the most notorious groups within the favelas is *Comando Vermelho*, which also originated in prison.

Rio de Janeiro is a particularly interesting case, because the authorities have tried several policies to deal with the factions, with diametrically opposite results to those expected even by the very promoters of the policies, from complete failure to considerable success. Until 2008, the government had made attempts to regain control of the favelas, but these attempts had ended up in costly clashes for both sides. Many critics denounced the excessive use of force by the state police, who justified virtually all killings under the guise of "*autos de resistência*" a relic from the military government implying self-defense. Between 2003 and 2007, the state police was responsible for 5,669 deaths, almost all under "*autos de resistência*", but independent sources estimate that two-thirds of them were just ordinary executions concealed by favorable legislation (Soares, 2009).

As of 2008 the government began to intervene in the favelas in a totally different way. In particular, it launched the program *Unidades de Polícia Pacificadora* (UPP), aimed at regaining state control over the areas controlled by criminal groups and

thus provide security to the population. Explicitly, the objective of this program was not to eliminate drug trafficking, nor to solve the problems of all the communities (Giménez, 2011). Instead, the program was an example of how a government can prioritize and define explicit goals when designing an intervention program against organized criminal groups. In the case of the UPP, the government admitted, at least implicitly, its inability to end drug trafficking and focused instead on minimizing its damage. It adopted a policy of selective enforcement, with the objective of reducing violence in the most violent favelas, not in the whole city.

How does the program work? First, the Government announces, with a two or three month notice, that it will take control of a favela. Second, it deploys a large occupation force, including elite units of the police and the army, and if necessary heavy weaponry like tanks and assault guns. Third, it sets up the UPP, which is a police force that will remain in the favela indefinitely but which, during the first months, focuses on strengthening ties with the community in order to build trust. Fourth, once the UPP is entrenched, the occupation unit is removed and the UPP stays in control. Finally, when the process is over, the government creates the next UPP to recover the next favela.

The police officers that form the UPPs are very different from traditional agents. In contrast with the military training traditionally received by the police, who see the inhabitants of the favelas as enemies, UPP members are trained in sociology and human rights and try to work with the favela residents to improve their security. Most of them have just graduated from the police academy. The idea is for them to be mostly officers who have not yet faced crime, or received bribes, or been contaminated by the corruption of other entities. The police salaries have also risen, which discourages corruption.

The success of the UPP was unexpected even for their creators. In most cases the occupation forces have been able to enter the favelas without resorting to violence, and the UPP has retained control after the occupation unit left. Thirty-four UPP have been set up to date, which has resulted in a large decrease in the violence used by the authorities in operations against organized crime groups involved in drug trafficking. Indeed, the number of *autos de resistência* –a measure of the degree of violence used by the state—has decreased significantly from the first implementation of the UPP, after several years of going up and staying at a high level (Chart 4.5, p. 160).

The first evaluation of the UPPs was undertaken by the *Fórum Brasileiro de Segurança Pública* (Brazilian Forum of Public Security) in 2012<sup>12</sup>. This assessment reviewed the trend in crime rates after the implementation of the UPPs, using the areas of Rio de Janeiro without UPP as control group. The results show a significant drop in all forms of crime using weapons. There was also a sharp drop in the number of *autos de resistência*. However, unarmed crime rates rose. The authors suggest that this may be because the renewed trust in the institutions motivated an increase in crime reporting. This explanation is supported by the analysis of citizen

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12. The study was coordinated by Ignacio Cano.

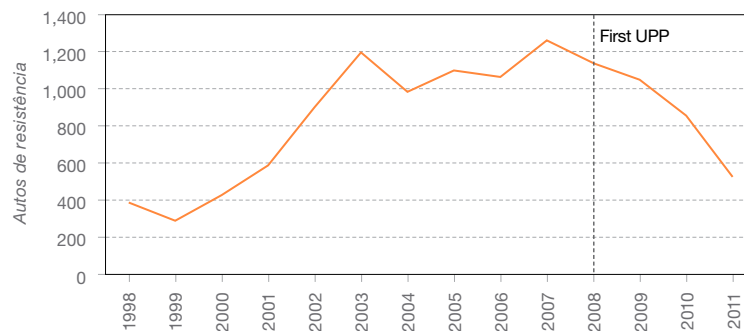
**The intervention in the favelas in Rio de Janeiro under the UPP program reduced violent crime between 60% and 75%, and decreased homicides 40%.**

crime reporting (e.g., *Núcleo Disque-Denúncia de Estudos*), showing that crime reporting increased immediately after the UPPs were set up. Moreover, most of the reporting before the arrival of the UPP was about crimes already committed, while after the UPP's arrival there was an increase in preventive reporting.

A more recent evaluation by Ferraz and Ottoni (2013) shows that the program reduced violent crime between 60% and 75%, with a decrease of about 40% in homicides and a significant reduction in deaths by the armed forces. The authors also find an increase in the reports of property crime, most likely caused by an increase in reporting rates. That is, the two evaluations show very positive results in terms of the reduction of violent crime and the trust in police institutions.

It is important for the police to have returned to areas of the city where their presence was nonexistent. This institutional strengthening is apparent in the interviews, which reveal that favela dwellers see the new police officers as more proximate and cordial, and even those who still consider them hostile state that it is now easier to complain about the abuse and see the consequences of their complaints.

**Chart 4.5** *Autos de resistência* in Rio de Janeiro (1998-2011)



Source: Prepared by the author based on *Fórum Brasileiro de Segurança Pública* of Rio de Janeiro (2012).

Despite the apparent success of the UPP, the program has not been without criticism. A salient criticism is that announcing the next favela to be targeted allows the leaders of criminal groups to escape and continue their operations from other locations. However, this is unlikely to have happened at a large scale in view of the downward trend of crime throughout the city. The evaluation by the *Fórum Brasileiro de Segurança Pública* (2012), in particular, shows that the effect of the UPP on the areas surrounding the treated areas is similar to that on the treated areas, especially as regards violent crime and robbery<sup>13</sup>. This is consistent with what was mentioned in Chapter 3: the location of crime is so important that when

13. Ferraz and Ottoni (2013) found increases in property crime in neighboring areas, although this could again be due to higher reporting rates.



the government manages to remove it in one place, it is not easy for it to move to surrounding areas.

Another major criticism of the UPP has to do with the intensity of police presence. While in Rio de Janeiro there are 2.3 police officers per thousand inhabitants, in the first 13 UPP there are 18 police officers per thousand residents. This entails high costs and rules out the replication of the program in the rest of the city, so that there will inevitably be abandoned areas.

Although the Brazilian case is the most studied and documented one, microtrafficking is a problem in all the urban areas of Latin America. In Colombia, Mexico and Central America, the same organizations that control the other stages of drug trafficking, such as cartels, criminal gangs, and *maras*, have also begun to compete to control the neighborhoods of retail drug sale. Additionally, Southern Cone countries have become major consumer markets, to which many analysts have attributed their rising rates of crime<sup>14</sup>. However, this has not been reflected in the emergence of criminal organizations with the visibility of those in Brazil.

An interesting case is that of Uruguay. In order to stop the increase in crime the Ministry of Defense issued a report with a number of proposals, including the legalization and regulation of marijuana production and consumption. In December 2013, the measure was approved by an act of Congress, making Uruguay the first country in the world to legalize marijuana (albeit other countries had decriminalized it before).

The Uruguayan initiative is not intended to encourage consumption. On the contrary, the government has promoted campaigns that highlight the risks of drug use. This, however, has not prevented a lot of criticism. All opposition parties were against the measure and there was a movement to promote a referendum on the issue. Meanwhile, international agencies emphasized that the law goes against the conventions of the United Nations, particularly that of 1961.

## OTHER ILLEGAL MARKETS

While drug trafficking has caused a lot of violence in Latin America, it is not alone. Other illegal markets generating violence in the region are smuggling (mainly of alcoholic beverages and cigarettes), arms trafficking, illegal mining, and human trafficking. In all these cases, the problem stems from a harm or an externality that the use of certain assets entails for the rest of society or even the user, so that the government decides to intervene to reduce or eliminate its market.

To this end, the government has a set of tools, similar to that used to face drug markets. First it must define a *de jure* strategy, which may involve strict prohibition or regulation, and in a second step it must define the *de facto* strategy. Thus,

**The initiative to legalize marijuana in Uruguay is not intended to encourage consumption. On the contrary, it pretends to regulate the market in order to reduce crime and problematic patterns of consumption.**

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14. A recent case of a strong jump in insecurity caused in part by the violence associated with microtrafficking is the city of Rosario in Argentina. The number of intentional homicides within the city limits was 130 in 2011, 154 in 2012, and 217 in 2013. The number of violent deaths in the past year yields a rate of 21 per 100 thousand inhabitants, more than tripling the national average.

**Arm trafficking is especially harmful for Latin America because it fuels the violence among criminals who use weapons for their operations and disputes.**

governments face a similar dilemma to that when they decide their drug policy. On the one hand, they should decrease the original costs of these markets, such as the violence caused by weapons, the environmental damage from illegal mining, the health hazards due to alcohol and tobacco, or the clear human rights violations attached to human trafficking. On the other hand, the strategy carried out against these markets can cause violence through the systemic channel.

Although the types of goods traded in illegal markets can be very diverse, the forms of violence used by the organizations involved are similar. The common denominator in these illegal markets is the coexistence of high rents (generated by high fixed entry costs) and illegality. This implies that once the criminal structure around certain illegal markets has been created, it can work for any illegal market, generating significant economies of scope. So, after consolidating their control of an illegal market, many organizations grow their portfolio of activities, extending their operations to other illegal markets. For example, in Colombia and Mexico it is very common for cartels to become involved in crimes like kidnapping and extortion, not only as a further source of income, but also as a strategy to diversify their portfolio of funding sources and be able to mitigate any possible shocks due to changes in government policies. This has also happened recently in Central America, where the *maras* have leveraged their structures to traffic drugs; or in Colombia, where several drug gangs have taken over illegal mining.

In the region there are many other illegal markets that are not violent, most likely because their fixed entry costs are not high and, therefore, their associated rents do not justify a criminal structure to protect them. Examples include the sale of pirated copies of music, movies and video games, and the sale of imitations of high value consumer goods such as watches, handbags and fragrances.

## **ARMS TRAFFICKING**

In the case of arms, the State's decision to ban or not to ban feeds on the debate of whether the availability of guns increases or decreases crime. On one hand, some argue that gun ownership encourages people to solve their problems violently and makes it easier for criminals to get weapons and use them for any unlawful purpose. On the other hand, others argue that the possession of firearms by civilians is a deterrent to those who wish to commit crimes. The empirical evidence on whether the availability of guns reduces violent crime is mixed, with some studies supporting this view (Lott and Mustard, 1997; Bartley and Cohen, 1998) and others contradicting it (Duggan, 2001; Ludwig, 1998; de Castro Cerqueira and de Mello, 2012; Restrepo and Villa, 2012).

Latin American countries have chosen to regulate the markets for weapons, while the United States has been much more permissive. This has created opportunities for arbitrage on the border of the United States and Mexico and a permanent flow of illegal arms from the United States, which has been exploited by violent Latin American organizations such as the *maras* in Central America or the Mexican cartels. Arms flows are huge: the Mexican government seized more than 23,000 firearms between 2004 and 2008 (Chu and Krouse, 2009), of which an estimated 87% were admitted illegally from the United States (GAO, 2009). The

Mexican government estimates suggest that about 2,000 guns per day cross the United States border.

While some back the legal possession of weapons, illegal weapons are unequivocally harmful, since they are only available to those willing to break the law, and not to those who want to defend themselves. Dube, Dube and García Ponce (2013) exploit the expiration of the *U.S. Federal Assault Weapons Ban*<sup>15</sup> in 2004 to show how the increased availability of legal guns in the United States has effects on the levels of violence in Mexico (probably through increased availability of illegal weapons smuggled from the United States). Indeed, they find that the lapse of restrictions in some border states led to a disproportionate increase in violence in the Mexican municipalities closer to those states.

Arm trafficking is especially harmful for Latin America because it fuels the violence among criminals who use weapons for their operations and disputes; that is, it combines with other phenomena to create a very serious threat to the safety and welfare of its citizens. Stopping this flow of illegal arms is a big challenge for the region, especially when their sale in the United States is permitted and poorly controlled.

## ILLEGAL MINING

Illegal mining has typically focused on traditional minerals such as gold, silver and platinum, as is the case in the Colombian Pacific, Southeast Peru, and the Colombian region of Vichada. In several Latin American countries there has been a recent surge in illegal mining associated with the international financial crisis, which prompted investors to take refuge in less risky assets like gold and caused the price of such commodities to soar. There has also been illegal mining of materials related to electronic devices such as coltan, which in recent years has been extracted illegally in the region of Vichada in Colombia.

Illegal mining typically arises in regions where there was initially artisanal mining, where at some point an illegal armed group takes over the extraction of resources. This group appropriates the mining rents at the expense of the local community who needs them for their subsistence. Thus, illegal mining is often exploited by groups that were already violent and use this power to take over a highly lucrative business.

Idrobo, Mejía and Tribin (2013) show how illegal mining caused a major increase in the homicide rates and the number of massacre victims in Colombia.

## HUMAN TRAFFICKING

This phenomenon has been underestimated, and thus little studied, in Latin America. It usually starts with a false promise by a criminal, who commits to take the

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15. Chicoine (2011) also analyzes this episode, but with a less precise methodology, because he only has data at the state level in Mexico. The results of both studies are consistent.

victim to a region where his living conditions will improve. When it is time to comply, he uses trickery and threats to maintain control over the victim and exploit him, either sexually or for work.

Although not necessarily violent, human trafficking is a clear threat to public safety, especially for women and children. It takes a lot of Latin Americans to hardships that are hard to conceive in the XXI century.

The main purpose of human trafficking in Latin America is sexual exploitation (51%) and forced labor (44%) (UNODC, 2012). Although in some cases Latin American women are taken to the Middle East or the Far East for sexual exploitation (Hurtado and Pereira Villa, 2012), human trafficking is predominantly local: according to UNODC (2012), 88% of South American victims end up within the continent and 47% within their home countries. In North America, Central America and the Caribbean, 65% remain within the region, and 30% within the country.

Human trafficking has very little visibility because the victims are usually in situations that limit their access to the authorities, such as threats of repossession of their family homes, or simply living in another country illegally. In addition, human trafficking is a crime that could easily be avoided by raising awareness about who the potential criminals are, so that the potential victims do not fall into their tricks. Therefore, studying human trafficking, to the extent that it can help raise awareness, can have a major impact.

## Conclusions

There is an interrelationship among illegal markets, violent crime and the role of the State. State intervention can create high illegal rents and significant negative unintended consequences on public safety.

Although the trade-offs facing the State when deciding on whether to regulate or prohibit a market (or parts thereof) to reduce the production, trafficking and consumption of goods or substances are not simple, governments must consider the best available evidence in their decision-making process. In some markets, such as that of drugs, this dilemma is always there, but in cases like human trafficking, the State should opt for strict prohibition.

There are no perfect public policies for the markets of substances or goods that cause direct or collateral harm. The choice is between policies that seek to minimize the damage, both the direct damage from consumption and the negative side effects caused by state intervention, especially on public safety.

There are no best practices to deal with all illegal markets, either. In some cases, such as that of drugs, the international experience shows that strict prohibition has failed to end the consumption while generating all sorts of costs, both to consumer and to producer and transit countries. By contrast, those countries that have opted for a public health approach and regulated drug use have done better. Portugal

and Switzerland stand out as examples. More recently, Uruguay has opted for the regulated legalization of marijuana, a move worth monitoring for other countries in the region in terms of its potential impact on the use of marijuana and other drugs and on citizen security, public health, and human rights.

Using public health tools does not mean a lax position on crime. On the contrary, it means prioritizing the use of the (scarce!) resources of the judiciary so that its efforts are focused on reducing crime and on making the use of violence in illegal markets ever less profitable.

In other illegal markets such as illegal mining and smuggling, public policy should be focused on preventing informality and the penetration of criminal groups.

As in many other markets, a necessary condition for the emergence of illegal markets are the arbitrage opportunities afforded by excessive state regulations (or, in the extreme, complete prohibition). Not all arbitrage opportunities create an illegal market, let alone a violent illegal market. The presence of the State and its institutions play a mediating role between arbitrage opportunities generated by state regulations and the emergence of illegal markets and organized crime. When the State has a wide presence (social programs, opportunities for social inclusion, education programs, and incentives for the creation of legal firms), there may be arbitrage opportunities without there emerging illegal markets, let alone violent criminal organizations that control them. If the arm of the State does not only bring repressive policies, regulation and control are likely to be much more efficient and sustainable over time.



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# THE CRIMINAL JUSTICE SYSTEM

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## Chapter 5





## Chapter 5

# THE CRIMINAL JUSTICE SYSTEM<sup>1</sup>

*“Punishment is justice for the unjust”*

St. Augustine

## Introduction

The criminal justice system is the institution through which the State punishes or reforms those who violate society’s norms, imposing penalties depending on the crime committed. The most serious crimes are usually punished with imprisonment, with the idea that a combination of deterrence and incapacitation will keep crime under control. The prison population in Latin America and the Caribbean is currently 1.3 million, which means there are 229 prisoners per 100 thousand inhabitants<sup>2</sup>. Yet, to send someone who has committed a crime to jail, it is first necessary to arrest, prosecute, and judge him, so that countries devote considerable resources to maintain police forces, prosecutors, and judicial systems with the required staff, equipment, and training needed. How effective are the criminal justice systems in Latin America to prevent and control crime and insecurity?

This chapter discusses the operation of the criminal justice system in the region, focusing on four key components: the police, with its power to arrest and investigate; the prosecutors, with investigative and prosecutorial powers; the Judges, who preside over trials and pronounce sentences; and the correctional institutions, which are responsible for administering punishment. These four institutions determine the cost of committing a crime, so that their effectiveness is key to design effective crime policy.

The government must decide how to allocate resources to fight insecurity and how to distribute these resources among the various components of the criminal justice system. For example, it can boost police presence to increase the number of arrests; improve the efficiency of the prosecutors to investigate, prosecute and indict; or increase the time that criminals spend in prison by extending sentences, limiting parole, or establishing mandatory minimum prison terms. It must also decide how these resources are used within each of the institutions of the criminal justice system. For example, it can design policing strategies to increase the number of arrests broadly, or focus on certain types of offenses, on those offenders deemed most dangerous, or on those places with the highest crime rate. That is, the problem of the government can be summarized as that of choosing the mix of public policies that minimize the costs of crime to society, subject to budget and organizational constraints (McCrary, 2009; Durlauf and Nagin, 2010)

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1. Pablo Brassiolo wrote this chapter with research assistance from Mauricio Stern.

2. *World Prison Population List*, ICPS (2013).

The cost of committing a crime can be expressed in terms of the expected punishment, which depends on the probability of being sentenced (certainty of punishment) and what that sentence implies (severity of punishment). Crime policy can influence the incidence of crime through each of these variables or a combination of both.

In turn, the probability of being sentenced can be decomposed into the probability of arrest, the probability of being indicted and charged, and the probability of being tried and convicted. The interaction of the police, the prosecution and the judicial system throughout the criminal justice process is particularly relevant in the case of Latin America, where the proportion of crimes that end in a conviction is relatively low. Indeed, only 4.5 people are convicted for every 100 crimes recorded by the police, which is half the ratio in North America and less than a third of that in Europe.

The police are a major determinant of the probability of punishment. However, the size of the police force varies greatly across countries and even across cities within a country, partly because it is difficult to determine what the police's ideal size is. One of the main reasons for this is the two-way relationship between the size of the police and the crime rate: there tends to be more police where the incidence of crime is higher. However, once this empirical difficulty is circumvented, it becomes clear that more police presence reduces crime. Obviously this does not mean the size of the police should be increased until crime disappears, but rather that both the benefits of reducing crime and the cost of the additional resources must be weighed.

The police size is not the only thing that matters. Their effectiveness depends on how they use their resources. Strategies such as smart policing, community policing programs, and problem-oriented policing, all increase the effectiveness of police action in certain circumstances.

For punishment to take place, however, the police are not enough. Both prosecutors and courts are key determinants of expected punishment because they determine the probability that punishment actually takes place once a person came into contact with the criminal justice system. Most countries in the region have implemented judicial reforms, switching from an inquisitorial to an accusatorial system. To the extent that the changes create more confidence and satisfaction with the judicial system, this might create more incentives for people to report crimes, leading to a greater probability of arrest and punishment. However, little is yet known about the effectiveness of such reforms to reduce the incidence of crime.

Finally, prisons can influence crime through three main channels: the incapacitation of criminals, the deterrence of criminal behavior, and the rehabilitation of those who committed crimes for their subsequent reintegration into society.

In recent decades, swelling insecurity and demands for greater law enforcement have led to an increase in the prison population in most countries of the region,

which has resulted in alarming levels of overcrowding. Not only does this deteriorate the living conditions inside prisons but it also limits the potential of prisons to reform the offenders, or even favors future re-offense.

Adding to this the fact that imprisonment appears to have only a modest deterrent effect, alternative sentences, such as electronic monitoring without imprisonment, emerge as an effective option, particularly for those whose re-offense risk is lower, since it would prevent them from entering into contact with more dangerous criminals while also generating important fiscal savings.

In any case, it is necessary to further evaluate the different alternatives to administer punishment and make it more effective to incapacitate the offenders with highest criminal activity, serve as a deterrent mechanism for potential offenders, and rehabilitate those who can reintegrate into lawful activities.

## A conceptual framework

An optimal crime control strategy combines laws and activities that minimize the costs of insecurity and the costs of crime control. The problem is not simple. In addition to operational issues, it is necessary to consider moral issues: Is imposing punishment acceptable? Is the type and severity of punishment reasonable? Do those who break the rules get their due? The criminal regimes of most countries in Latin America justify punishment on a combination of retribution and instrumental grounds (see Box 5.1).

### **Box 5.1** The purpose of punishment

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Is it morally acceptable to punish those who commit a crime? Whether a society has the right to punish those who commit criminal acts has revolved around two general principles: retribution and instrumental grounds (i.e., crime control).

The principle of “retribution” claims that lawbreakers should be punished as a compensation for the harm they caused. Punishment is applied, thus, simply because it is deserved, and its extent and severity should bear some relation to that harm. Under this conception, punishment does not need any additional justification beyond compensating for the harm caused. In other words, punishment is an end in itself.

The “instrumental” principle (or that of “crime control”) justifies punishment on the generation of a greater good, specifically crime reduction. That is, punishment is a means to reduce crime, not an end in itself. It can help reduce crime through three mechanisms: rehabilitation, deterrence, and incapacitation.

The mechanism of “rehabilitation” implies considering punishment as a treatment to reform offenders. Punishment is intended to prevent someone who committed a crime from reoffending, as a result of a change in his values. It is not necessary for the extent or the severity of punishment to be proportionate to the harm caused, so that punishment cannot be predetermined but depends on the necessary time to rehabilitate the offender.

The mechanism of “deterrence” implies that punishment must help reduce the incidence of crime by deterring criminal behavior. Deterrence can be specific, when punishment deters precisely those who have been punished from reoffending for fear of being punished again; or general, when punishing some deters others. In any case, punishment is justified on its effects on future actions.

Finally, the mechanism of “incapacitation” is based on the notion that punishment protects society from those who break the law, by keeping them behind bars for a given period. Law-breakers are punished according to what their future conduct can be expected to be rather than their past crimes, which could lead to ethical question marks.

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**Source:** Prepared by the author on the basis of Banks (2013) and Bushway and Paternoster (2009).

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**The more deterrence,  
the more effective crime  
control policies will be.**

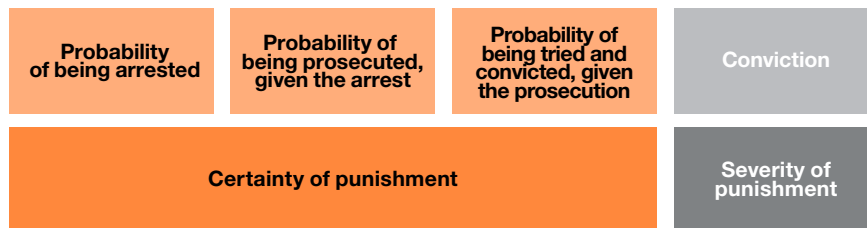
Beyond ethical considerations, crime control requires a combination of policies that allow to reduce crime’s costs, under budgetary, organizational, and procedural constraints. The work of Becker (1968) and later contributions by many authors<sup>3</sup> serve as a guide for thinking about these policies.

In particular, crime can be controlled by incapacitating offenders and by preventing crime through deterrence. The more deterrence, the more effective crime control policies will be (Durlauf and Nagin, 2010).

How can this be achieved? From a rational choice perspective, at the time of committing a crime, potential law-breakers compare the potential financial and psychological benefits of that decision with its costs, represented by the expected punishment. And the expected punishment, in turn, depends on the certainty and the severity of punishment. These two components should deter the potential offender and contribute to law enforcement (Figure 5.1).

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3. See for example Ehrlich (1996), Dilulio (1996), and Freeman (1999).

**Figure 5.1** Components of the expected punishment

Several studies suggest that it is more effective to increase the certainty of punishment than its severity.

Source: Prepared by the author.

The State must decide how many resources to allocate to fight crime and how to allocate these resources among policy initiatives that affect the certainty and the severity of punishment<sup>4</sup>. How many resources should be allocated to fight crime depends on budgetary considerations. How they should be allocated across policy initiatives depends on the deterrence potential of each initiative, ultimately an empirical question. Studies such as Durlauf and Nagin (2010) suggest that it is more effective to increase the certainty of punishment than its severity<sup>5</sup>.

Their approach assumes that potential criminals take into account their future situation to make decisions, and that what they *think* will happen to them matches what will *actually* happen to them if they commit a crime (Durlauf and Nagin, 2010). The limitations of this model are evident when one recalls that many crimes are economically unattractive considering the benefits and risks involved, and yet they are committed. Levitt and Venkatesh (2000), for example, show that drug dealers' expected gains are barely above what they could make in legitimate activities, with that small wage gap not offsetting the risks involved. Similarly, Kleiman (2009) shows that the expected gains from property crimes are equivalent, on average, to just \$10 per day of expected prison. Why do some crimes persist despite not being an attractive alternative? And what are the implications for crime policy?

One explanation is that potential offenders underestimate the probability of being punished, which could happen if their perceptions adapt gradually to changes in the true probability of punishment, or if they overestimate their ability to avoid pun-

4. Examples of measures that increase the certainty of punishment could be to increase police presence to boost the probability of arrest, or to improve the investigative capacity of prosecutors to increase the probability that they will prosecute and bring to trial those who have been arrested. Meanwhile, the severity of punishment could be increased by extending prison terms.

5. This can be rationalized assuming that potential offenders assign a relatively high value to the present vis-à-vis the future. For a given level of severity of expected punishment, the deterrent effect will be greater the more certain that punishment is. The intuition is that, since the severity of punishment is reflected in longer sentences, the marginal effect of increasing the length of an already long sentence could be really modest, because potential offenders have relatively little concern for their future situation, or because part of the costs of a prison sentence (such as the stigma of having been in jail and the disruption of family and work relationships) vary relatively little with its length. A formal presentation of this argument can be found in Durlauf and Nagin (2010).

**The certainty and severity of punishment depend on the police, the prosecution, the judicial system and the correctional institutions.**

ishment<sup>6</sup>. In this case, the deterrent effect of changes in the *objective* probability of punishment would depend on how these changes affect its *perceived* probability. That is, not only is it necessary for the costs of committing a crime to be high for the offender, but also for potential offenders to perceive these costs as high. Appropriate policies to achieve this would be, for example, to communicate more effectively the consequences of breaking the law, or to make policing more visible.

Another explanation for the prevalence of seemingly irrational crimes is that potential criminals could act out of habit or impulse rather than as a result of a rational decision. If this were the case, policies that promote self-control, such as cognitive behavioral therapy, would be called for<sup>7</sup>.

## The criminal justice system in Latin America

### THE CRIMINAL JUSTICE INSTITUTIONS

The certainty and severity of punishment depend on the components of the criminal justice system: the police, the prosecution, the judicial system and the correctional institutions. Figure 5.2 shows how these institutions influence the incidence of crime in a society.

The police are the institution responsible for preventing crime, arresting suspected offenders and performing criminal investigation, and it counts on the use of force.

The prosecutors, whose role has been modified by recent reforms in the criminal procedure codes of several countries (for a description of these reforms see Chapter 6), are responsible for leading criminal investigations, filing charges against the defendants, and representing society in oral trials. The actions of the police and the prosecutors are key determinants of the probability of punishment.

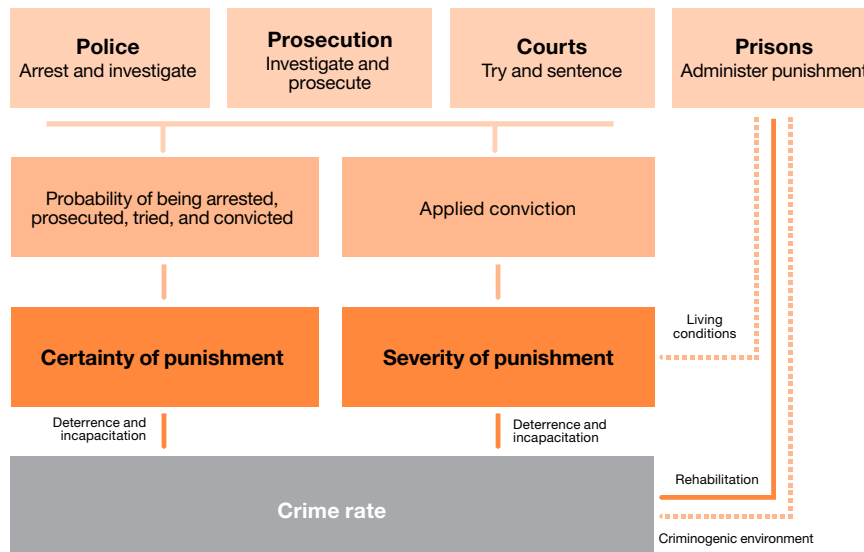
The courts are responsible for trying the accused, determining criminal responsibility, and pronouncing sentence. They affect both the certainty and severity of punishment. On one side, judges pronounce sentences in accordance with the law, which reflects in the severity of punishment. On the other side, their ability to solve cases in a timely manner determines the speed with which sentences are applied, which could affect the certainty of punishment<sup>8</sup>.

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6. Kleiman (2009) mentions three possible factors that could explain the excessive optimism of potential criminals: the belief that luck is on their side, the belief that they can exert some control over events that are actually random, and overconfidence.

7. Chapter 2 discusses the effectiveness of such policies as crime prevention and control tools. See also Latessa (2006) and Lipsey (2009).

8. It could be that lower delays in the completion and resolution of trials reduce the probability that a case prescribes or that the available evidence against the accused deteriorates, increasing the probability of conviction.

**Figure 5.2** Institutions of the criminal justice system and their relationship with crime

In the main cities of Latin America, only 45% of crimes get reported.

Source: Prepared by the author.

Finally, correctional institutions are responsible for administering punishment. Incarceration may contribute to reducing crime through the rehabilitation and reform of offenders. In practice, however, the relationship between incarceration and crime is more complex. On one hand, prisons' living conditions affect the severity of punishment and, therefore, may also have a deterrent effect<sup>9</sup>. On the other hand, many studies argue that prisons increase, rather than decrease, inmates' re-offense rates, on account of the negative influence of peers, the erosion of human capital and the associated decline of future employment opportunities, and the effect of stigma (Kling, Weiman and Western, 2001; Bayer, Hjalmarsson and Pozen, 2009; Di Tella and Schargrodsky, 2013; Ouss 2011).

## THE STAGES OF THE CRIMINAL JUSTICE SYSTEM

When someone commits a crime, for punishment to take place it is necessary to capture and arrest the criminal, prosecute him, charge him and put him on trial, and sentence him<sup>10</sup>. But only a small fraction of all crimes ends in a conviction, which can be explained by several reasons.

9. Katz, Levitt and Shustorovich (2003) show that poor living conditions in many US prisons have an even stronger deterrent effect on crime than the death penalty.

10. The definition and scope of the various stages of the criminal justice system and the actors involved and their roles vary across country.

First, it is necessary for the police to find out about the crime, which usually happens when the victim or somebody else reports it. But not all victims decide to report. For example, in the main cities of Latin America, only 45% of crimes get reported<sup>11</sup>. The reasons are lack of confidence in the ability or willingness of the police to solve the problem (48% of victims say they did not report a crime because “the police would not have done nothing”) and lack of confidence in the police as an institution (14%)<sup>12</sup>.

Second, once a crime is recorded by the police, there may or may not be an arrest. When there is an arrest, the police or the prosecution perform an investigation and must decide whether there is enough evidence to process the arrested person. If he is processed, once again the prosecution must decide whether he is charged and brought to trial. Finally, once the trial is held, few cases end in a conviction. Some reasons why not all detainees are convicted may be lack of evidence to proceed with the process, the application of sanctions that resolve the case before trial, or the conclusion of the trial without a conviction.

Chart 5.1 illustrates this kind of “leakage” along the process, relying on aggregate data for three regions: Latin America and the Caribbean, North America (with the exception of Mexico, included in the first group) and Europe<sup>13</sup>. Bars show the number of people arrested, tried, and convicted per 100 crimes (upper panel) and per 100 homicides (lower panel) as recorded in police statistics<sup>14</sup>.

Latin America and the Caribbean have the lowest ratio of people convicted to crimes: only 4.5 people are convicted per 100 crimes, compared with 9 in North America and 15.2 in Europe. In Europe, the greatest leakage takes place at the beginning of the chain: only 28 people are arrested per 100 crimes, while in the subsequent stages the leakage is relatively smaller: out of those 28 arrested people, 21.4 are processed and 15.2 are sentenced. In North America, the greatest leakage takes place in the middle of the process: 44.2 people are arrested per 100 crimes (the highest rate of all regions), but then only a third of them are processed. Latin America and the Caribbean have in-between arrest and processing rates, but the lowest ratio of convicted to processed people (31% versus 66% in North America and 71% in Europe).

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11. According to data collected in the 2013 CAF survey.

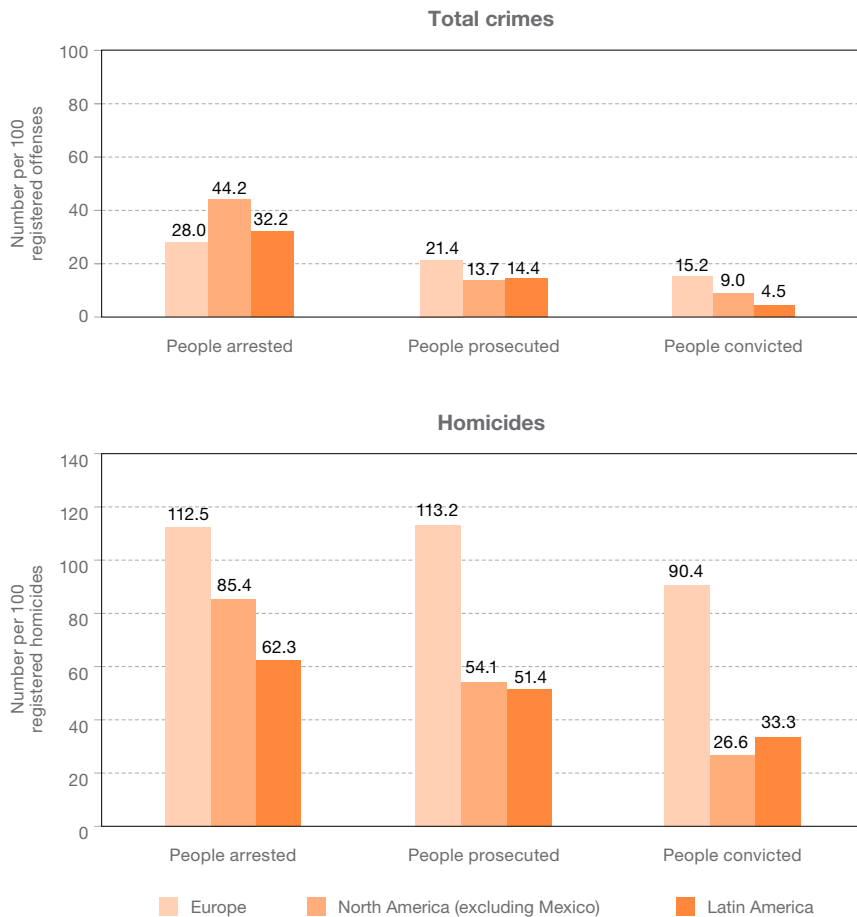
12. The crime reporting rate for 2005 was 46% in Canada, 48% in the U.S. and 52%, on average, in Europe, according to data reported by Van Dijk, Van Kesteren and Smit (2007) based on the International Crime Victimization Survey (ICVS).

13. The data come from Smit and Harrenford (2010), who rely on the statistics provided by the United Nations Surveys on Crime Trends and the Operations of Criminal Justice Systems and make an effort to eliminate as many inconsistencies as possible.

14. It should be noted that the unit denoted by the bars (number of people) is not the same as that of the crimes recorded by the police, since a crime could be committed by more than one person and a person could be responsible for more than one crime.



**Chart 5.1** Number of adults arrested, prosecuted and convicted per 100 registered offenses in American and European countries<sup>a/</sup> (2006)



**Stages of the criminal justice process**



a/ The graph shows the median number of people arrested, prosecuted, and convicted, per 100 registered offenses (upper panel) and per 100 registered homicides (lower panel). Latin America includes Bolivia, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Dominican Republic, Uruguay and Venezuela. North America (excluding Mexico) includes Canada and the United States. Europe includes Austria, Belgium, Bulgaria, Croatia, Cyprus, Denmark, Slovakia, Slovenia, Spain, Estonia, Finland, France, Greece, Holland, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Norway, Poland, Portugal, Czech Republic, United Kingdom, Romania, Sweden and Switzerland.

**When one link of the criminal justice system is weak, the whole chain suffers.**

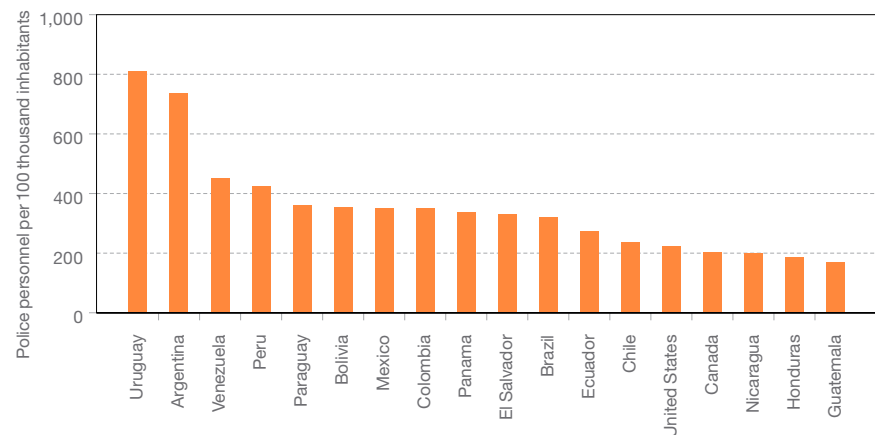
In the case of homicides, there is generally less leakage along the process, but the number of people convicted per 100 homicides is still low in Latin America, especially in comparison with Europe: 33 versus 90. In North America, that ratio is even lower, just 27<sup>15</sup>.

All the institutions related to crime policy are closely interrelated and play a key role in crime control. The efficiency of the criminal justice system depends on the efficiency of each of its components. When one link is weak, the whole chain suffers.

## THE SIZE OF THE CRIMINAL JUSTICE INSTITUTIONS

The size of the institutions of the criminal justice system varies greatly between countries.

**Chart 5.2** Police personnel per 100 thousand inhabitants in Latin America (several years)<sup>a/ b/</sup>



a/ The data refers to the total number of police officers, in non-administrative positions, from all the police agencies in each country (security or preventive forces, research bodies, and special forces). In the case of Venezuela, the total includes the National Guard, whose main mission is to maintain internal order.

b/ Argentina, 2007; Bolivia, 2010; Brazil, 2011; Chile, 2011; Colombia, 2012; Ecuador, 2008; El Salvador, 2011; United States, 2011; Guatemala, 2011; Honduras, 2011; Mexico, 2009; Nicaragua, 2011; Panama, 2011; Paraguay, 2008; Peru, 2012; Uruguay, 2008 and Venezuela, 2010.

**Source:** Prepared by the author based on Kronick (2014b) and OAS (2013).

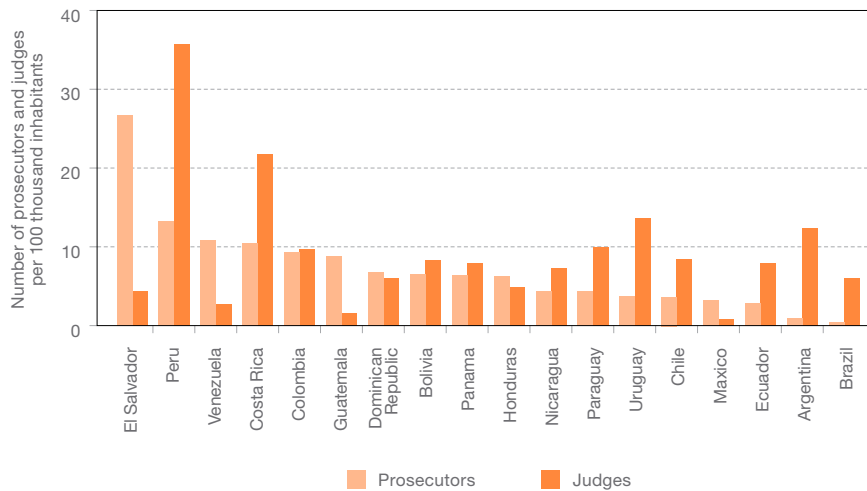
15. The figures refer to numbers of people per number of crimes, regardless of the number of people involved in each crime. Because the percentage of homicides perpetrated by organized crime and gangs in Latin America and the Caribbean is higher than in other regions (see the Global Study on Homicide 2011, by the United Nations), a higher number of convicts per homicide does not necessarily reflect a lower level of impunity.

Chart 5.2 shows the number of police officers per 100 thousand inhabitants, based on data compiled by Kronick (2014b) and the Organization of American States (OAS)<sup>16</sup>. This number ranges from 170 in Guatemala to 809 in Uruguay, with a regional average of 368, well above the number of police officers per 100 thousand inhabitants in more developed countries such as the United States (223)<sup>17</sup> and Canada (202)<sup>17</sup>.

**The number of police officers per 100 thousand inhabitants ranges from 170 in Guatemala to 809 in Uruguay, with a regional average of 368.**

Kronick (2014b) highlights other interesting facts regarding the distribution of police forces. First, in countries with a subnational police force, the size of that force also varies considerably across countries. Second, the relative weight of the federal and the subnational police forces has changed over the past decade, not always in the same direction. For example, while in Mexico the number of federal police officers as a percentage of the total police increased significantly between 2005 and 2012, in Venezuela, the federal police lost weight relative to municipal police forces since 1989, when municipalities were entitled to have their own police. Third, in countries with federal police only, the distribution of agents across jurisdictions also varies significantly. For example, in Honduras, the district with more police officers per capita has 4 times more police officers per capita than the district with the lowest ratio.

**Chart 5.3** Prosecutors and Judges per 100 thousand inhabitants in Latin American countries (2011)



Source: Prepared by the author based on Barbolla (2012).

16. The data collected by Kronick (2014b) include the police forces in all levels of government, whereas the statistics compiled by the OAS include the national police only. This entails big differences in federal countries with subnational police forces such as Argentina, Brazil, Mexico and Venezuela.

17. During the past decade, the size of the police force relative to the population has remained constant or increased slightly in most countries of the region, with some exceptions, such as Panama, where it has declined.

**The number of prosecutors increased in many countries of the region as a result of the replacement of the inquisitorial system for the adversarial system.**

Chart 5.3 (see p. 179) shows the number of prosecutors and judges per 100 thousand inhabitants. In the case of prosecutors, while in Argentina and Brazil there is not even one prosecutor per 100 thousand inhabitants, in El Salvador there are 27, and in the whole region, on average, there are 7. This heterogeneity is also observed in most developed countries. The number of prosecutors per 100 thousand inhabitants at the beginning of 2000 was not even one in Japan, about 6 in Canada and Germany, and about 12 in the United States (Duce, 2005)<sup>18</sup>.

The number of prosecutors increased in many countries of the region as a result of the replacement of the inquisitorial system for the adversarial system, which gave new roles to the prosecution and demanded its institutional strengthening (Duce, Sources and Irrigation, 2009). For example, in Colombia, where the adversarial system went into effect in 2005, the number of prosecutors per capita increased 7% in three years. In Mexico and Panama, where the adversarial system went into effect in 2008, the number of prosecutors per capita increased 25% and 36%, respectively, in three years. And in Peru, where the reform took place in 2006, the number of prosecutors per capita increased 80% in three years<sup>19</sup>.

In the case of judges, the number of judges per 100 thousand inhabitants ranges from less than one in Mexico to 36 in Peru, with a regional average of 10<sup>20</sup>. The situation is not very different in most developed countries. For example, Canada and Japan have about three judges per 100 thousand inhabitants; the U.S. has about 11; and France, just over 12 (Ramseyer y Rasmusen, 2010).

Regarding the size of the prison population, it amounts to about 1.3 million people in Latin America and the Caribbean, which means there are 229 prisoners per 100 thousand inhabitants. This rate is higher than the world average (144 prisoners per 100 thousand inhabitants) but significantly lower than the U.S. rate (716 prisoners per 100 thousand inhabitants)<sup>21</sup>.

Chart 5.4 shows the number of prisoners per 100 thousand inhabitants in 1992 and 2013 for Latin America and the Caribbean, Canada, Germany and the United Kingdom. Except for Canada, this number increased in all countries between those years, especially in El Salvador (335%), Brazil (270%) and Colombia (214%).

The number of prisoners is a function of people's crime propensity, the criminal laws, and the efficiency of the institutions responsible for enforcing those laws. This makes it difficult to establish precisely why the prison population has increased. Azaola and Bergman (2003) study the rise in the prison population in Mexico between 1992 and 2003 and conclude that it was due to a combination of a higher crime rates, more severe penalties, and administrative measures that prolong prison terms.

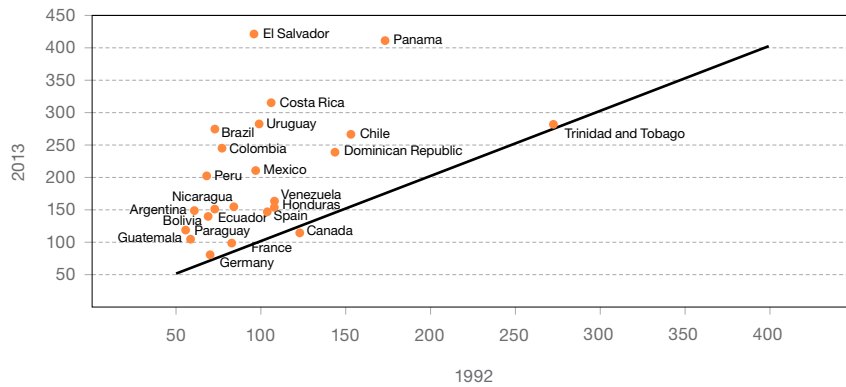
18. The US figure refers to the number of state prosecutors in cities where the population exceeds one million.

19. The figures come from Barbolla (2012).

20. The number of judges relative to the population has remained relatively stable over the past five years in most countries of the region; However, it has increased in some cases (e.g., 120% in Chile, 35% in Costa Rica, and 21% in Peru) and decreased in others (60% in Venezuela, 18% in Guatemala, and 12% in Colombia).

21. *World Prison Population List*, ICPS (2013).

**Chart 5.4** Imprisoned population per 100 thousand inhabitants in American and European countries (2013 vs. 1992)<sup>a/</sup>

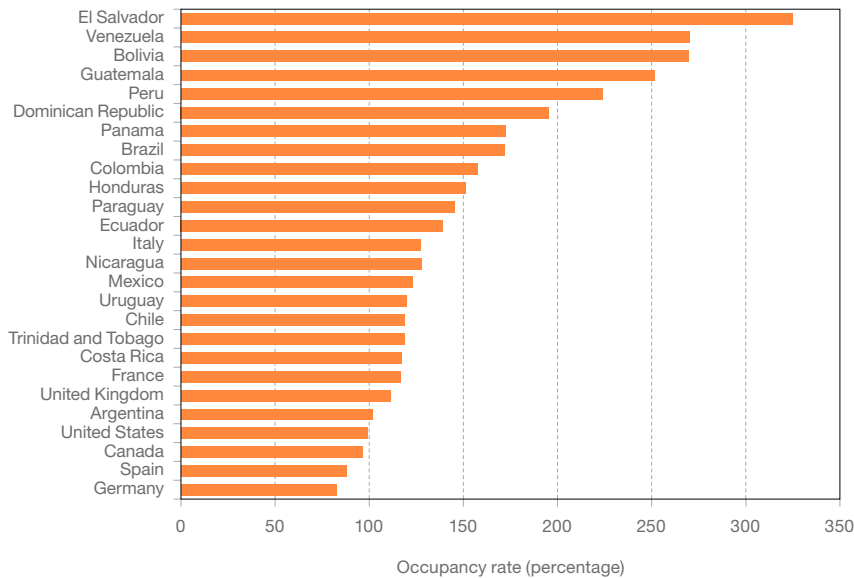


During the last two decades, the number of prisoners as a proportion of the total population has increased in almost every country in Latin America.

a/ The United States is excluded from the graph to optimize display. The imprisoned population in the country increased from 592 prisoners per 100 thousand inhabitants in 1992 to 716 in 2013.

Source: Prepared by the author based on ICPS (2013 y 2014).

**Chart 5.5** Prison occupancy rate in American and European countries (several years)<sup>a/</sup>



a/ Germany, 2013; Argentina, 2012; Bolivia, 2012; Brazil, 2012; Canada, 2009; Chile, 2013; Colombia, 2014; Costa Rica, 2010; Ecuador, 2010; El Salvador, 2012; Spain, 2013; United States, 2011; France, 2013; Guatemala, 2013; Honduras, 2013; Italy, 2014; Mexico, 2013; Nicaragua, 2010; Panama, 2013; Paraguay, 2012; Peru, 2013; United Kingdom, 2013; Dominican Republic, 2011; Trinidad and Tobago, 2013; Uruguay, 2012 and Venezuela, 2011.

Source: Prepared by the author based on ICPS (2014).

**Higher levels of incarceration, coupled with budgetary constraints to improve prison infrastructure have led to a significant level of prison overcrowding in most countries of the region.**

Beyond its causes, higher levels of incarceration, coupled with budgetary constraints to improve prison infrastructure have led to a significant level of prison overcrowding in most countries of Latin America and the Caribbean (Chart 5.5, p. 181). The prison occupancy rate in most of the region is above 100%. El Salvador, Venezuela, and Bolivia, for example, have two to three times as many prisoners as their infrastructure would allow. Only Argentina has a prison occupancy rate close to 100%. Among the developed countries, in contrast, only Italy, France, and the UK have rates above 100%.

## **The criminal justice institutions and the certainty of punishment: police, prosecutors and courts.**

There is a consensus that the main function of the police should be the control and prevention of crime, and that their success or failure should be measured by their effectiveness in achieving this goal rather than by intermediate variables such as the number of arrests<sup>22</sup>. According to Kleiman (2009) prosecutors should be evaluated in the same way. What is the effect on crime of the institutions of the criminal justice system?

### **THE EFFECT OF THE POLICE**

It is possible to think that an increase in the size of the police force would favor a reduction in crime. However, determining the causal relationship between the size of the police force and crime is difficult because the cities and countries with the highest levels of crime tend to have the largest police forces, often resulting in a positive association between the crime rate and the size of the police force.

To overcome this difficulty, some studies analyze the impact on crime of changes in the size of the police force that are not determined by the evolution of crime, i.e. “exogenous” changes. For example, Levitt (1997) relies on the idea that political cycles lead to more police hires in pre-election periods and studies the evolution of crime in major US cities between 1970 and 1992. He finds that an increase of 10% in the number of police officers results in a 10% reduction in violent crime and a 3% drop in property crimes<sup>23</sup>. In another study, Evans and Owens (2007) take advantage of a program created in 1994 in the United States to subsidize local governments for hiring police officers, and find similar effects to those reported by Levitt (1997) both with regards to violent and property crimes<sup>24</sup>.

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22. The more traditional view considered the role of the police was to respond quickly to complaints and to enforce the law. The idea of making efforts to reduce the risk of victimization was not considered an essential task of the police (Kleiman, 2009).

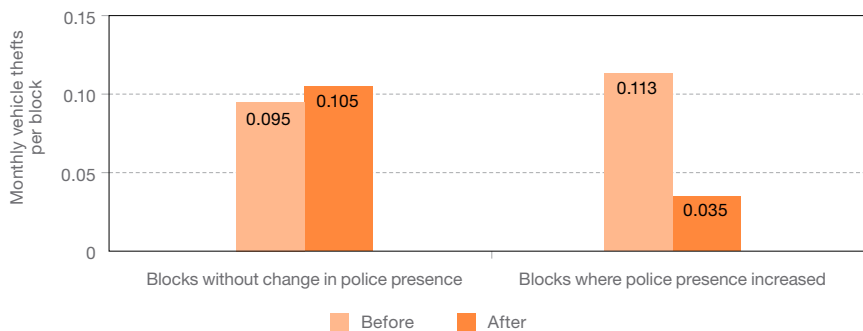
23. These results were disputed by McCrary (2002), who showed that if estimation errors were corrected, the results were no longer statistically significant. However, in a retort, Levitt (2002) uses an alternative way to find changes in the number of police officers that do not result from changes in crime (i.e., he predicts the evolution of the size of the police force as a function of the number of firefighters and municipal workers) and reaches similar results to those in his original work.

24. Reviews of these works can be found in Levitt and Miles (2007), Durlauf and Nagin (2010) and Entorf (2012), among others.

Other authors exploit certain unexpected events that create abrupt changes in the number of police officers. For example, Klick and Tabarrok (2005) exploit the fact that after the terrorist attacks of September 2001, a change in the U.S. terror alert system from yellow to orange significantly increased the number of police officers on the streets, and find that an increase of 10% in police presence reduces crime by about 3%. Draca, Machin, and Witt (2011) exploit the reassignment of officers from peripheral to central areas of London after the July 2005 attack, and find an almost identical effect on crime. Poutvaara and Priks (2009) analyze the case of the Sport Unit and Tactical Intelligence, part of the Stockholm police, which monitored the potentially violent fans of three ice hockey and football clubs. On two occasions, the officers of this unit were temporarily reassigned to other duties: first in 2001, after the attack on the twin towers; and later in December 2004, after the Asian tsunami. When the special police unit reduced the fan monitoring, violence at sporting events increased dramatically.

In the region, Di Tella and Schargrotsky (2004) conducted a study of the impact of police presence on crime in Argentina. In 1994, there was a terrorist attack on the main Jewish center in Buenos Aires. The following week, as a result of the attack, the national government decided to increase police presence in all the Muslims and Jewish buildings of Argentina, placing a police officer in front of each of these centers<sup>25</sup>. The authors exploit this increase in police presence to estimate the impact of police presence on crime, measured by the number of vehicle thefts. Chart 5.6 shows the average monthly vehicle thefts per block before and after the change in police presence, for both the blocks where protection was increased and those where it remained unchanged. Vehicle theft fell 75% in the blocks with increased police presence relative to the blocks without increased police presence, where it even increased slightly.

**Chart 5.6** Police presence and vehicle theft in Argentina (1994)



**Source:** Prepared by the author based on Di Tella and Schargrotsky (2004).

25. Muslim centers were protected to prevent potential retaliation after Hezbollah claimed responsibility for the attack.

**The evidence confirms that increased police presence is effective in reducing the levels of insecurity. But of course this does not mean that one should hire additional police officers until crime disappears completely.**

The evidence confirms that increased police presence is effective in reducing the levels of insecurity. But of course this does not mean that one should hire additional police officers until crime disappears completely. To design effective public policies, it is necessary to learn the magnitude of the effects of police presence on different types of crimes, and compare the benefits of crime reduction with the cost of hiring more police personnel. For example, in a study that sought to determine whether the size of the police forces in various cities of the United States was appropriate, Chalfin and McCrary (2013) suggest that increasing the number of police officers would be justified if it reduced the number of violent crimes (such as homicides, sexual offenses or violent robberies), but not if it only achieved to control minor offenses (such as theft of items of small value).

Di Tella and Schargrodsky (2004) ask themselves the same question. They conclude that the value of the losses spared to car owners thanks to the frustrated thefts does not make up for the salary cost of the additional police personnel. That is, hiring additional police officers would not be justified by its reduction in the number of vehicle thefts only. Of course, this conclusion could change if the potential benefits associated with the decrease in other crimes were considered.

## **THROUGH WHICH CHANNEL DOES POLICE PRESENCE REDUCE CRIME?**

If police presence helps reduce crime, is it because the higher probability of arrest makes it more risky to commit a crime, and therefore less attractive as an option? Or is it that the police reduce crime because they capture those who commit crimes?

Understanding the relative importance of these two channels—deterrence and incapacitation—is essential to define efficient public policies. If the police help control crime through prevention and deterrence, then to decide whether or not to hire additional police personnel one should compare the benefits derived from the avoided crimes with the budgetary efforts needed to hire more police officers. However, if the police contribute to crime control through the incapacitation of offenders, which also requires that offenders are prosecuted and convicted, then the benefits of crime reduction should make up for the budgetary resources consumed by the police, the prosecutors, the judicial systems, and the prisons.

The evidence suggests that the main mechanism at work is deterrence. Owens (2011), for example, shows that increased police presence led to a reduction in crime without increasing the number of arrests. Klick and Tabarrok (2005) and Poutvaara and Pricks (2009) also suggest that their results are due to deterrence. In the case of Argentina, Di Tella and Schargrodsky (2004) conclude that their results reflect the deterrent effect of police on crime, because the drop in the number of thefts was higher where there was extra police presence.

## **IS DETERRENCE EFFECTIVE IF CRIME IS DISPLACED?**

An increase in the number of police officers in a particular place or at a particular time could cause a displacement of crime to other places or times. If this



occurs, the effectiveness of the police presence would be reduced. What does the evidence say?

In their study on the impact of police presence on vehicle theft Di Tella and Schargrotsky (2004) do not find enough evidence of crime displacement. Draca, Machin and Witt (2011) arrive at the same conclusion in their study of the effect of increased police presence in the downtown areas of London after the terrorist attack of 2005.

However, González Navarro (2013) reached a different conclusion studying the effects of the introduction of Lojack radiofrequency devices in a particular brand of vehicles in four Mexican states. Since it was common knowledge that those vehicles in those states had the new device, the author studies whether vehicle theft shifted to vehicles of other brands in those states, or vehicles of any brand in other states<sup>26</sup>. He finds that the theft of the vehicles protected with the Lojack technology fell 48%, but that one fifth of that reduction was displaced to vehicles of the same brand in other states.

**The evidence suggests that the main mechanism at work is deterrence.**

## EFFECTIVE POLICE STRATEGIES

If increased police presence helps reduce crime, how can it be more effective?

The more traditional approach to policing is based on strategies that are applied in an entire jurisdiction, regardless of the crime level, the nature of the crimes, or how they are distributed throughout the space. Examples of such strategies include increasing the number of agents patrolling the entire community, providing a rapid and visible response wherever a crime takes place, improving criminal investigation, or increasing the number of arrests across the board (Weisburd and Eck, 2004).

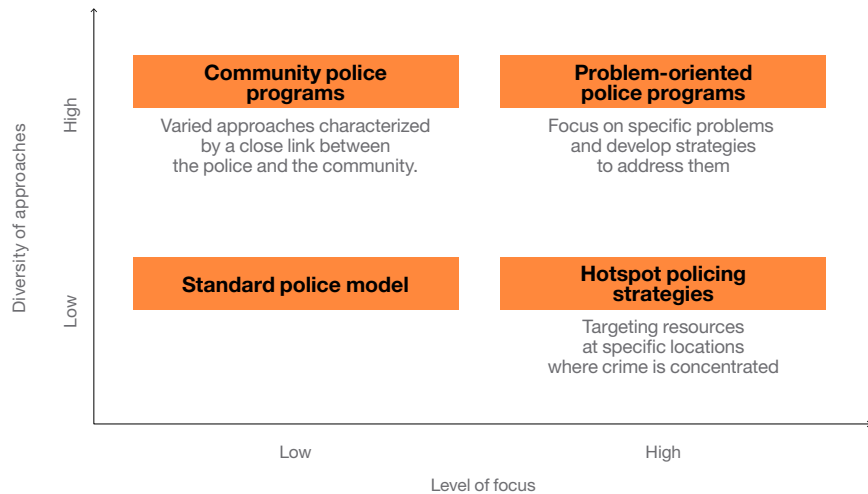
Over the past two decades there have been major innovations in relation to the effective use of police resources. Weisburd and Eck (2004) propose a classification of policing strategies in terms of two dimensions: “diversity of approaches” and “level of focus” (Figure 5.3, p. 186). While the traditional model is characterized by low focus and reduced diversity of approaches, other three kinds of alternative police intervention strategies are based on greater focus, greater diversity of approaches, or both at once. First, the strategies of hotspot policing are based on the targeting of resources (e.g., patrolling) in areas where the concentration of crime is unusually high. Second, the schemes of community policing seek closer ties between the police and the community. Finally, the schemes of problem-oriented policing are based on targeting a specific problem and developing a specific model of police intervention to solve it.

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26. Although the devices were hidden, the fact that only one brand of vehicles had them as a result of an agreement signed with Lojack implied that it was an “observable” protection mechanism to potential offenders.

The new police intervention strategies are based on greater focus, greater diversity of approaches, or both at once.

**Figure 5.3** Classification of police strategies



Source: Prepared by the author based on Weisburd and Eck (2004).

### STRATEGIES OF HOTSPOT POLICING<sup>27</sup>

Crimes are not distributed evenly across the space, but tend to be concentrated in specific areas, called “hotspots” (Sherman, Gartin and Buerger, 1989; Weisburd and Green, 1995). That is why many police interventions seek to deter crime by concentrating on those points.

Braga, Papachristos and Hureau (2012) reviewed 19 studies –17 from the U.S., one from Australia and one from Argentina—which taken together contain 25 evaluations of hotspot police interventions. According to 20 of the 25 evaluations, these interventions were successful in reducing the crime rate significantly. Moreover, this reduction was not achieved at the expense of an increase in crime in other areas but, on the contrary, crime also tended to decline in the hotspots’ adjacent areas, speaking for certain diffusion of benefits.

As noted in Chapter 3, so far there are few evaluations of such interventions in the region. An exception is the study of Kronick and Ortega (2014), who evaluate an intervention carried out by the police of the municipality of Sucre in Caracas, Venezuela. Relying on geo-referenced information of homicides in the city, the police identified 92 hotspots and selected half of them randomly to be targeted with increased patrol. In particular, they made four 15-minute stops per day in the targeted hotspots, while they continued with the usual routine in the remaining 46 segments. While the program is still in its implementation phase, preliminary results suggest that its implementation has helped improve the management and control of the local police.

27. This topic is developed further in Chapter 3.

The only available assessment outside the developed world is the aforementioned work by Di Tella and Schargrodsky (2004) for the case of Argentina. Although the places where police presence was increased were not theft hotspots, the intervention targeted specific places and managed to reduce the number of thefts significantly.

## COMMUNITY POLICING

This scheme has been the main policing innovation vis-à-vis the traditional model in recent decades. Although the strategies under this scheme vary (Eck and Rosenbaum, 1994; Weisburd and Eck, 2004)<sup>28</sup> the bottom line is that it is a proactive institution focused on solving the problems of the community and building a relationship of trust with the public that favors crime prevention and control (Prado, Trebilcock and Hartford, 2012).

Weisburd and Eck (2004) review experiences in developed countries and conclude that there is no clear or convincing evidence that community-policing schemes have an impact on crime, though it does appear to be effective in reducing the perception of insecurity and the fear of crime in the community.

A similar conclusion was reached by Frühling (2004), who examines the experiences of community policing in Villa Nueva (Guatemala), Bogota (Colombia), and São Paulo and Belo Horizonte (Brazil), and by IDB (2013), which studies the impact of the new Metropolitan Police of Buenos Aires (Argentina). Although there is no evidence of their impact on crime, these initiatives appear to increase the trust in the police, reduce the incidents of police violence, and temper the fear of crime.

A case where it was possible to identify a positive impact is the National Plan for Community Policing Quadrants, a community-policing program introduced in eight major cities of Colombia in 2010 and then extended to intermediate cities. The strategy was to divide the territory of each of the cities in small, well-defined, geographic areas, called “quadrants”. Each quadrant got assigned a fixed number of police officers (6 police officers divided into three shifts), who were made responsible for the evolution of crime in their assigned quadrants. The police officers had to identify the major problems of insecurity and define a strategy to confront them, working together with the community. García, Mejía and Ortega (2013) find that it succeeded in reducing the incidence of homicides, burglaries, and street fights significantly, especially in the areas that had the highest crime rates. One reason was the greater motivation of the police, who felt more attuned to the community situation<sup>29</sup>.

**Community policing is a proactive institution focused on solving the problems of the community and building a relationship of trust with the public that favors crime prevention and control.**

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28. Some of the police tactics included under the concept of community policing include meetings among community members, the formation of neighborhood guards, foot patrol, the provision of information on crime to the citizens, and police training to improve their relationship with the community.

29. To evaluate the program impacts credibly, the authors took advantage of the fact that the training of the 9,000 police officers that the program required was implemented gradually, dividing police stations into three groups and determining the order in which they received training randomly. This made the effective implementation gradual and not determined by the evolution of the crime, so it was possible to attribute changes in the crime rate to the start of the program.

**The problem-oriented policing is a methodology oriented to solve problems that consists in: identifying a problem, analyzing it, finding a solution and evaluating the results.**

## **PROBLEM-ORIENTED POLICING**

This model was originally proposed by Goldstein (1979) and developed later by Eck and Spelman (1987). More than a policing strategy, it is a process to define strategies for police action, with a methodology based on four stages generally known as SARA: Scanning (problem identification and prioritization) Analysis (problem assessment based on data analysis and definition of alternative actions), Response (development and implementation of interventions to solve the problem), and Assessment (monitoring and evaluation of the response) (Weisburd *et al.*, 2010).

The model is being adopted by police agencies worldwide. Reviewing impact studies in various U.S. cities, Weisburd *et al.* (2010) conclude that there is sufficient evidence on the effectiveness of this approach, although the magnitude of the effect is relatively modest.

In the region, an experience that could fall within this framework is the implementation of the Pacification Police Units (UPP in Portuguese) in Rio de Janeiro, to regain territorial control of the favelas in the hands of drug traffickers. For this, the authorities designed a plan consisting of: first, announcing the occupation of the favelas (aiming at the withdrawal of violent groups and thereby lowering the level of confrontation); and second, establishing a permanent police unit in the favela. From December 2008 to date, 34 UPP have been set up in the favelas of Rio de Janeiro.

Ferraz and Ottoni (2013) analyze the impact of this intervention on the levels of violence inside and outside the favelas. In the favelas, the intervention reduced violent crime (homicides and murders of police officers), but not non-violent crimes or property crimes<sup>30</sup>. As for effects outside the favelas, violent crime decreased, although less than in the favelas, and there was a reduction in thefts. Finally, property crimes increased in neighboring municipalities, suggesting some crime displacement.

All the aforementioned police strategies rely to a lesser or greater degree on new technologies, both in terms of the use of information and the use of new materials, devices, and equipment that facilitate their implementation and effectiveness. Box 5.2 documents these experiences.

### **Box 5.2 Technological innovations and strategies for police intervention**

Technological innovations have had an impact on the strategies to prevent and control crime. Byrne and Marx (2011) classify these innovations into two categories: hard technologies (i.e., material, appliances or equipment); and soft technologies, which consist of the strategic use of information. While individuals or institutions other than the police can use both types of in-

30. A possible explanation for the lack of impact on property crime is that the arrival of the UPPs to the favelas also increased crime reporting rates.

novations as crime prevention tools, they have become part of many police strategies of crime prevention and control (Table 1)<sup>1</sup>.

Hard technological innovations used by the police include police protection devices, new types of weapons, riot equipment, and advances in patrol vehicles. Among the soft technological innovations, crime mapping stands out<sup>2</sup>.

The evidence on the effectiveness of these innovations is limited, with the exception of some soft interventions such as hotspot policing, with positive results (Braga, Papachristos and Hureau, 2012), and problem-oriented policing, with positive albeit modest impacts (Weisburd *et al.*, 2010).

Despite the scarcity of sound and rigorous evidence on these technological innovations, there has been a widespread tendency to incorporate them in recent decades.

**Table 1 Technological innovations for the prevention and control of crime**

Hard technologies	Soft technologies
Police protection devices	Crime mapping (hotspots)
Armament	Crime pattern analysis
Riot equipment	Data base of criminal records
Computers, video equipment, and voice recognition systems for patrol cars	Lists of potentially violent delinquents
Mobile data centers	Technology for monitoring communications
Biometric identification or fingerprinting systems	Bullet localization devices

**Source:** Byrne and Marx (2011).

1. Only in the case of two types of technological innovations used to prevent crime that are not related to the criminal justice system is there evidence on their effectiveness: surveillance by Closed Circuit Television (CCTV) and street lighting (Welsh and Farrington, 2008).

2. One of the best-known data analysis systems is CompStat, created by the New York Police Department (NYPD) and replicated by police forces around the world. The Tactical System for Crime Analysis (STAD in Spanish) in Chile, the Program of Public Security Management Integration (IGESP in Portuguese) in the state of Minas Gerais, the Infocrim system in the state of São Paulo, the Unified System of Information on Violence and Crime (SUIVD in Spanish) in Bogota and the Board of Police Performance Assessment in Mexico City, stand out in the region.

## THE EFFECT OF THE PROSECUTORS

Most Latin American countries have implemented reforms in their criminal justice systems, replacing the inquisitorial system for the accusatorial system. What have been the results of these reforms? The introduction of oral proceedings sought to accelerate the processes, make them more transparent, reduce corruption, and increase the effectiveness of individual rights, goals that seem to have been reached (UNDP, 2013; Pásara, 2010). The regulation of the use of preventive detention during criminal proceedings aimed to increase basic rights and guarantees, which also has been achieved (Duce, Sources and Irrigation, 2009).

To the extent that the changes create more trust in and satisfaction with the institutions, there may be more incentives to report crimes, and this may lead to a higher

**Most Latin American countries have replaced the inquisitorial system for the accusatorial system. However, little is known about the effectiveness of the reforms to reduce crime.**

**A slow judicial system could have little deterrent effect if criminals perceive that slowness.**

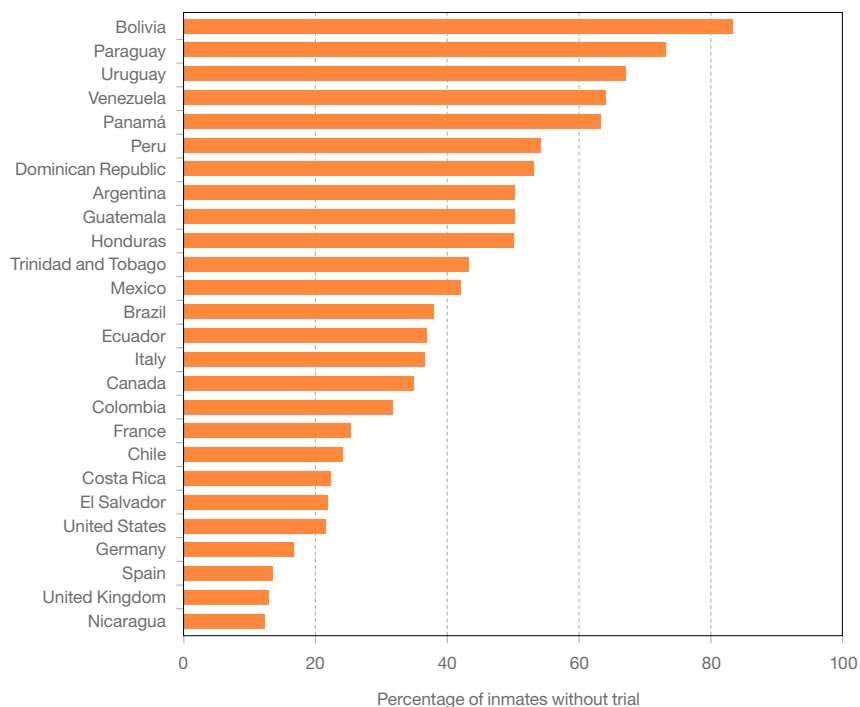
probability of arrest and punishment. Thus judicial reforms could favor a decrease in crime. However, little is known about the effectiveness of the reforms to reduce crime. In one of the few available studies, Blanco (2012) suggests that the reform of the criminal justice system in Mexico have decreased the probability of victimization but, at the same time, reduced the perception of security. Clearly, more rigorous research is needed to learn about the impact of the reforms.

## THE EFFECT OF THE COURTS

The probability of being convicted of a crime depends, among other things, on the speed of trials. A slow judicial system could have little deterrent effect if criminals perceive that slowness.

A measure of how quickly the courts resolve judicial proceedings is the percentage of inmates awaiting trial. In Latin America and the Caribbean this percentage is high (48% on average), exceeding 60% in Bolivia, Paraguay and Venezuela, while in developed countries it is a much lower 24% (Chart 5.7).

**Chart 5.7** Percentage of inmates awaiting trial in American and European countries (several years)<sup>a/</sup>



a/ Germany, 2013; Argentina, 2012; Bolivia, 2013; Brazil, 2012; Canada, 2011; Chile, 2013; Colombia, 2014; Costa Rica, 2012; Ecuador, 2012; El Salvador, 2014; Spain, 2014; United States, 2012; France, 2013; Guatemala, 2013; Honduras, 2013; Italy, 2014; Mexico, 2013; Nicaragua, 2012; Panama, 2013; Paraguay, 2012; Peru, 2013; United Kingdom, 2013; Dominican Republic, 2013; Trinidad and Tobago, 2013; Uruguay, 2013 and Venezuela, 2012.

**Source:** Prepared by the author base on ICPS (2014).

Dalla Pellegrina (2008) uses data from 1999 to 2002 in Italy to estimate the impact of delays in judicial proceedings on the propensity to commit property crimes, and finds that longer trials have a positive and significant effect on the incidence of such crimes. Similarly, Sviatschi and Soares (2013) estimates that a one-percentage-point increase in the rate of case resolution in the courts of Costa Rica reduces the number of crimes between 14% and 17%.

**Incarceration can help reduce crime through its power to incapacitate, deter, and rehabilitate offenders.**

## The institutions of the criminal justice system and the severity of punishment: Prisons and sentences

Incarceration can help reduce crime through its power to incapacitate, deter, and rehabilitate offenders. Available estimates for the United States, for example, suggest that doubling the prison population would reduce the number of serious crimes between 20% and 40% (Spelman, 2000). But through which channel does imprisonment reduce crime?

### THE INCAPACITATION EFFECT OF PRISONS

To estimate the number of crimes that are avoided by the fact that an offender is in jail, it is not enough to observe how the level of incarceration affects crime, because the incapacitation effect could be mixed up with the deterrent effect<sup>31</sup>. Some authors, however, have circumvented the difficulty to separate these two effects exploiting certain aspects of the criminal justice system or policies that allow for separate identification.

Owens (2009), for example, exploits a legal change in the criminal policy of Maryland, USA. Until 2001, any crimes committed as a minor were taken into account as criminal records in the trials of individuals up to 25 years old. As of 2001, however, these offenses were only considered for individuals up to 22 years old. With the change in the law, people between 23 and 25 who had committed crimes as minors started getting milder penalties than what they would have got before 2001, because their crimes as minors now were not considered. The sentences became between 9 and 18 months shorter, on average. Owens estimates the re-offense probability of these offenders during this period (in which, before the legal change, they would have remained in prison) and finds that these people were arrested 2.8 times per year, of which 1.5 times it was for serious crimes. These crimes would not have happened if these people had been in prison, and provide a measure of the incapacitation effect of prisons.

Barbarino and Mastrobuoni (2014), meanwhile, exploit sudden changes in the incarceration levels in Italy as a result of amnesty laws passed between 1962 and 1990 that benefitted inmates with two or three years of penalty ahead of them. The

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31. At the aggregate level, the incapacitation effect is defined as the number of crimes avoided by the fact that someone is in prison, net of the replacement effects. Replacement occurs if the crimes that are avoided due to the potential imprisonment of an offender are committed by another person who would not have otherwise committed such crimes (Bushway and Paternoster, 2009).

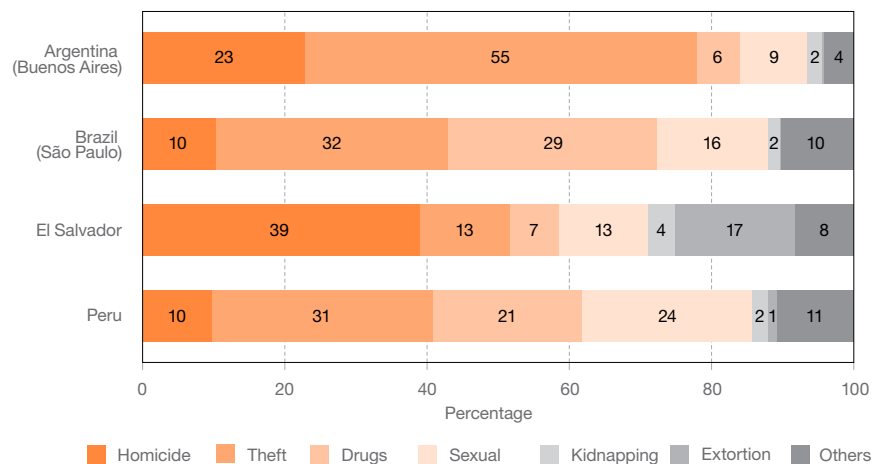
**The incapacitation effect is greater when those in prison are the most dangerous and active criminals**

authors find that a 10% reduction in the level of incarceration causes an increase in crime between 1.7% and 3%<sup>32</sup>.

The incapacitation effect is greater when those in prison are the most dangerous and active criminals (Bushway and Paternoster, 2009)<sup>33</sup>. That is why to study the incapacitation potential of the prisons in the region it is useful to analyze the profile of prisoners by type of crime, age, and re-offense patterns. Charts 5.8 to 5.10 and Table 5.1 show precisely this type of data for the prison population in Argentina, Brazil, El Salvador and Peru<sup>34</sup>.

Chart 5.8 shows the composition of the prison population by the type of crime for which each inmate was arrested. The two crimes on account of which most inmates are in prison in the province of Buenos Aires, Argentina, are theft (55%) and homicides (23%). In São Paulo, Brazil, the offense for which the greatest percentage of inmates was arrested is theft (32%), followed by drug possession (29%); those arrested for murder only represent 10% of all inmates. In the prisons in El Salvador, those arrested for murder prevail (39%) followed by those arrested for extortion (17%). And in the case of Peru, the offense for which the greatest percentage of inmates are in prison is theft (31%), followed by sexual offenses (24%).

**Chart 5.8** Inmates by type of crime in Latin American countries (2013)



**Source:** Prepared by the author based on UNDP (2013).

32. While these laws may also affect crime by reducing the deterrent effect of imprisonment (e.g., if the criminals expect similar laws to be passed again in the future), the authors estimate the incapacitation effect net of this other impact.

33. These ideas have led to selective incapacitation policies, which take into account the dangerousness and activity level of the criminals in sentencing and parole decisions.

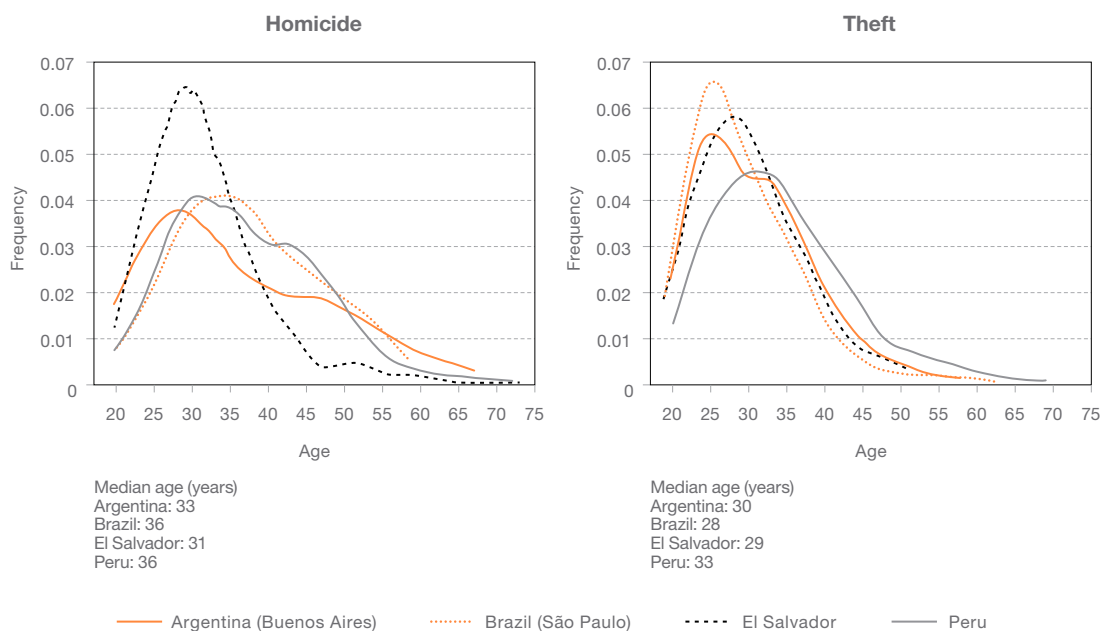
34. Data were collected under the Comparative Study of Prison Population, prepared by consultant team of the Citizen Security Report prepared by UNDP in 2013. In the case of Argentina, the survey was conducted in prisons of the province of Buenos Aires, which have people convicted of common offenses and offenses related to drug consumption and drug dealing, and which account for about 40% of the prison population nationwide. In the case of Brazil, the survey was conducted in prisons in São Paulo. In the cases of El Salvador and Peru, the samples are representative of the prison population nationwide.



Chart 5.9 shows the distribution of prisoners by age and the median age of those arrested for murder and robbery. The distribution of those arrested for homicide is similar in Peru and Brazil, and is somewhat shifted to the left in Argentina and El Salvador, indicating that those arrested for homicide are younger in these countries. In Peru and Brazil, half of those arrested for homicide are 37 and 36 years or older, respectively, while in Argentina and El Salvador they are younger than 33 and 31 years, respectively.

The distribution of those arrested for robbery is relatively similar in the four countries. Peru has the prison population arrested for theft of the highest age (33 or older), followed by Argentina (30), El Salvador (29) and Brazil (28).

**Chart 5.9** Distribution of prisoners by age and type of crime in Latin American countries (2013)



Source: Prepared by the author based on UNDP (2013).

Chart 5.10 (see p. 194) shows the percentage of prisoners with criminal activity in the 6 months prior to their arrest and the proportion of reoffenders. Prisons in Argentina and Brazil have a high percentage of prisoners who were involved in criminal activities within six months before detention (38% and 33%, respectively) while in Peru and El Salvador that percentage is much lower (18% and 9%, respectively). Regarding re-offense rates, Brazil has the largest proportion of reoffenders in its prisons (49%), closely followed by Argentina (42%), while in Peru and El Salvador that proportion is again much lower (16% and 11%, respectively).

**Chart 5.10** Criminal activity prior to arrest and re-offense rates among prisoners in Latin American countries (2013)



Source: Prepared by the author based on UNDP (2013).

Finally, Table 5.1 shows more detailed information about the prior criminal activity of those arrested for property crimes, specifically whether they committed crimes during the six months prior to their arrest, which type of crime they committed, and how many times. In Argentina, while half of those arrested for theft claim not to have committed any other theft in the six months prior to their arrest, the other half admits having committed at least one crime. The average number of thefts committed by the latter group is 17.4. This means that, if the average prisoner arrested for theft had continued stealing at the same rate as he did during the six months prior to his arrest, his imprisonment implies an incapacitation effect of 9 thefts per semester or 18 thefts per year<sup>35</sup>. The same exercise indicates an incapacitation effect of 12 thefts per year in Brazil, one in El Salvador, and 13 in Peru.

**Table 5.1** Intensity of prior criminal activity of prisoners for theft in Latin American countries (2013)

Indicators	Argentina (Buenos Aires)	Brazil (São Paulo)	El Salvador	Peru
Inmate arrested for theft (percentage) (a)	55.0	32.5	12.7	31.2
Arrested for theft that committed a theft in the six months prior to his/her arrest (percentage) (b)	50.6	30.0	10.6	29.4
Number of theft per inmate in the previous six months, conditional on having committed at least one crime (c)	17.4	20.2	5.9	22.4
Number of thefts per year for every prisoner for theft ( $d=b/100*c^2$ )	17.6	12.1	1.3	13.1

Source: Prepared by the author based on UNDP (2013).

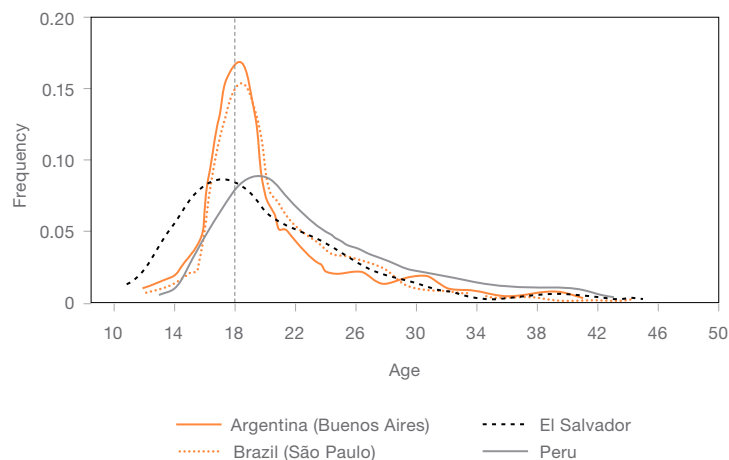
35. This method of estimating the incapacitation effect based on the information reported by the prisoners about the crimes committed before their arrest was first used by Spelman (1994) with U.S. data. The key assumption is that if the person had not been arrested and imprisoned, he would have continued committing crimes at the same rate as he did before the arrest.

Another way to estimate the incapacitation effect is to analyze the re-offense rates among those inmates who committed their first offense around the age of majority. This approach exploits the fact that, if an individual commits a crime just before the legal age of majority, he will be tried in a juvenile court and receive a milder penalty than another individual who commits the same crime as an adult and is tried in a common criminal court. If the first individual takes a shorter time to reoffend than the second one, this time difference could be attributed to the fact that he has been less time in prison and, therefore, provide a measure of the incapacitation effect.

Guarín, Medina and Tamayo (2013) use this methodology to estimate the incapacitation effect in Colombia. In particular, they compare the time from arrest to re-offense among those who committed a crime just before, and just after, turning 18 (the legal age of majority in Colombia). They find that those who committed a crime just after turning 18 take over 300 days longer to reoffend, an effect that can be attributed to incapacitation.

Brassiolo (2014) performs a similar exercise using data from surveys of inmates in Argentina, Brazil, El Salvador, and Peru. He exploits the fact that a critical mass of reoffenders committed their first offense around the age of 18 (the legal age of majority), especially in Argentina and Brazil (Chart 5.11). This allows him to compare the time to re-offense among those who committed a crime when they were 18 and those who committed the same offense when they were still 17. Taking the four countries together, those who are tried as adults reoffend, on average 2.2 years later than those who are tried in youth courts. The difference is 2.6 years in Brazil and 2.2 years in El Salvador, but there is no statistically significant difference in Argentina or Peru (Chart 5.12, p. 196).

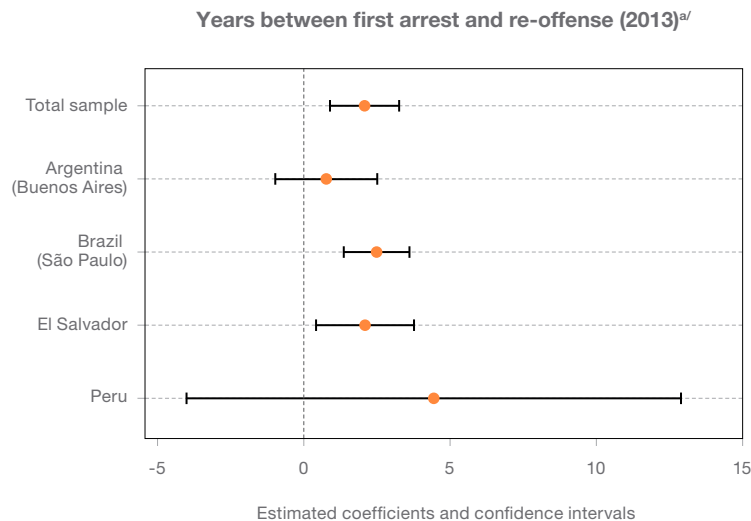
**Chart 5.11** Age at the time of committing the first offense (2013)



Source: Prepared by the author based on UNDP (2013).

Increasing the severity of punishment by way of longer sentences or some other measure implying higher incarceration levels could reduce crime by incapacitating criminals and deter criminal behavior.

**Chart 5.12** Incapacitation effect on crime in Latin American countries



a/ The graph reports the coefficients and 90% confidence intervals, estimated by ordinary least squares (OLS), where the dependent variable is the number of years between the time when the individual was arrested for the first time and the time of the next arrest. The omitted category is a male inmate who committed his first crime at age 17 and that crime was a homicide. The sample includes inmates of any age who committed their first crime at 17 or 18 years old.

Source: Brassiolo (2014).

## THE DETERRENCE OF SENTENCES

Increasing the severity of punishment by way of longer sentences or some other measure implying higher incarceration levels could not only reduce crime by incapacitating criminals, but also deter criminal behavior.

Kessler and Levitt (1999) separate the deterrence and incapacitation channels empirically by exploiting a legal change introduced in California in 1982, known as Proposition 8, which increased the length of sentences for reoffenders. They argue that, both before and after Proposition 8, reoffenders were sentenced to imprisonment, but after Proposition 8, sentences grew longer. Since in the short-term the incapacitation effect could be assumed to be unchanged (reoffenders were going to prison anyway) any decline in the incidence of crime could be attributed to the deterrent effect of the higher sentences imposed by Proposition 8. Indeed, they find a crime reduction of about 4% in the year after the reform<sup>36</sup>.

Similarly, Drago, Galbiati and Vertova (2009) exploit the adoption of a piece of legislation in Italy in 2006, which pardoned all prisoners with sentences of less

36. Some studies such as Webster, Doob, and Zimring (2006) and Raphael (2006) have criticized these results and argue that they cannot be taken as definitive evidence, so that there is still no consensus on the importance and magnitude of the deterrent effect of incarceration.

than three years and caused the sudden release of nearly 40% of the prison population. The law stated that if the released inmates reoffended within five years, the new sentence would include the part of the previous sentence that was pending, i.e., between 1 and 36 months. The authors find that, for each additional month of pending sentence, the probability that the released prisoners committed a crime declined 1.24%, which they interpret as the deterrent effect of incarceration.

An alternative way to study the deterrent effect of sentences is observing the propensity to commit crimes around the age of majority. Because sentences are generally more severe for adults, if more severe sentences deter criminal behavior, the propensity to commit crimes should fall when adulthood is reached. Several studies in developed countries exploit this idea, but the evidence is inconclusive: while some find that the longer sentences have no significant deterrent effect (Lee and McCrary, 2009), others conclude the opposite (Levitt, 1998; Hjalmarsson, 2009; Entorf 2012).

Do prisons have a deterrent effect in Latin America? Is it possible to prevent crime by increasing the severity of sentences? In the case of Colombia, Guarín Medina and Tamayo (2013) analyze the change in the probability of offending around the age of legal majority and find no deterrent effect on total crime, violent crime, or property crimes; they only find a significant effect in the case of drug trafficking and drug abuse.

In general, the deterrent effect of increasing the length of sentences is relatively modest. This could be due to an apparent dichotomy between the perceived and the actual severity of the punishment. For the severity of punishment to deter criminal behavior it is key that the severity of the sentences is perceived by the criminals. Some studies suggest that the limited deterrence of sentences is due to the weakness of this link in practice (Kleck *et al.*, 2005; Lochner, 2007).

## **CHANGES IN THE AGE OF CRIMINAL RESPONSIBILITY, DETERRENCE, AND HUMAN CAPITAL**

The increase in juvenile crime in many countries has led to social demands to reduce the age of criminal responsibility, under the assumption that such measures would deter criminal behavior. But the imprisonment of teenagers can have unintended consequences for society. In particular, it can adversely affect the development of their human capital, undermining their chances of employment and increasing their likelihood of involvement in criminal activities down the road. What does the evidence say?

Aizer and Doyle (2013) analyze the effect of youth incarceration on human capital accumulation and patterns of future re-offense. In Chicago, when a case enters the juvenile justice system it is assigned to the judge who is in office at that time. Thus, the judge hearing each case is determined randomly. Since some judges are more likely to send the defendants to prison, while others prefer alternative penalties, the authors exploit this “exogenous” variation in the probability of in-

**In general, the deterrent effect of increasing the length of sentences is relatively modest. This could be due to an apparent dichotomy between the perceived and the actual severity of the punishment.**

**There is no consensus about the effectiveness of increasing the severity of punishment as a mechanism to control juvenile delinquency.**

carceration to estimate its effects. They find that the passage through prison reduces the likelihood of finishing high school and increases the probability of re-offense in adulthood. This, plus the limited deterrent effect of sentences, suggests that alternative measures to imprisonment may be more appropriate to deal with juvenile delinquency.

Ibanez, Rodriguez and Zarruk (2013) explore the effect of just such mechanisms on the propensity to commit crimes and the decision to accumulate human capital among young people. They exploit the introduction of a new Criminal Responsibility System for Adolescents (SRPA in Spanish) in Colombia in 2006. The reform introduced a restorative justice system, focusing on resolving conflicts rather than punishing offenders. It encouraged the use of rehabilitation procedures such as warnings, imposition of rules of conduct, community service, and probation, leaving imprisonment as a last resort. Finally, it raised the age of criminal responsibility from 12 to 14 and reduced the severity of punishments for those under 18. In other words, the reform reduced the cost of committing crimes for minors. The authors find that adolescent participation in criminal activities increased as a result of the reform and the school enrollment rate of children under 14 years old declined.

Should the severity of punishment for young people be then increased, for example by reducing the age of criminal responsibility? The answer is not clear. The Colombian experience indicates that more severe sentences could help keep juvenile delinquency under control and even retain kids in school. However, the evidence shown by Aizer and Doyle (2013) suggests that increasing the severity of punishment for young people could be counterproductive, not only because incarceration disrupts their education and thereby limits their future job prospects, but also because it puts them in contact with adult criminals, thus increasing their likelihood of reoffending in the future.

## **REHABILITATION CENTERS OR CRIMINOGENIC ENVIRONMENTS?**

One purpose of incarceration is to reform those who have committed a crime to facilitate their reintegration into society and reduce their risk of re-offending. Prisons offer rehabilitation programs including recreational, religious, educational, labor, skill-building, and freedom-preparation activities, as well as programs for inmates with special problems such as mental illness and addictions<sup>37</sup>. But the effectiveness of these programs is limited not only for budgetary reasons, but also because of the poor living conditions in prisons.

Table 5.2 shows information on the living conditions, the levels of insecurity, and the availability of reintegration-oriented programs, in the prisons of Argentina,

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37. Few studies have assessed empirically the effectiveness of prison rehabilitation programs in the region. An exception is the work of Alzúa, Rodríguez and Villa (2009), who show that participating in educational programs improves inmate behavior and reduces their participation in conflicts within the prison. To the extent that this lower propensity to violence remains after release, such programs could reduce the risk of re-offense.

Brazil, El Salvador, and Peru. The situation is at least precarious in all these dimensions.

Taking the four countries together, there are two inmates per sleeping slot, only three out of ten inmates believe the amount of food they receive is enough, and only six in ten say they receive medical care if needed. Security conditions are also poor: 64% of prisoners report feeling less safe than before entering the prison, 35% have been victims of theft, and 10% have been beaten at least once in the past 6 months. In terms of participation in recreational and rehabilitation programs, only 32% say they have participated in sports during the past month, only 25% say they have participated in educational activities, and only 28% report working.

**The effectiveness of the rehabilitation programs is limited not only for budgetary reasons, but also because of the poor living conditions in prisons.**

**Table 5.2** Living conditions, security, and reintegration programs in Latin American prisons (2013)

Indicators	Argentina (Buenos Aires)	Brazil (São Paulo)	El Salvador	Peru	Total sample
<b>Living conditions</b>					
Number of people per available place to sleep	1.1	2.1	2.0	2.0	1.9
Considers that the amount of food is enough (percentage)	21.8	36.1	14.9	45.3	30.5
Receives medical attention if ill (percentage)	47.8	41.3	51.1	82.2	59.0
<b>Security and perception of security</b>					
Feels less safe than before entering prison (percentage)	71.0	71.6	43.9	75.4	63.8
Was the victim of a theft (percentage)	33.0	28.6	28.0	46.2	34.9
Was beaten in the past six months (percentage)	19.7	4.7	3.5	15.1	9.9
<b>Participation in programs</b>					
Participated in athletic activities in the past month (percentage)	35.1	23.0	31.7	37.3	32.2
Participated in educational activities in the past month (percentage)	27.4	9.5	30.9	27.9	25.0
Works (percentage)	27.0	23.4	23.1	35.6	27.9

**Source:** Prepared by the author based on UNDP (2013).

**The poor living conditions in prisons favor the idea that they are environments that may aggravate criminal conduct, promoting the development of crime-related skills and networks.**

The living conditions in some prisons in the region speak for even more pronounced deterioration. Many prisons are places of abuse and violence, where it is the very inmates who are in charge, and where prison personnel only enter in groups and heavily armed (Coyle, 2004; Azaola and Bergman, 2007).

The poor living conditions in prisons have not only generated skepticism about their potential to reform prisoners, but favor the idea that they are environments that may aggravate criminal conduct<sup>38</sup>. This may occur through at least two channels. One is that incarceration promotes the development of crime-related skills and networks (Bayer, Hjalmarsson and Pozen, 2009; Ouss, 2011)<sup>39</sup>. The other effect is the stigma of incarceration (Kling, Weiman, and Western, 2001; Kling, 2006).

The first channel means that prisons are “schools of crime” where the interaction among offenders with different types or levels of criminal skills has a positive effect on future criminal behavior. Bayer, Hjalmarsson and Pozen (2009) study how living in a prison with other inmates affects the criminal behavior of the youth in Florida once they have been released. They show that the interaction with other offenders in prison tends to increase their re-offense probability, but only if the inmates are exposed to other inmates who have committed the same types of crime in the past. In contrast, no effects were observed in the re-offense probability of inmates who interacted with other inmates who had committed different types of crimes. The authors suggest that exposure to inmates with similar criminal histories could help them strengthen their own crime-related skills or build networks to commit crimes in the future. Similarly, Ouss (2011) shows that the increase in the re-offense probability of released prisoners in France is due to the acquisition of criminal skills from interaction with their cellmates. These results have important policy-implications regarding how prisoners are distributed across and within prisons.

The second channel is based on the idea that incarceration produces a stigma effect that reduces the probability of future reemployment, making re-offense more likely. Data from prisoner surveys are consistent with this hypothesis. Detainees who had already served a term in jail at least once are less likely to have been working on the pre-arrest period than those without prior criminal records (Chart 5.13).

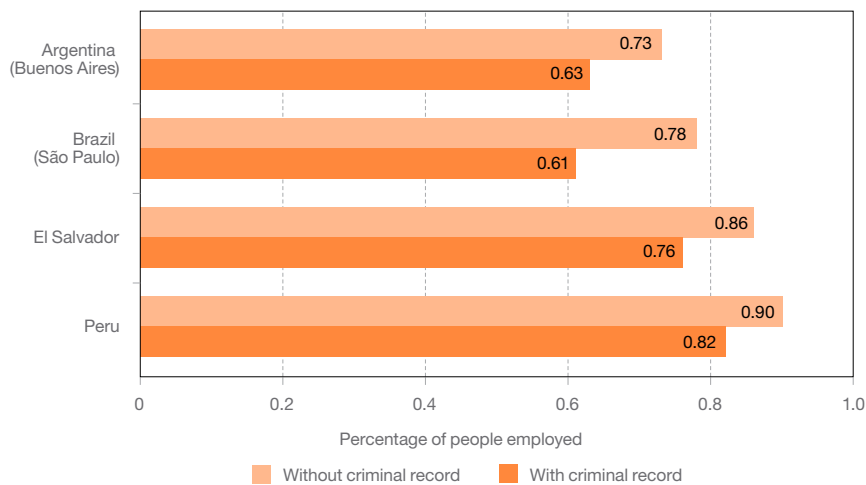
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38. Prisons may even be places from which crimes are planned, as in the landmark case of *Primeiro Comando da Capital*, emerged from the first prisons of the Brazilian state of São Paulo.

39. A related mechanism is the potential depreciation of the human capital unrelated to crime during incarceration, which may deteriorate future reemployment opportunities (Kling, Weiman, and Western, 2001; Lochner, 2004).



**Chart 5.13** Percentage of people employed in month before the arrest in Latin American countries (2013)



Source: Prepared by the author based on UNDP (2013).

Empirical studies suggest that re-offense rates among individuals who have been incarcerated are higher than for those who have been subject to alternative custody arrangements.

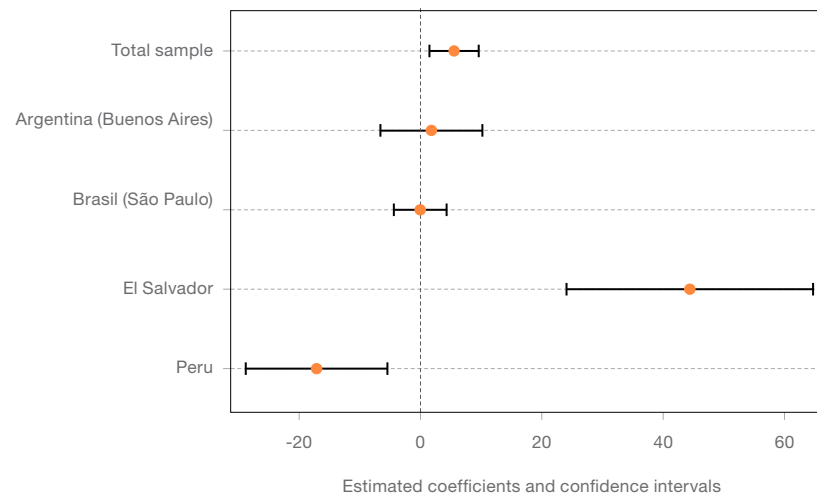
Another way to examine whether prisons are a criminogenic environment is to compare re-offense rates among individuals who have been incarcerated and individuals who have been subject to alternative custody arrangements, such as electronic monitoring, community work and freedom treatment. Killias, Villettaz and Zoder (2006) review 23 studies including 27 comparisons of this type. In 13 of the 27 comparisons, there were significant differences between the re-offense rates of both groups. In 11 of these 13 comparisons, the results suggest that alternative mechanisms to prison favor lower re-offense rates.

In the region, Di Tella and Schargrodsy (2013) analyze this issue for the case of Argentina and demonstrate that less drastic alternatives to imprisonment, such as electronic monitoring through a bracelet, help reduce re-offense rates. They compare the re-offense probability of those released from jails with that of those with similar characteristics in terms of age, sex and crime, but who served their sentence with electronic monitoring bracelets. They exploit the fact that the distribution between the two alternatives is determined “exogenously” by the random assignment of cases to judges with opposing ideological preferences. They find the re-offense rate to be between 11 and 16 percentage points lower among those who were monitored electronically than among those who served their prison term. In addition, this alternative mechanism generates significant tax savings.

Another way to estimate the criminogenic effect of prisons is based on the fact that, while the offenders under the age of majority are sent to correctional institutions for minors, the offenders above the age of majority are placed in regular prisons, where they are exposed to adult criminals. If exposure to adult criminals boosts criminal behavior, the youth who passed through common prisons should

commit more serious crimes (if they reoffend) than the youth sent to correctional institutions. The difference in the severity of the offenses with which each group reoffends provides a measure of the criminogenic effect of incarceration.

**Chart 5.14** Exposure to adult criminals and severity of re-offense (measured in years of sentence) (2013)<sup>a/</sup>



a/ The graph reports the coefficients and 90% confidence intervals, estimated by ordinary least squares (OLS), where the dependent variable is the duration (in years) of the sentence received for the actual crime. The omitted category is a male inmate that committed his first crime at age 17 and that crime was a homicide. The sample includes inmates of any age who committed their first crime at 17 or 18 years old.

**Source:** Brassiolo (2014).

Chart 5.14 shows the results of this comparison in Argentina, Brazil, El Salvador, and Peru, as well as in the 4 countries taken together. It compares the severity of re-offense crimes, measured by the length of their corresponding sentences, among re-offenders who were similar in everything but the age at which they committed their first offense (17 versus 18) and, therefore, the type of institution where they served their sentence. The results are inconclusive. The positive effect of incarceration on the severity of re-offense crimes in the 4 countries taken together is explained by the results of El Salvador. Country results suggest that prisons are criminogenic environments in El Salvador but favor rehabilitation in Peru, and have no significant effect on Argentina and Brazil.

## Conclusions

The public officials in charge of crime policy must decide how many resources to allocate to crime control, and how to distribute these resources among the various

components of the criminal justice system: the police, the prosecution, the courts, and the prisons. They must also decide how these resources are used in each of these institutions.

Crime policy has an effect on crime by incapacitating those who break the law through imprisonment and by deterring criminal behavior. For policy to be effective crime control must contain a significant deterrence component. For this to be the case, not only is it important that the expected punishment for committing a crime be high, but also that it is actually perceived as high by potential offenders. In the words of Kleiman (2009), it is not enough for crime not to pay off; it must not even seem to pay off.

A prerequisite for crime not to pay off is to recognize that the institutions that make up the criminal justice system are closely interconnected and to ensure the functioning of each. If any of the links in the chain weakens, the deterrence of criminal policy will be diminished.

The evidence confirms that increasing the size of the police force is an effective strategy to improve citizen security. This is due to the police's potential to prevent and deter criminal behavior, rather than to a greater number of arrests. Deterrence from increased police presence is effective because most crimes are not displaced geographically or in time. This does not imply that police presence should be increased until crime is completely gone. More police presence requires more resources, so that it is justified only if its crime-reduction benefits outweigh the costs.

But the effectiveness of the police to prevent and control crime also depends on the strategy they use. Hotspots strategies have proven effective in reducing the crime rate. So have problem-oriented police schemes, though in this case the results seem to be modest. Community policing schemes, however, seem less effective in reducing crime levels, although they improve the relationship between the police and the citizens and reduce the perception of insecurity.

The deterrence of the police depends to some extent on the effectiveness of prosecutors and judges. The probability of punishment depends not only on the probability of arrest, but also on the probability of being prosecuted and convicted. The role of the prosecution in the criminal justice process is key, particularly after the reforms of the prosecution systems in the region. The efficiency of the judiciary also affects the incentives to engage in criminal acts directly, making it imperative to increase its efficiency and speed.

Increased insecurity and increased demands for greater repression and control have led to a significant increase in the levels of incarceration in most countries of the region. This increase, coupled with budgetary constraints to expanding prison infrastructure has led to alarming levels of overcrowding. Not only does this deteriorate the living conditions in prisons, but it also limits the potential of these institutions to reform offenders and even favors the creation of environments that increase the risk of re-offense in the future. Building more and better prisons is a need that goes beyond crime-fighting policy.

Add to this the fact that the potential of imprisonment as a deterrent mechanism appears to be quite modest, alternative sentences, such as electronic monitoring without imprisonment, emerge as effective options, particularly for offenders whose re-offense risk is lower, since they would prevent them from entering into contact with more dangerous criminals while generating important tax savings.

Finally, to design better crime control policies it is essential to improve the availability and quality of reliable statistics, encompassing all aspects of the crime phenomenon. This is essential to develop rigorous evaluations to increase and improve the knowledge on the effectiveness of public interventions in citizen security.





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# ELECTORAL INCENTIVES, STATE CAPACITY AND LEGITIMACY

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## Chapter 6





## Chapter 6

# ELECTORAL INCENTIVES, STATE CAPACITY AND LEGITIMACY<sup>1</sup>

*“Politics is the art of the possible, the attainable, the art of the second best”.*  
Otto von Bismarck.

## Introduction

The political and institutional context is critical for implementing policies on citizen security. Politicians may not have incentives to prioritize security policies; bureaucracies may not have the capacity to implement them; or, if the State fails to provide security, citizens may lose trust in the institutions.

This chapter explores the interaction between the political authority, the public bureaucracy responsible for providing security services, and the citizenry. The first part examines the incentives of the political authority to devote resources and effort to the provision of citizen security. Under what circumstances is it more likely for the political authority to want to address the problem of insecurity straightforwardly? When do high levels of crime turn politically costly? It is not enough for insecurity to be important to the electorate; it is also important that the electorate assigns the responsibility for the phenomenon to the political authority.

The second part addresses the capacity of the State to provide security, i.e. to what extent does a decision to fight insecurity effectively become action? For example, the Executive may decide to increase police presence in high-crime areas, but find that such a decision cannot be implemented due to lack of personnel, equipment, or even information on the geographic location of crime.

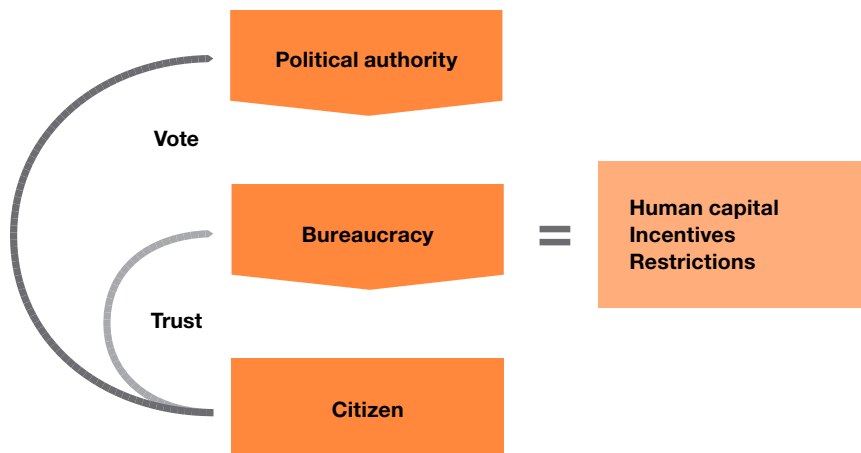
The third part tackles the relationship between the citizen and the State as the guarantor of citizen security: Do Latin American citizens trust in the State? What if not? If the State fails to provide security, or does so very unequally, citizens lose trust in the criminal justice system and may neglect their role as overseers of public policy, fail to report crimes, and take actions such as hiring private security guards or cut down on the times and places in which they socialize. These actions imply restrictions on individual freedom while limiting the State’s ability to provide good security services.

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1. Daniel Ortega wrote this chapter, with research assistance from Eduardo Fagre and Mauricio Stern.

Insecurity has an influence on government action mainly when it is perceived to have electoral or political implications.

**Figure 6.1** The bureaucracy and public policy



Source: Prepared by the author.

Figure 6.1 summarizes the interaction between these three actors. The political authority delivers public services to citizens through a bureaucracy that combines resources to produce them, and does so in a more or less effective way depending on the human resources it employs, and the incentives and constraints it faces. Meanwhile, citizens have a direct interaction with both the elected authority (through voting) and the bureaucracy. This latter relationship does not occur through voting but is rather reflected in citizens' trust in the State and its institutions.

## The political authority and its incentives to fight insecurity

How do social and economic circumstances affect the willingness of the authorities to devote effort and resources to a particular problem, such as citizen security? Insecurity has an influence on government action mainly when it is perceived to have electoral or political implications.

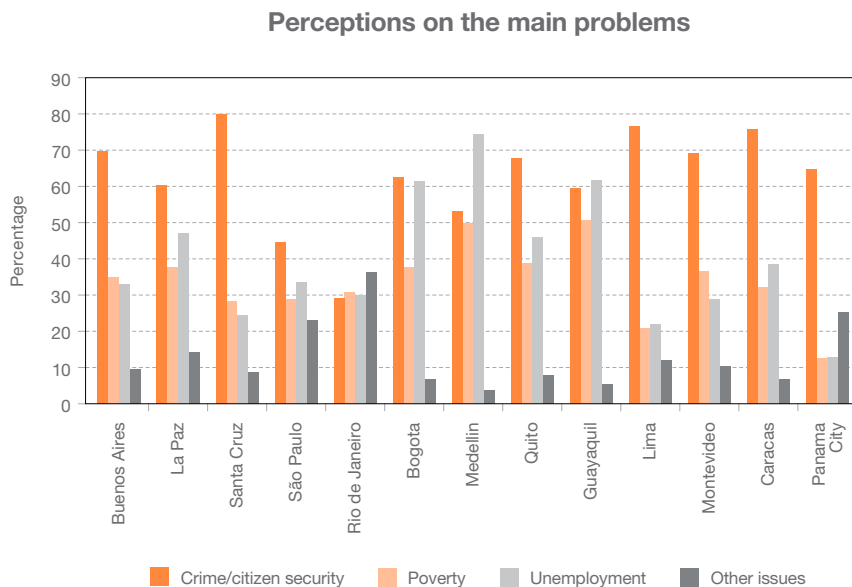
The relationship between insecurity and electoral outcomes depends on two factors: first, the importance of insecurity for the public; second, the extent to which the public attributes prevailing levels of insecurity to the negligence or fault of the authorities. Both factors will determine the pressure citizens will exert on the political authorities, be it through voting or other mechanisms.

How much does the public care about insecurity? In general, people attach greater importance to insecurity when insecurity gets objectively worse, be-

cause they perceive the greater likelihood of being victimized (Maris and Ortega, 2013). In Latin America, in particular, it tops the list of public concerns, and has been gaining ground among them in recent years. According to Latino-barómetro (2012), the percentage of the population that believes that insecurity is the most important problem in their country increased from about 5% in the mid-nineties to more than one third in 2011 (see Chart 1.3, chapter 1). And according to the CAF 2013 survey, it tops the list of problems deemed most important in almost all the cities included in the survey. Except for Rio de Janeiro, Medellín and Guayaquil, insecurity is among the top-three concerns in all these cities (Chart 6.1).

**Insecurity tops the list of public concerns in almost all the cities.**

**Chart 6.1** What are the three most important problems for Latin Americans?

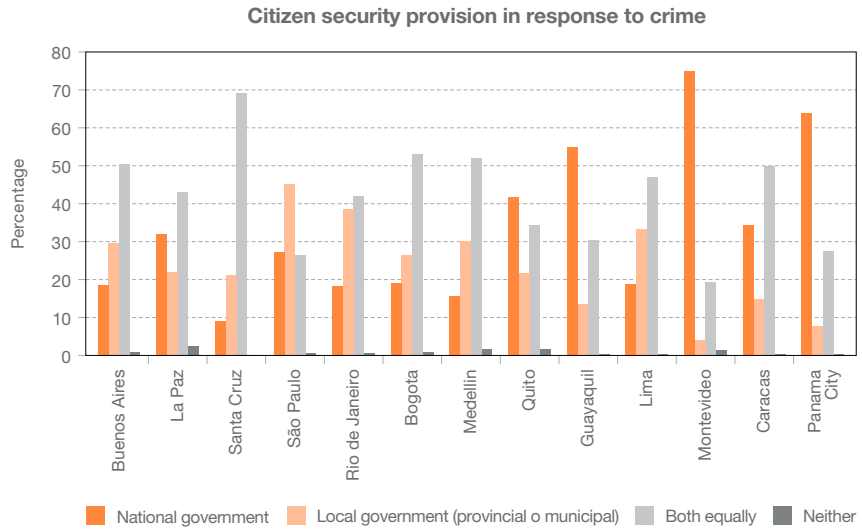


Source: CAF (2013).

To what extent does the public attribute the problem of insecurity to certain authorities? Chart 6.2 (a) shows the percentage of the population that attributes the responsibility for citizen security to the national government, the local government, and both of them; Chart 6.2 (b) shows the same percentages for the public services of street sweeping and lighting. Chart 6.2 (a) provides evidence that people assign responsibility for citizen security both to the local and national authorities, while Chart 6.2 (b) indicates that people assign the responsibility for street sweeping and lighting just to the local government. This means that, from the perspective of the citizen, the responsibility for citizen security is not concentrated on a particular level of government.

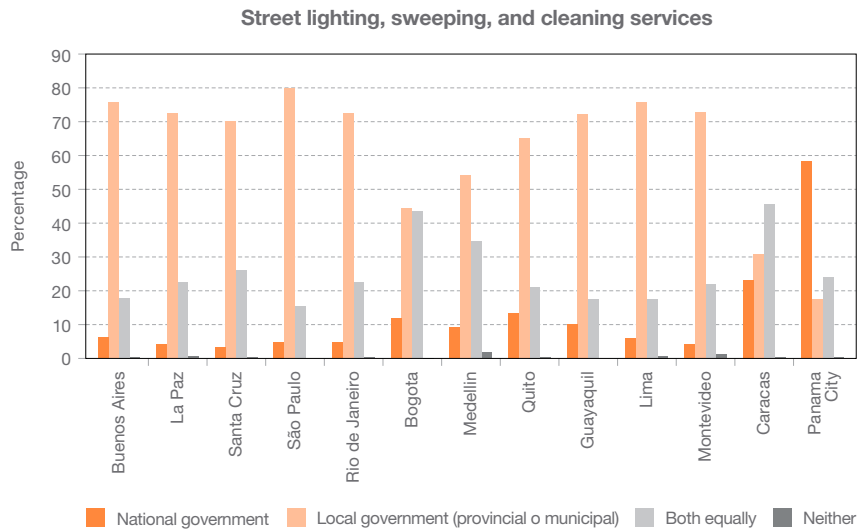
From the perspective of the citizen, the responsibility for citizen security is not concentrated on a particular level of government.

**Chart 6.2(a)** What level of government is responsible? Perceptions in Latin American cities



Source: CAF (2013).

**Chart 6.2(b)** What level of government is responsible? Perceptions in Latin American cities

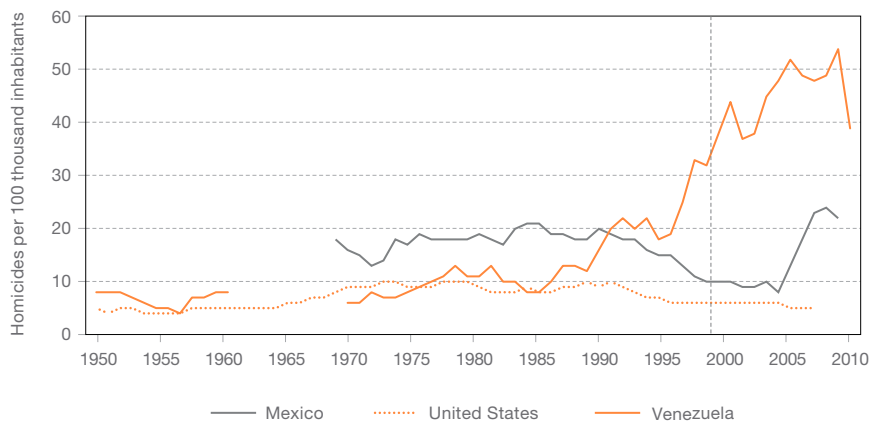


Source: CAF (2013).

Although the relationship between insecurity and electoral outcomes has not been thoroughly investigated, some studies suggest they are closely related. Cummins (2009) for example, find a negative correlation between the crime rate and the probability of re-election of governors in the United States; and Magaloni, Diaz Cayeros and Romero (2013) suggest that the crime rate is negatively correlated with the public approval of the president's administration in Mexico. However, these studies fail to establish credibly to what extent electoral outcomes are due solely to crime.

In contrast, in a study commissioned in the context of this report, Kronick (2014 a) exploits certain characteristics of Venezuelan data (electoral data disaggregated by polling center and geo-referenced crime data that can be associated to each polling center) to investigate the causal relationship between crime and electoral outcomes. Increased insecurity (comparatively very important, see Chart 6.3) and the associated importance that the public attaches to it make Venezuela a particularly good case to study the electoral consequences of crime.

**Chart 6.3** Homicide rate per 100 thousand inhabitants in Venezuela, Mexico, and the United States (1950-2010)

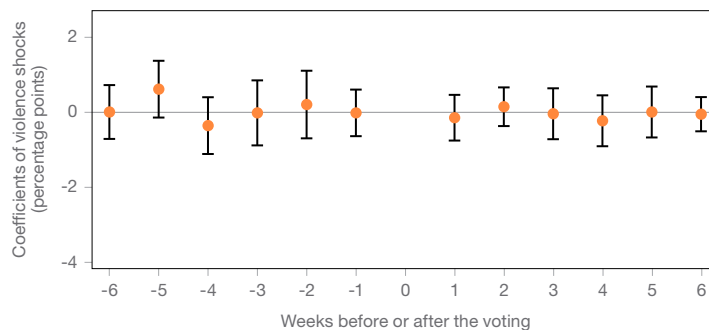


Source: Kronick (2014a).

First, Kronick (2014 a) studies the relationship between crime and the results of the parliamentary elections of September 26, 2010. She compares the performance of the incumbent party's candidates in each polling center in the state of Miranda (beyond what would be expected considering the support that the government obtained in the referendum of 2009) with the change in the number of homicides in the physical environment surrounding each center (Chart 6.4, p. 214). This makes the establishment of a casual relationship plausible, since the polling centers were very similar to each other except for the incidence of crime.

**There is no statistically discernible relationship between strong changes in violence in very small geographical areas in the six weeks before Election Day and the vote in parliamentary elections.**

**Chart 6.4** Violent clashes weeks before and after the legislative elections of September 26th in the state of Miranda, Venezuela (2010)<sup>a/</sup>



a/ The chart shows the coefficients and confidence intervals at 95% of the effect of a surge in violence before or after the election, on the ruling party's electoral gain in percentage points with respect to the referendum on the constitutional reform of 2009.

Source: Kronick (2014a).

Kronick finds no statistically discernible relationship between strong changes in violence in very small geographical areas in the six weeks before Election Day and the vote in parliamentary elections. This is natural, however, because Congress does not have executive powers over security.

Second, Kronick explores the relationship between insecurity and the results of the municipal elections of 2000 and 2004. In these elections voters could be expected to assign responsibility for insecurity to the candidates seeking reelection in each municipality, especially when the municipality had its own police. Using municipal data for the whole country, Kronick finds a slightly negative effect for mayors of municipalities with their own police that suffered a significant increase in crime during their terms.

But what happens when using more disaggregated data? Kronick, third, investigates the relationship between insecurity and the results of the presidential elections of October 7, 2013 and the municipal elections of December 8, 2013 in the state of Miranda, again using data at the polling-center level. The author finds that the incidence of homicides in the immediate environment of each polling center had no effect on the incumbent party's vote in the presidential elections but it did have an effect in the municipal elections.

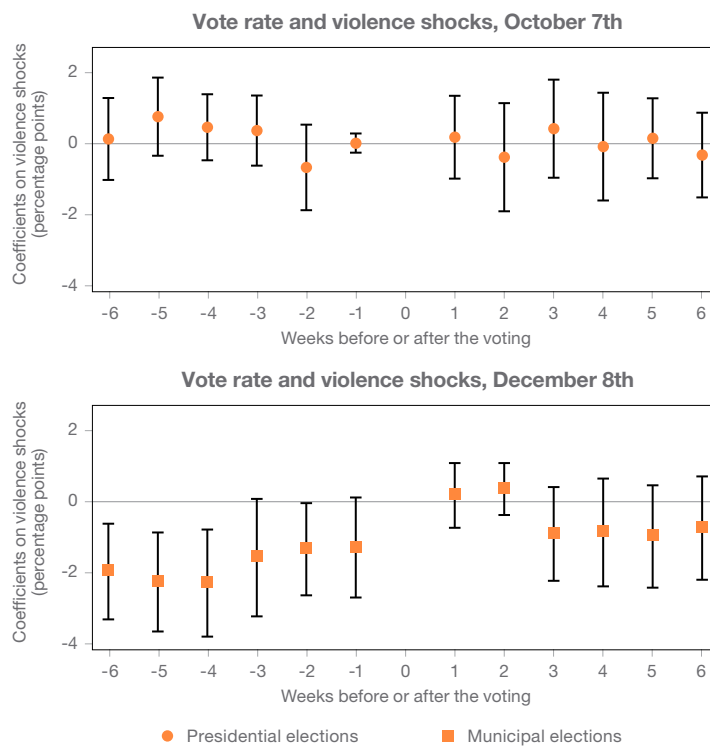
These results are shown in Figure 6.5. The left panel shows the change in the support for the ruling party's presidential candidate in response to sudden shocks in violence around the polling center up to six weeks before and after the elections; and the right panel shows a similar calculation but for the election of mayors. It is evident that where there is a clear responsibility of the local authority for citizen security, increases in violence in the weeks before the elections

affect the electoral performance of the mayor negatively, while there is no such effect in the case of the ruling party's candidate for president<sup>2</sup>.

However, this may be because the contender candidate in the presidential elections was the governor of the state of Miranda, who managed the state police force and who had a close relationship with mayors within the state who in turn managed municipal police forces. So, voters could have been confused as to which of the two candidates was responsible for insecurity. In fact, both candidates appealed to deteriorating security conditions during the campaign, as an element to discredit the opponent.

**Increases in violence in the weeks before the elections affect the electoral performance of the mayor negatively, while there is no such effect in the case of the ruling party's candidate for president.**

**Chart 6.5** Violent shocks weeks before and after the presidential and municipal elections in the state of Miranda, Venezuela<sup>a/</sup>



a/ The chart's left panel shows the coefficients and confidence intervals at 95% of the effect of a surge in violence before or after the presidential elections of October 7th, 2012, on the ruling party's electoral gain in percentage points with respect to the previous presidential election (December 3rd, 2006). The chart's right panel presents the coefficients and confidence intervals at 95% of the effect of a surge in violence before or after the regional elections of December 8th, 2013, on the mayor's electoral gain in the state of Miranda with respect to the previous municipal election (November 23rd, 2008).

Source: Kronick (2014a).

2. The inclusion of the coefficients of post-election violence shocks provides evidence that this pattern is not due to other dynamics simultaneously affecting both crime and the electoral performance of mayors.

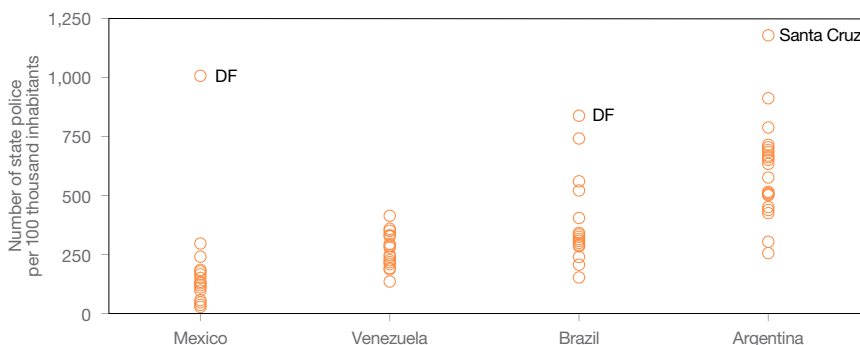
**For insecurity to have any electoral effect, citizens must be able to clearly assign the responsibility for insecurity to a particular candidate.**

Finally, in Colombia, where there is a single police force managed from Bogota, Kronick suggests that the increase in crime has a significant effect on the electoral performance of the ruling party's candidate to president. All this suggests that for insecurity to have any electoral effect, citizens must be able to clearly assign the responsibility for insecurity to a particular candidate.

Citizens' confusion as to which level of government is responsible for insecurity, thus, conspires against their ability to identify the culprits and punish them in the polls. This confusion, however, is not surprising considering the complex distribution of competences between different levels of government.

Since the early nineties, several countries in the region have decentralized many public functions, including the police. While decentralization has not necessarily implied the complete transfer of competences, but rather opened the possibility to create sub-national police forces, it has led to great variability in police presence within each country (Chart 6.6). In Brazil, for example, there are areas with nearly 800 police officers per 100,000 inhabitants and others with only 100 per 100,000 inhabitants. In Venezuela, meanwhile, the national police coexist with 24 state police forces and over 100 municipal police forces (over 200 out of the 335 municipalities do not have their own police force). Not only does this mean that the local authorities share the responsibility for fighting crime with the national government, but also that to the extent that police presence is very different across municipalities, the distribution of these responsibilities across levels of government is also very different.

**Chart 6.6** State police for every 100 thousand inhabitants in Latin American countries (various year)<sup>a/</sup>



a/ Argentina, 2004; Brazil, 2011; Mexico, 2010 and Venezuela, 2006.

Source: Kronick (2014b).



## Bureaucracy and its ability to provide citizen security

Are the institutional structure and the human and material resources available to the State adequate to provide quality security services? For various reasons, the answer is “not always”.

First, there may be a gap between *de jure* initiatives and their *de facto* implementation (Pritchett, Woolcock and Andrews, 2010) due to the limited capacity of the State to carry out its task. For example, a local government may want to promote a system of community policing, but the local police may not be able to build a trusting relationship with the public, or may not have incentives to do so because their compensation and promotion odds depend on tenure rather than performance. In that case, the initiative is likely to fail despite the political will of the authorities.

Second, there may be coordination problems among state branches or levels of government or between the State and other civil society stakeholders. For example, intelligence operations to catch and dismantle a drug-dealing gang may be unsuccessful because the prosecution may not have the capacity to bring the accused to trial. Or the police may not exploit available data on crime concentration due to regulatory restrictions to share such information with external experts that could help analyze them.

Third, due to lack of clarity or agreement among the criminal justice system’s stakeholders on the diagnosis and possible courses of action to be followed, policy-makers may be excessively sensitive to short-term events such as very visible violence episodes, leading to highly volatile policy decisions and a permanent shift in emphasis between different types of strategies. Box 6.1 illustrates this instability based on an exercise focused on initiatives with international funding.

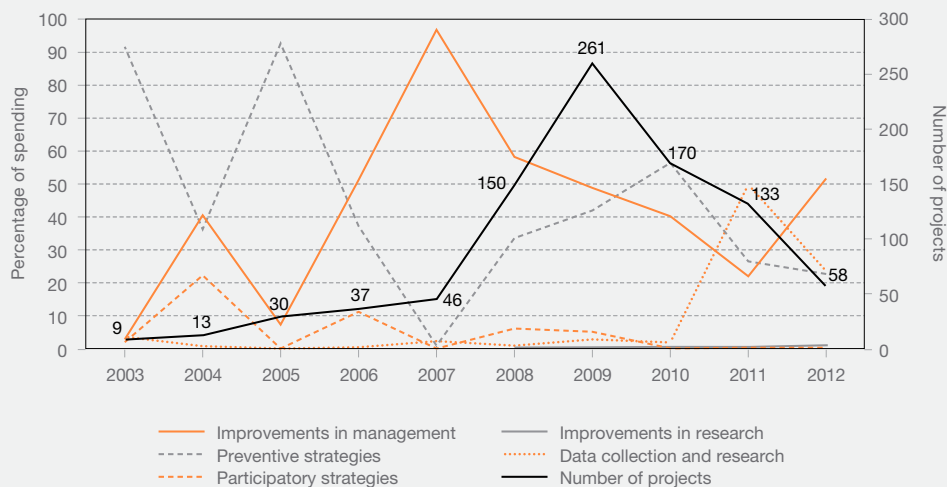
**A local government may want to promote a system of community policing, but the local police may not have the tools.**

### **Box 6.1** The variability of citizen security policies in Latin America

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In a recent study by the Brazilian Institute *Igarapé*, Muggah and Aguirre (2013) make an inventory of more than 1,300 citizen security programs implemented since the late eighties in Latin America with support from multilateral organizations. The study shows that from the mid-2000s there was a significant increase in the number of interventions and in the total budget allocated to them. Moreover, much of this increase occurred in Brazil and Colombia. Finally, most of the programs had a national reach.

**Chart 1** Percentage of total annual spending and number of projects by type of strategy used in Latin America<sup>a/</sup> (2003-2012)



a/ Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Guyana, Paraguay, Peru, Mexico, Nicaragua, Panama, Uruguay and Venezuela.

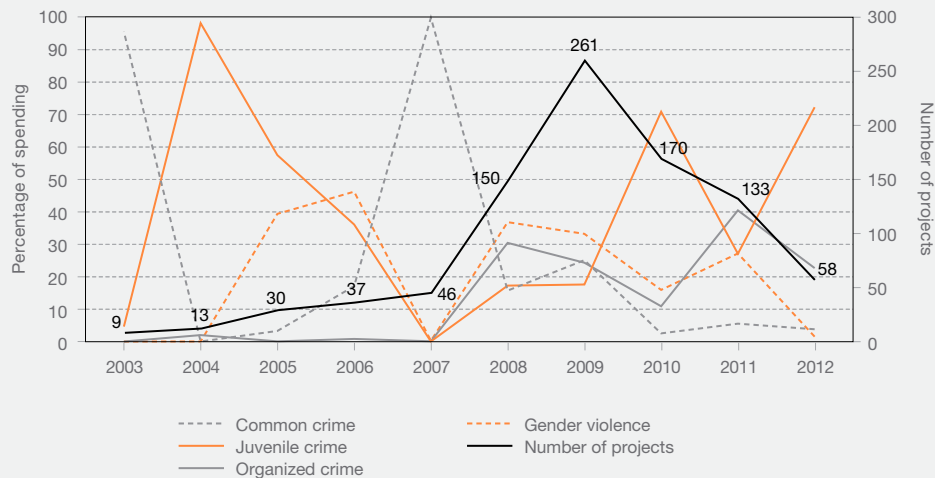
Source: Prepared by the author based on *Igarapé Institute* (2013).

Chart 1 exposes great variability in the allocation of total expenditure among different strategies between 2003 and 2012. While the dominant strategies between 2003 and 2010 were improvements in management and prevention strategies, in 2011 and 2012 there were increased efforts in the data collection and research fronts. Furthermore, while between 2003 and 2007 there was an erratic alternation between management improvements and prevention strategies, between 2011 and 2012 there was a relatively even distribution between management improvements, prevention strategies, and data collection and research.

Similarly, Chart 2 shows great variability in the allocation of total expenditure by goal. For example, reducing “common crime” was the dominant goal in 2007, to become almost irrelevant after 2009. Similarly, controlling “youth crime” was the dominant goal in 2004, but the share of projects with that goal in total expenditure declined through 2007, increasing again from 2008. The shares in total expenditure of projects tackling organized crime and gender violence also varied markedly.

The absence of a clear pattern of prioritization of strategies or goals in this database is not fully conclusive, but it does suggest that the preferences of the multilateral agencies or the governments of the region with regard to citizen security policies change a lot from one year to another, which may suggest the absence of a clear diagnosis or lines of action.

**Chart 2** Percentage of total annual spending and number of projects by goal in Latin America<sup>a/</sup> (2003-2012)



a/ Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Guyana, Paraguay, Peru, Mexico, Nicaragua, Panama, Uruguay and Venezuela.

Source: Igarapé Institute (2013).

The institutions of the criminal justice system are different and have different capabilities. To the extent that any of the links in the system does not work, the capacity of the whole system is affected. This weakens the State as the framework for all social interaction and as the guarantor of social norms.

The institutional weaknesses of the criminal justice systems in Latin America have been extensively documented in both academic and nonacademic publications (e.g. Frühling, 2009; Dammert, 2007; UNDP, 2013; World Bank, 2011) as well as in countless newspaper and anecdotal accounts speaking of a challenging outlook.

The proper functioning of the bureaucracy, i.e., its ability to provide effective and timely services to society, is conditioned by their human capital, their incentives, and their legal and budgetary restrictions. These elements can help the bureaucracy provide effective citizen security, identifying the problems afflicting citizens, and addressing them proactively, or they can also keep the bureaucracy stuck in activities that only nurture their own traditions, neglecting citizens' demands, and only reacting to emergencies.

This section describes some characteristics of the human capital in the criminal justice systems in Latin America, the budgetary resources dedicated to security, and some reforms that have been attempted both in the police and the judiciaries.

**The proper functioning of the bureaucracy is conditioned by their human capital, their incentives, and their legal and budgetary restrictions.**

**The composition of the human capital of the criminal justice system depends on self-selection of applicants, and the internal processes of selection, evaluation, compensation, promotion, and dismissal.**

## **HUMAN CAPITAL**

Who are those responsible for law enforcement and the administration of justice? On one hand, the income gap between the public sector and the formal private sector suggests that the public sector attracts people with less education and less ability to solve problems. On the other hand, some authors (Wilson, 1989; Lipsky, 1980) suggest that public servants are inherently different from other workers because they have a public service calling and appreciate their work beyond the financial compensation they receive, being willing to receive a relatively lower wage in exchange for a job they consider valuable in itself. Similarly, greater employment security and a higher income than in the informal private sector suggest a positive selection of human capital to the public sector.

People's regard for the level and stability of income, which often varies with their age and family situation, can affect their decision to work in the private sector versus the public sector. For example, for a person without family responsibilities it may be more important to have a high-income job than having employment security, so he might prefer starting a business to a career in public service. Other preferences, less changing over time, may also affect people's choice among public sector departments. For example, a person fond of physical activity may choose to be a police officer, while a very compassionate person may be attracted to social work (Prendergast, 2007).

The human capital of the criminal justice system results from the entry and exit of personnel, which depends on self-selection of applicants, and from internal processes of selection, evaluation, compensation, promotion, and dismissal. For example, the prevalence of men in the police force may result from the comparatively smaller interest of women in this job or the series of physical trials involved in the recruitment process. Similarly, the lower average age in the police force or the prison or judicial systems can respond to early retirement schemes. Also, the average educational level of the police force may depend on whether there is a requirement to have completed high school or whether promotion opportunities are associated with subsequent processes of training and specialization.

What are the human resources in the Latin American criminal justice systems like? Table 6.1 compares workers from the police, the judicial system, the rest of the public sector, and the private sector across several characteristics, using data from population censuses in Argentina, Brazil, Mexico, and Peru and, for comparison, the US and France. Three trends stand out: 1) public sector workers boast a slightly higher level of education than private sector workers (possibly due to the higher incidence of informality in the latter); 2) the judicial system staff has a higher educational and socioeconomic level, while the police personnel resembles the rest of public sector workers; 3) the average age of public sector workers is higher than that of private sector workers, with the average age of the judicial system personnel resembling that of other public sector workers but the average age of the police being lower; 4) these patterns are similar in developed countries.

**Table 6.1** Characteristics of police, judicial, public administration, and private sector workers in Latin America, the United States, and France (various years)

Institutions/characteristics	Argentina (2001)	Brazil (2010) <sup>a/</sup>	Mexico (2010)	Peru (2007) <sup>b/</sup>	United States (2010) <sup>b/</sup>	France (2006) <sup>b/</sup>
<b>Police</b>						
Years of schooling (average)	10.3	10.5	10.2	11.8	14.0	9.6
Male (percentage)	91.6	87.4	89.5	90.0	83.7	83.5
Age (average)	36.0	38.7	37.2	39.5	40.9	35.0
Homeowners (percentage)	74.7	75.2	73.1	72.8	80.5	n.a.
Heads of household (percentage)	72.1	62.4	70.4	53.6	65.6	76.8
Married or in union (percentage)	66.8	71.2	79.9	79.8	67.7	49.7
Hours worked	n.a.	48.2	66.2	n.a.	43.7	n.a.
<b>Judicial system</b>						
Years of schooling (average)	15.3	15.5	15.5	14.1	17.6	14.1
Male (percentage)	46.1	67.8	60.4	56.9	54.1	41.0
Age (average)	38.7	45.3	40.0	37.8	48.0	44.3
Homeowners (percentage)	83.2	75.6	77.7	73.2	84.2	n.a.
Heads of household (percentage)	47.0	69.7	54.1	41.7	67.1	56.0
Married or in union (percentage)	51.8	79.5	66.8	52.7	67.5	60.2
Hours worked	n.a.	43.9	49.4	n.a.	42.0	n.a.
<b>Public administration</b>						
Years of schooling (average)	10.8	9.4	12.6	11.95	14.04	9.12
Male (percentage)	62.1	55.0	57.9	65.3	53.5	46.2
Age (average)	40.7	39.3	39.2	38.5	43.6	41.7
Homeowners (percentage)	78.8	77.9	78.1	72.3	72.3	n.a.
Heads of household (percentage)	58.8	49.1	50.2	47.8	57.9	53.9
Married or in union (percentage)	56.7	63.1	63.9	64.6	57.2	53.7
Hours worked	n.a.	40.4	46.4	n.a.	41.2	n.a.
<b>Private sector</b>						
Years of schooling (average)	10.1	7.3	9.8	10.2	13.0	9.2
Male (percentage)	56.7	54.0	64.3	61.4	49.8	51.5
Age (average)	37.1	35.1	35.6	34.7	40.9	39.0
Homeowners (percentage)	72.4	71.0	76.2	70.2	66.7	n.a.
Heads of household (percentage)	48.1	41.9	46.5	39.6	47.5	55.1
Married or in union (percentage)	46.8	58.5	60.2	55.9	50.2	49.6
Hours worked	n.a.	44.5	46.0	n.a.	37.7	n.a.

a/ Years of schooling and weekly hours of work for the year 2000.

b/ Estimated years of schooling.

n.a.: not available.

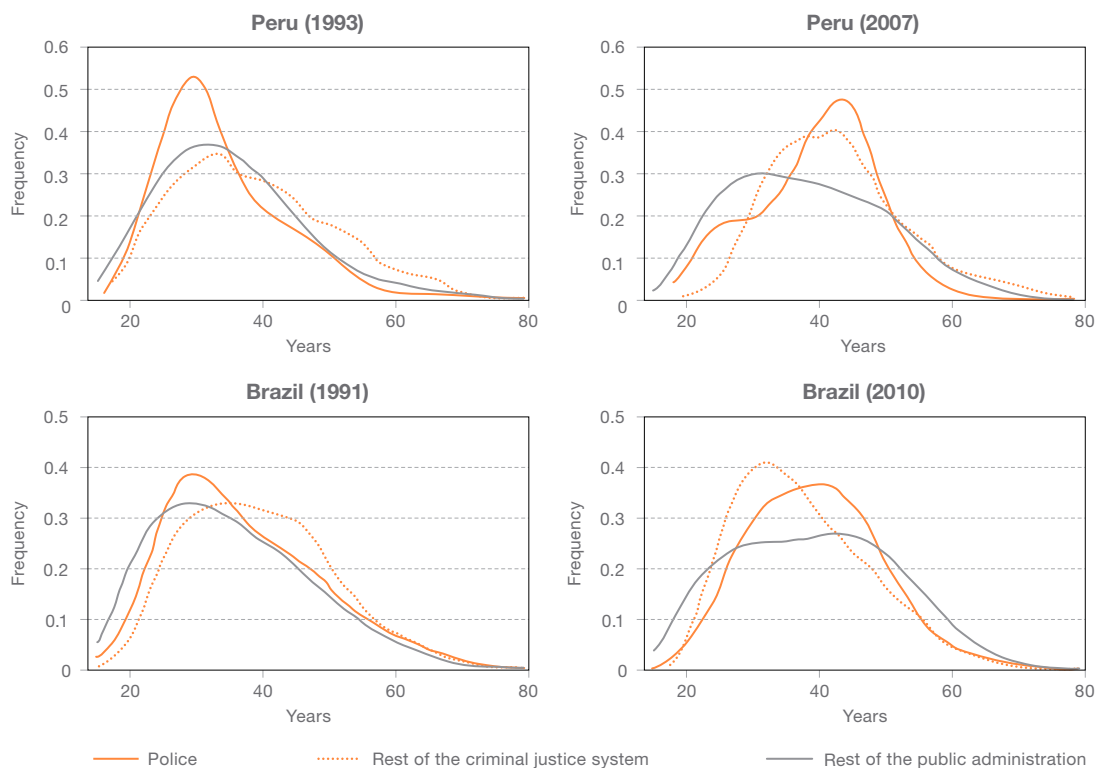
**Source:** Prepared by the author based on *Minnesota Population Center* (2013).

**A new generation of human resources in the judicial and prosecutorial functions could represent an opportunity for institutional innovation in Brazil.**

Beyond these average values, Chart 6.7 shows the age distribution in the police and other institutions of the criminal justice system in Peru and Brazil, in the early nineties and in the late 2000s. Comparing the age distribution of the police with that of the rest of public sector workers in Peru, it is evident that a major shift took place in the span of 14 years: while in 1993 the police used to be much younger than the rest of public sector workers, by 2007 they had become much older. This suggests that the Peruvian police force has been an institution granting a lot of employment stability, as the young people who entered the force in the nineties seem to have remained employed for a longer time than in the rest of the public sector. Although this pattern is most remarkable in the case of the police, it is similar in the rest of the criminal justice system.

Meanwhile, in Brazil, the age distribution of the police also shifted to the right between 1991 and 2010, but it did not follow the same pattern in the rest of the criminal justice system where, if anything, it moved toward the left. A new generation of human resources in the judicial and prosecutorial functions could represent an opportunity for institutional innovation in this country.

**Chart 6.7** Age distribution of public and private workers in Latin American countries (various years)



Source: Prepared by the author based on *Minnesota Population Center* (2013).

A person may have greater incentives to prepare and train for better performance depending on career prospects and medium-term stability (Lazear, 1999). This can influence police officers' perceptions about their job and affect their motivation in daily activities.

**On-the-job training can be a complement not only to basic education but also to experience.**

It is very difficult for the average characteristics of human resources in an institution to change substantially over a short period of time. Therefore, whichever human resources are available at any given time represent the starting point of public policy: it is not reasonable to expect an abrupt change, which does not mean that no action should be taken to improve them. Furthermore, the shortcomings of the available human resources should not be considered an insurmountable barrier, since the formation of public servants can have a very positive impact on the quality of security services. On-the-job training can be a complement not only to basic education but also to experience. In addition, it can also boost staff motivation and satisfaction with the institution.

While on-the-job training is a common practice, it is not easy to quantify whether it has an effect on workers' productivity, largely because their productivity or effectiveness is hard to observe and measure adequately, especially in the public sector. A study on the effect of police training programs in Colombia on the trust of police officers in the police as an institution and in their supervisors (Garcia, Mejia and Ortega, 2013) and other studies in Brazil (Pinc, 2011 and 2012) suggest that training programs enhance motivation significantly and may have an impact on crime.

Finally, a recent collaboration between CAF and the Ministry of Security of Argentina to study the impact of police training programs points to positive behavioral changes. The Police Training and Doctrine Center (CEDOP in Spanish) was created in 2012 with the aim of improving the professionalism of the police through their retraining in the rational and progressive use of force. The program lasts one week and is mandatory for all members of the Argentine Federal Police, with priority given to the junior officials who are up for promotion. Following the training, the percentage of police officers considering verbal communication as a key tool to deal with a suspect increased 21.5%. Similarly, the percentage of agents with low educational level considering it acceptable to shoot the wheels of a moving vehicle declined 42%. Finally, the officials who participated in the CEDOP were less likely to use firearms than those who did not participate.

## **BUDGETARY RESOURCES**

Besides capacities and incentives, the adequate provision of any public service requires money. Table 6.2 (see p. 224) shows central government per capita spending on the police, the prosecution, the courts, and the prisons, in a set of Latin American countries, Spain, and Portugal, adjusting for differences in the cost of living.

Regarding the police, the central government spending in the region is, on average, \$51 per capita, compared with \$181 in Spain. Meanwhile, average spending in the

**These differences in the spending per capita show a marked contrast in the quality of police and judicial services received by the public, beyond the development gap.**

judicial system is \$43 per capita. Spending in the police in Spain almost doubles that in Colombia, the biggest spender in the region. Portugal spends more than twice as much in its judicial system than the average Latin American country. Although these differences are partly a reflection of development gaps with respect to Spain or Portugal, they show a marked contrast in the quality of police and judicial services received by the public.

**Table 6.2** Per capita budget in each branch of the criminal justice system (2008-2012) (PPP-adjusted US\$)

Country	Judiciary	Prosecution	Police	Prisons
Argentina	58.8	11.5	86.7	16.7
Bolivia	16.9	3.7	29.8	1.1
Brazil	84.8	6.6	n.a.	n.a.
Chile	53.1	17.8	41.5	35.7
Colombia	31.1	22.9	87.5	12.8
Costa Rica	142.0	15.7	81.5	n.a.
Dominican Republic	17.7	12.2	n.a.	n.a.
Ecuador	39.7	9.3	64.1	n.a.
Guatemala	26.1	10.1	19.9	n.a.
Honduras	20.0	9.8	n.a.	n.a.
Mexico	41.7	13.5	n.a.	n.a.
Nicaragua	25.9	3.2	24.0	n.a.
Panama	31.9	19.1	n.a.	12.1
Paraguay	29.7	19.1	n.a.	n.a.
Peru	25.3	17.2	71.9	5.7
Portugal	97.1	13.5	n.a.	36.7
Spain	110.4	n.a.	181.3	35.1
Uruguay	35.6	5.4	3.3	n.a.
Venezuela	52.8	12.9	n.a.	n.a.

n.a.: not available.

**Source:** Prepared by author based on Barbolla (2012).

With respect to prosecution, central governments in the region spend, on average, \$12 per capita, a level comparable to that of Portugal (\$13.5). Some outliers are Colombia, which spends nearly \$23, and Paraguay and Panama, which spend almost \$20.



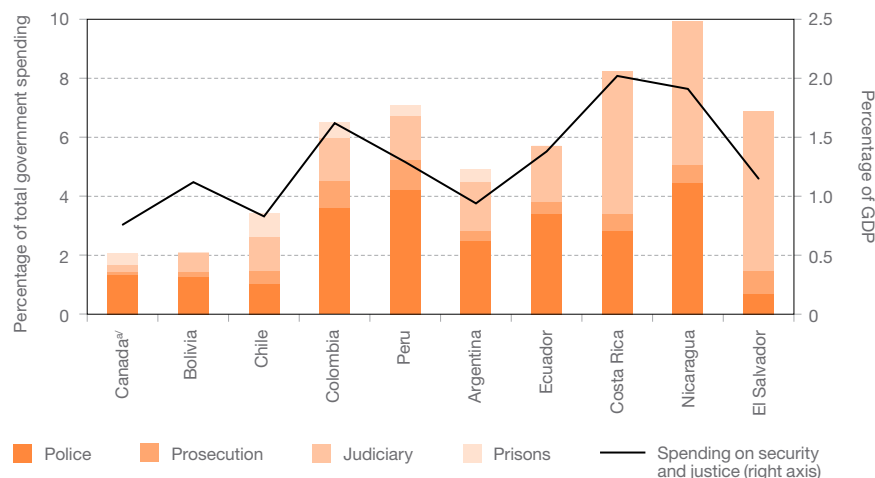
With regard to the prison system, there is also a lot of variability. Portugal, Chile, and Spain spend more than twice as much as, for example, Argentina. While prison spending depends greatly on the size of the prison population, Argentina, for example, has a smaller prison population than Peru and only a slightly higher prison population than Bolivia, yet spends much more per capita than these two countries, implying much higher levels of spending per inmate. This influences the probability that detainees are reintegrated into working life and adapt socially.

**Most countries devote the largest share of resources to the police force.**

In general, countries spend according to their possibilities. Chart 6.8 shows the size of spending in the criminal justice system as a percentage of GDP and as a percentage of total government spending<sup>3</sup>. The only developed country in the chart is Canada, which spends the least in the criminal justice system as a percentage of GDP, just 0.76%. In Latin America, Chile and Argentina also spend a relatively low percentage of GDP in the criminal justice system—0.83% and 0.94%, respectively—while Colombia (a special case due to the war on the guerrilla) and Central American countries (which spend between 7 and 10% of total government budget on the criminal justice system excluding prisons) spend the most.

Most countries devote the largest share of resources to the police force, except Costa Rica, Nicaragua, and especially El Salvador, which allocate the highest percentage of their budget to the judiciary. El Salvador appears a particularly remarkable case, as the judiciary accounts for eight times what is spent in the police force.

**Chart 6.8** Spending in the criminal justice system as a percentage of GDP and total government spending in Canada and Latin American countries



a/ In the case of Canada, public spending corresponds to the 2000-2005 average.

Source: Barbolla (2012).

3. For Costa Rica, Ecuador, El Salvador, and Nicaragua, there is no available information about the Budget for prisons, thus, the total budget is underestimated.

**One of the main changes has been the replacement of the inquisitorial system for the adversarial system.**

In short, although most Latin American countries spend fewer resources per capita in their criminal justice systems than their developed country benchmarks, this entails an equal or even greater effort in terms of their GDPs.

## OTHER BUREAUCRACY CONSTRAINTS

One of the most important challenges facing the region is to achieve more with less, and that is where the ability of the States to learn what works and what does not, and then put those lessons into practice, plays such an important role. In addition to resource constraints, the laws and operation rules of the criminal justice system institutions may determine the activity of the bureaucracy.

## REFORM OF CRIMINAL PROCEDURES

Most countries in the region, with legal codes based on the continental European tradition, have implemented reforms in their criminal justice systems over the past two decades<sup>4</sup>. One of the main changes has been the replacement of the inquisitorial system for the adversarial system in 16 countries (Table 6.3) with oral instead of written trials, more rights for defendants (among other things, less use of preventive detention) and a marked strengthening of the processes of criminal investigation. The reform has given a central role to the prosecutor or the “*ministerio público*”, rather than the judge. In particular, under the adversarial system, the prosecution investigates the crimes, has the monopoly to process the suspects, and has greater powers to decide which cases are brought to trial; the work of the judge is restricted to monitoring the investigative procedure and sentencing (Pásara, 2010). Although evidence on the effect of these reforms on the quality of security provision in the region is preliminary, it points in a promising direction (Chapter 5).

**Table 6.3** Criminal procedural reform in Latin America and the Caribbean

Country	Starting year
Guatemala	1994
Argentina, Costa Rica, El Salvador	1998
Paraguay, Venezuela	1999
Bolivia, Chile	2000
Ecuador	2001
Honduras, Nicaragua	2002
Dominican Republic	2004
Colombia	2005
Peru	2006
Mexico, Panama	2008

**Source:** Duce, Fuentes and Riego (2009).

4. This fact do not include English-speakers countries from the Caribbean that, as United States of America and Canada, have criminal justice systems from the anglo tradition, which are rule by the “Common Law”.

## POLICE REFORM

The police force is defined by its human resources and its rules of operation. A hierarchical culture, the vision that citizens are potential criminals, and the regard for policing as a win-or-lose battle, are part of the conventions that guide the functioning of an institution that, in many countries in Latin America, retains a military inspiration. This is a legacy of the autocratic regimes that ruled over almost the entire region (some exceptions were Colombia, Costa Rica, and Venezuela) until the late seventies, and that typically combined policing and military functions into a single armed force. The democratic transitions of the past 35 years have caused police forces to change focus toward guaranteeing individual rights and freedoms, preventing crime, and enforcing the law. However, this transformation requires not only regulatory changes in the procedures and the organization of the police, but also in the training academies, in the retraining processes, and in the systems of external control. Until now, Latin America has made modest progress on this front, with partial and intermittent reforms (Arias, Rosada Granados and Fabian, 2012).

Mota, Trebilcock and Hartford (2012) have typified the police forces in the region according to the institution to which they are accountable: the State, the Government in office, themselves, or a criminal organization. When the police respond to the State, they safeguard individual freedom within the rule of law; when they respond to the Government, they are at the service of the authority in power, protecting the power structure; when they respond to themselves, their guiding principle is to preserve their areas of influence and to obtain resources from the State and the citizenry. And when they respond to a criminal organization, they are directly involved in illegal activities as a means to survive.

Each of these models exists or has existed in the region, so that the processes of modernization and democratization of the police have been very different, with very mixed results. In some cases, the inability to penetrate the structures of the police has led the government to intervene and rebuild it completely, as happened with the Metropolitan Police of Caracas in the early 2000s; while in other cases there are so few resources that it is almost impossible to counter the weight of corruption, as in the case of Honduras (Alliance for Peace and Justice, 2013). The scope for reform or for gradual adjustment towards a model focused on citizen rights and law enforcement depends on the starting point of each police force.

The initiatives that tilt policing in a democratic direction, such as community policing or training-program reforms in the police academies, represent partial reform efforts, but possibly the most that can be hoped for at certain times. To the extent that the police in the region grow closer to citizens, their legitimacy and effectiveness shall increase.

**The scope for reform or for gradual adjustment towards a model focused on citizen rights and law enforcement depends on the starting point of each police force.**

**Lack of trust in state institutions weakens the incentives for individuals to engage in mechanisms of participation and control.**

## Citizens and state legitimacy

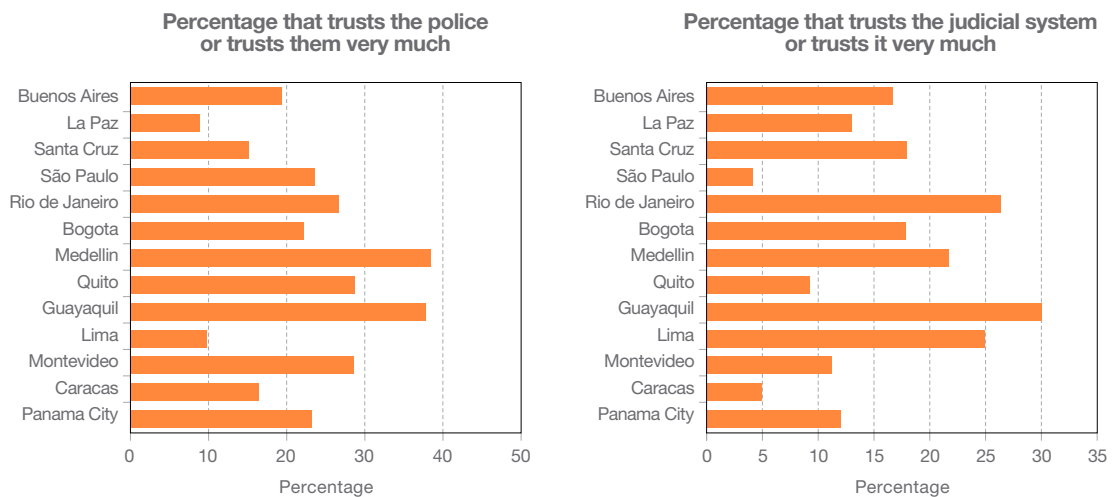
Democracy improves the quality of public services to the extent that it makes it easier for citizens to oversee the functioning of the State. If democracy does not fulfill this role, the quality of public services and institutions deteriorates. Citizen participation is vital to hold the authorities accountable and to improve their performance (CAF, 2012). For this to happen, citizens must trust their institutions.

Trust arises when repeated interaction yields systematically satisfactory results for the citizen and generates the expectation that these results will be repeated in the future. Lack of trust in state institutions weakens the incentives for individuals to engage in mechanisms of participation and control, reducing the pressure on the bureaucracy and on elected officials to deliver. The CAF 2013 survey provides an update on the state of citizen trust in public statistics, the police, and the judiciary.

### TRUST IN THE CRIMINAL JUSTICE SYSTEM

A first problem regarding the trust in the institutions responsible for providing citizen security is the limited availability, the poor quality, and the unreliability of statistical information. According to the CAF 2013 survey, only 3.6% of respondents consider official crime figures very credible, and only 20% believe them to be credible or very credible. This situation is worse in cities like Bogota, Lima, and Buenos Aires, where only 11.9%, 16.4%, and 16.5% of respondents, respectively, consider them to be credible or very credible.

**Chart 6.9** Measures of trust in the police and the judicial system in Latin American cities (2013)



Source: CAF (2013).

A second problem is that both the police and the judicial system inspire little trust among citizens (Chart 6.9). Even in the best cases (Medellin and Guayaquil) the percentage of respondents who say they trust in or rely heavily on the police does not reach 40%, and in some cases not even 10%. Trust in the judicial system is even lower: except in Guayaquil, Medellin, São Paulo and Rio de Janeiro, the percentage of respondents who say they trust in or rely heavily on the judicial system is below 20%. Most Latin American citizens perceive a very high probability that the criminal justice system will not protect their rights when they need it. This distrust is rooted in their own or other's experience in dealing with these institutions. Asked to assess the work of the police, the percentage of respondents who rate it as good or very good is almost equal to the percentage who report no trust.

**Table 6.4** Perceptions on the relationship with the police and the judicial system in Latin American cities (percentage in agreement or very much in agreement with the statement)

City	Police			Judicial system		
	You can count on the police	The police are just regardless of who you are	The police are accessible	The judicial system usually punishes the culprit correctly	The judicial system imposes just penalties	The judicial system pronounces sentence swiftly
Buenos Aires	29.53	19.53	32.89	11.44	10.03	8.79
La Paz	16.95	15.92	23.15	10.47	9.53	2.36
Santa Cruz	11.10	8.29	12.56	8.60	10.33	3.06
São Paulo	31.74	16.93	36.09	25.72	23.76	6.10
Rio de Janeiro	26.58	16.79	25.53	21.95	20.38	9.02
Bogota	32.97	25.22	45.70	8.84	13.47	4.03
Medellin	41.61	29.47	47.99	13.27	16.89	9.63
Quito	28.11	30.06	34.07	14.13	16.35	10.39
Guayaquil	41.00	38.08	47.26	16.09	18.33	11.77
Lima	19.00	10.48	18.31	8.36	6.09	2.16
Montevideo	34.28	18.17	38.95	14.98	13.54	4.99
Caracas	10.66	11.15	15.90	5.97	7.00	3.73
Panama City	21.49	11.37	13.57	11.65	13.96	8.66

Source: CAF (2013).

Finally, Table 6.4 exposes some other negative perceptions about the work of the police and the judicial system. Although with some variability across cities, most respondents do not see the police as an institution they can count on, perceive that their treatment depends on whom they are interacting with—possibly on the physical appearance or the socioeconomic status of the latter—and find it very inaccessible. An even higher percentage perceives the judiciary as slow and unfair in terms of the sentence pronounced and the penalty imposed.

In the most extreme case, the State may become unable to provide basic security conditions and the citizenry fail to recognize it as the guarantor of individual freedoms and contracts.

## WHAT HAPPENS WHEN TRUST IN THE INSTITUTIONS IS LOST?

When people lose trust, they give up overseeing the system and putting pressure on the bureaucracy, leading to further deterioration of services and further declines in trust. This vicious circle can affect any criminal justice system and bring it to crisis.

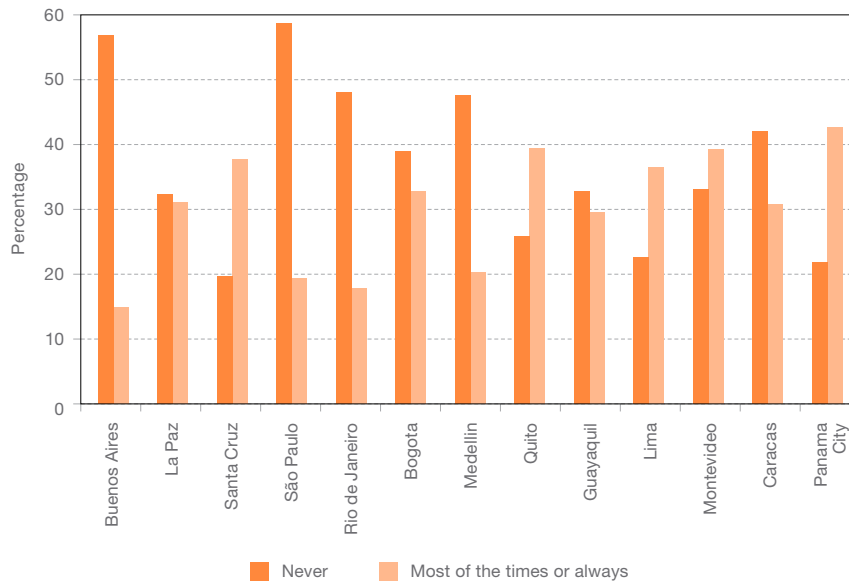
In the most extreme case, the State may become unable to provide basic security conditions and the citizenry fail to recognize it as the guarantor of individual freedoms and contracts, opening the door for criminal organizations to step in. This has happened in several places in Latin America. In São Paulo, for example, the criminal organization “*Primeiro Comando da Capital*” (PCC) took over the State between 2006 and 2007, a period known as “*Pax monopolista*”, fully controlling the use of force in the poorest areas of the city (de Mello *et al.*, 2013). In Rio de Janeiro, the *Comando Vermelho*, a criminal organization emerged from the prisons, monopolized the use of force in most of the city until 1996, openly challenging the authority of the State (Lessing, 2013a). In Medellín and other parts of Colombia, the State lost control of the institutions in the early nineties, the era of Pablo Escobar. More recently and even today, drug-trafficking organizations have full control over conflict resolution mechanisms and the use of force in some areas of Mexico.

In less extreme situations, the loss of state legitimacy may manifest itself in other ways, such as social acceptance of legal and procedural breaches on behalf of crime-fighting institutions, conflict resolution without resorting to the relevant institutions, and independent individual or collective action against insecurity.

## SOCIAL ACCEPTANCE OF ILLEGAL CRIME-FIGHTING MEANS

Calls for a “heavy hand” (“*mano dura*”) in the fight on crime arise from the notion that if the State is unable to guarantee one’s own rights, why should one worry about the rights of criminals. Thus, social acceptance of heavy-handed policies is actually a symptom of mistrust in the State and of the inability of public institutions to deliver adequate security. Unfortunately, it is common in many cities of the region: in Caracas, Guayaquil, and Bogota, about a third of respondents agree that it is okay for the police to always or most of the times break the law to capture criminals; and in La Paz, Santa Cruz, Quito, Lima, Montevideo, and Panama City, more people think it is okay for the authorities to always or most of the times break the law to capture criminals than those who think they should never do it (Chart 6.10).

**Chart 6.10** If the police act outside the law to capture criminals, do you agree? Replies in Latin American cities (2013)



**Distrust in the criminal justice system leads to citizen behavior that makes it harder for the criminal justice system to provide security.**

Source: CAF (2013).

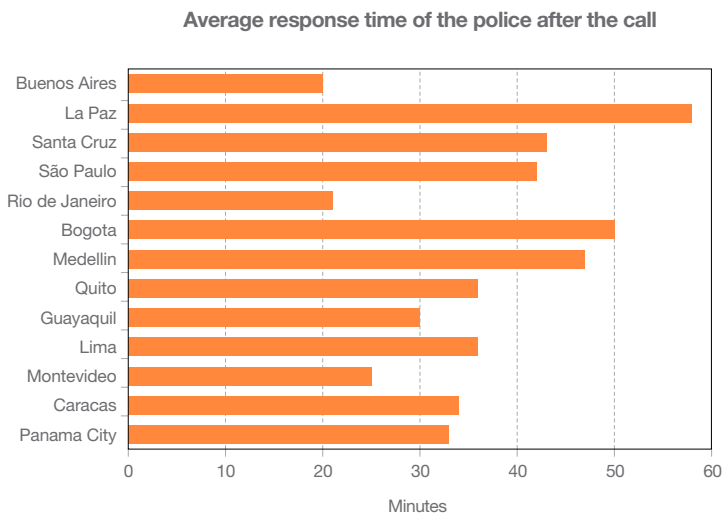
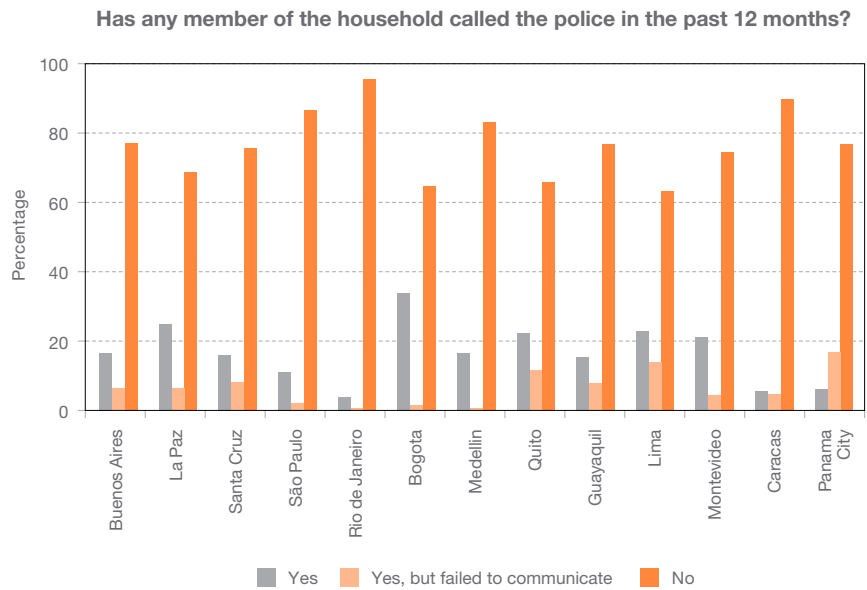
## RESOLVING CONFLICTS WITHOUT RESORTING TO THE RELEVANT INSTITUTIONS

Distrust in the criminal justice system leads to citizen behavior that makes it harder for the criminal justice system to provide security. On average, only 45% of those respondents who were victims of a crime reported it to the authorities<sup>5</sup>. Within the 55% who did not report it, more than half said that “the police would not have done anything” or that they “distrusted the police”, and 9% said they feared reprisals. Moreover, even if not the victims of a crime, people can call the police if they see someone breaking the law or violating somebody else’s rights. Yet, on average, only 15% of respondents reported having called the police at least once during the previous 12 months, 5% tried calling them but failed to communicate, and 80% never called them (Chart 6.11, p. 232). The response time when the communication was successful was 20 minutes on average, with some worrisome cases such as Bogota and Medellin, where it was close to 50 minutes on average.

5. This percentage goes from 23% in Santa Cruz to 64% in Montevideo.

The inclination to take the law into one's own hands is also quite prevalent.

**Chart 6.11** Percentage of households that called the police and average response time in Latin American cities (2013)

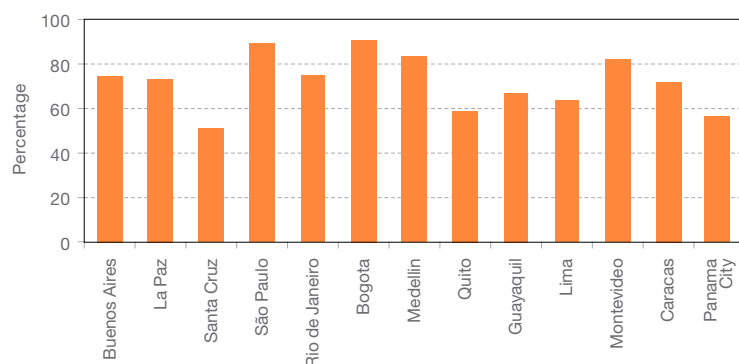


Source: CAF (2013).

The inclination to take the law into one's own hands is also quite prevalent. In Santa Cruz, Quito, Lima, and Panama City, for example, less than 60% of respondents disapprove of somebody's resorting to physical aggression in the event of a car crash (Chart 6.12).



**Chart 6.12** Percentage that never agrees with physical aggression among citizens in car crashes in Latin American cities (2013)



Source: CAF (2013).

Many citizens in the region report taking multiple actions to protect themselves from insecurity, thereby altering the normal course of their daily lives.

## INDEPENDENT ACTIONS

Many citizens in the region report taking multiple actions to protect themselves from insecurity, thereby altering the normal course of their daily lives. In 54% of households respondents avoid coming home late, in 43% of them they do not wear jewelry, in 35% of them they avoid leaving the house alone, in 32% of them they change routes at night, and in 28% of them they do not talk to strangers. All these actions entail foregoing individual freedom due to insecurity. In only 12% of the households respondents say they do not take any action. And a small albeit non-negligible 6% of respondents say they try to talk “less” to the police to protect themselves, speaking for an extreme level of distrust (Table 6.5).

**Table 6.5** Actions taken by households to protect themselves against insecurity in Latin American cities (2013)<sup>a/</sup>

Actions	Percentage of households that take this action	Percentage of the total number of actions mentioned
Avoid coming home late	53.58	22.96
Don't wear jewelry or valuables	43.19	18.51
Avoid leaving the house alone	34.98	14.99
Change circulation routes at night	31.89	13.66
Don't talk to strangers	28.18	12.07
None	11.75	5.03
Don't frequent parks or plazas	9.65	4.13
Participate in neighborhood gatherings regarding security	6.63	2.84
Communicate more with the police	6.52	2.79
Avoid talking to the police	5.62	2.41

a/ Given that people could mention more than one action, in the first column we report the percentage that mentions that action (notwithstanding another) and in the second column we report the times each action was mentioned as a percentage of the total number of actions mentioned.

Source: CAF (2013).

### Lack of security services deepens inequality.

Finally, some citizens take joint actions to protect themselves from insecurity. While in 45% of households respondents think “each person shall defend himself as he can”, and in 39% of households respondents claim going to the authorities, in 19% of households people take coordinated home-watching actions with their neighbors (Table 6.6).

**Table 6.6** Actions to solve security problems in the community in Latin American (2013)<sup>a/</sup>

Actions	Percentage of households that take this action	Percentage of the total number of actions mentioned
Each shall defend himself as he can	45.45	36.83
Look to public authorities	38.96	31.58
Coordinate among neighbors to watch homes	19.23	15.58
Don't do anything	9.69	7.86
Some neighbors act as mediators	8.85	7.17

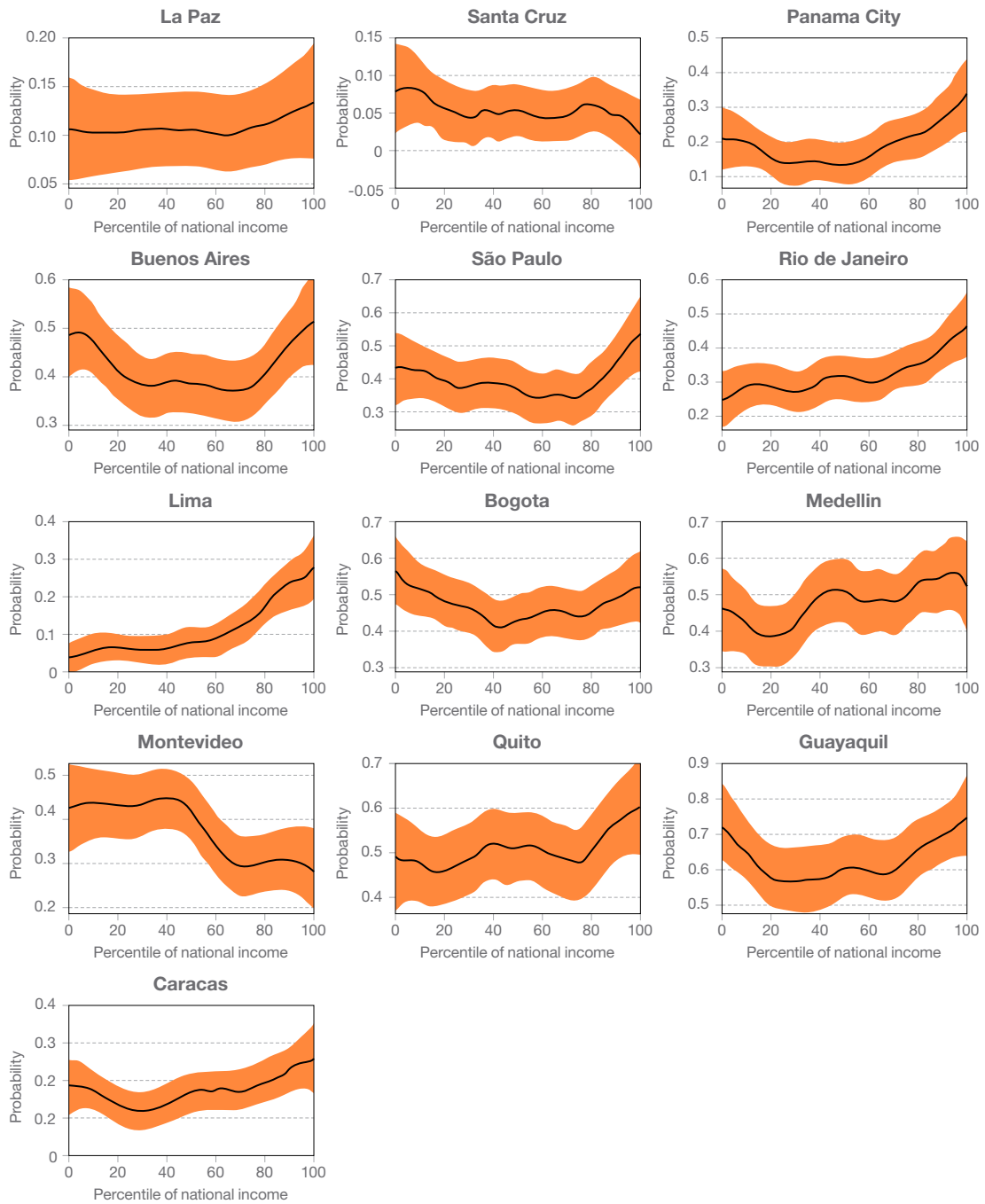
a/ Given that people could mention more than one action, in the first column we report the percentage that mentions that action (notwithstanding another) and in the second column we report the times each action was mentioned as a percentage of the total number of actions mentioned.

Source: CAF (2013).

## INEQUALITY AS A THREAT TO TRUST

If the police have a more active presence in certain areas of the city beyond what it is justified by the spatial distribution of crime, they provide unequal access to citizen security to people of different socioeconomic status, possibly for political reasons. When the provision of security is allocated according to criteria unrelated to the severity of insecurity, social segregation may be aggravated, since the lack of security services deepens inequality. Chart 6.13 shows no clear pattern of correlation between police presence and income levels in several cities. In Montevideo and Santa Cruz, for example, the probability that the police pass in front of the house is higher for households with lower income. However, in Caracas, Lima, Rio de Janeiro, Medellin, Quito, and Panama City, higher-income households report greater police presence around their homes than poorer households. This may be because crimes against other people are usually negatively correlated with socioeconomic status, while property crimes often affect higher-income areas the most (Di Tella, Galiani, and Schargrodsky, 2002; Gaviria and Pagés, 2002), so that different prioritization may be due to different levels of incidence of different types of crime across cities.

**Chart 6.13** Probability that the police pass in front of one's house everyday and percentile in the income distribution in Latin American cities (2013)



Source: CAF (2013).

## Conclusions

The hope of Latin Americans to a more prosperous and more secure life collides with the reality of street violence, which even if not everybody experiences, everybody suffers from. To fear being the next victim or to experience violence through the suffering of others as reflected in the media, downgrades the quality of life: it implies fewer spaces to visit, less time to be exposed to others, and less people with whom to interact. Insecurity is underdevelopment; development is freedom.

How societies move towards higher stages of development depends on many things, but at any given time, whatever the circumstance, those who make decisions on public resources play a major role in the progress or stagnation of a society. The ability of policymakers to undertake them depends on the institutional constraints they face, but while institutions cannot change overnight, policymakers can indeed initiate processes to improve capabilities in the future.

It is necessary to recognize the characteristics of the security-related bureaucracy in each particular context and search for opportunities within it to increase the quality of service provision. In general, the capacities lie in the people and in the incentives and constraints they face; sometimes, positive changes can be fostered without replacing the existing institutional arrangements completely.

All too often the problem is that policymakers are subject to very different incentives from those of other public servants: they deal with political constraints that make it difficult to prioritize initiatives with effects beyond the electoral cycle. Moreover, the number of issues facing the voter is so great that any specific issue (including security) is easily diluted in the debate, reducing the usefulness of elections as an instance of political accountability or an opportunity to promote a specific sector agenda, especially when the attribution of responsibility for the elected authority is weak. Elections are defined by the trust inspired by the candidates rather than their efficiency.

This does not mean that there are no accountability mechanisms through which citizens can and should play a role as overseers. In modern societies there are many ways in which citizens can demand better public services to the authorities, but their use depends on citizens' trust that the bureaucracy (and not necessarily the political authorities) will respond assertively to their demands. This trust is the basis of the State's legitimacy as the guarantor of security, and is key to the effective provision of services, but is now in crisis—a crisis that only occasionally has extreme manifestations, but that Latin Americans bear everyday.





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## REFERENCES

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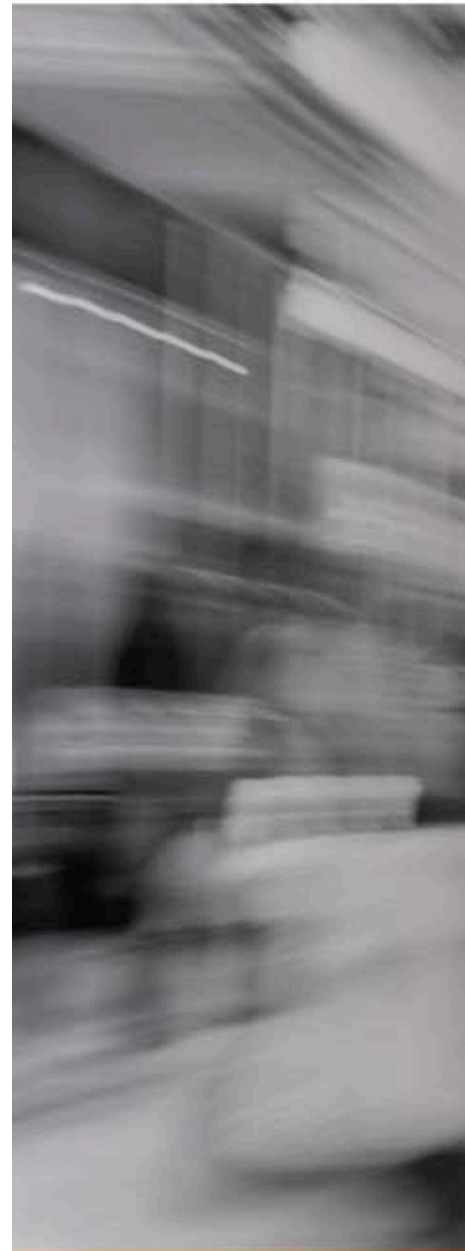








The blistering growth of crime and violence in many countries of Latin America in recent years has not only entailed high economic and social costs but also, by undermining trust among citizens and public authorities, compromised democratic governance and state legitimacy. This year's Report on Economics and Development (RED) proposes an approach for the analysis of insecurity in which crime results from decisions made by individuals in a particular situation. While it is true that beliefs, perceptions, self-control, and other personality traits can tip an individual into crime, his physical and social environment, the incentives provided by illegal markets (e.g., drugs), and the credibility and efficiency of the criminal justice system are also important. They determine the opportunities to commit a crime. That is why, efforts to improve public safety cover a wide range of dimensions: family, school, neighborhood, community, urban infrastructure, economic regulations, police, justice, prisons. The design of effective policies in these different areas, however, requires better statistical information and policy monitoring and evaluation mechanisms that make it possible to learn about their qualitative and quantitative effects as well as the channels through which these effects play out.



# RED