

# Violence in the Caribbean: Cost and Impact

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## INTRODUCTION

Crime—particularly violent crime—is pervasive in the Caribbean and imposes a serious economic and social burden on the countries in the region. An average of 40 percent of the Caribbean population identifies crime and security-related issues as the overarching problem facing their countries, even more so than poverty or inequality.<sup>1</sup> In several Caribbean countries, crime has risen sharply since 2007, with homicide rates more than doubling (UNODC/World Bank 2007; UNDP 2012).

Studies of crime and its impact on economic prospects and social outcomes in the Caribbean are few and, more important, narrow in scope, owing notably to the limitations of data. In particular, data on crime in Caribbean countries are generally from either national police or citizen security opinion surveys. Although such data are an important source of information, many crimes go unreported to the police, meaning that both the “real” prevalence of crime and its impact on society at large are invariably understated. Because of the data shortcomings, existing studies have not been able to generate comparable cross-country estimates of the impact of crime between Caribbean countries and between the Caribbean and the rest of the world. More important, there has been little analysis of the impact of crime on the private sector and on investment prospects.

To help improve understanding of crime and violence and possible solutions in the Caribbean, the Inter-American Development Bank (IDB) undertook two initiatives between 2013 and 2015 to generate comparable primary data on crime in the Caribbean. First, a Caribbean Crime Victimization Survey module was attached to the Latin American Public Opinion Project Survey in five Caribbean countries (The Bahamas, Barbados, Jamaica, Suriname, and Trinidad and Tobago). Second, a business victimization survey module was attached to the

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The chapter authors are from the Inter-American Development Bank.

<sup>1</sup>Latin American Public Opinion Project 2014/2015 Caribbean data sets.

Productivity, Technology, and Innovation Survey of 2014 to canvass the views of a representative sample of private sector firms in 13 Caribbean countries.<sup>2</sup> Simultaneously, the collection of administrative and survey data, combined with development of a new standardized methodological approach, allowed the first comparable estimates to be made of the cost of crime among 17 Latin American and Caribbean countries and six other advanced economies.<sup>3</sup>

The findings of these initiatives are detailed in three recent IDB publications (Ruprah and Sierra 2016; Sutton and Ruprah 2017; Jaitman 2017). This chapter summarizes some of the main findings of these publications, with a preliminary assessment of their possible implications.

## STYLIZED FACTS ON CRIME IN LATIN AMERICA AND THE CARIBBEAN

Homicides are the most widely recognized and comparable indicators of the levels of violence within a society.<sup>4</sup> Globally, the Latin America and the Caribbean (LAC) region has the highest homicide rates.<sup>5</sup> Within LAC, Caribbean homicide rates are generally higher than those of countries in the Southern Cone of Latin America, but well below those of Central America (Figure 15.1).

A common trend among the five Caribbean countries surveyed is the dominance of violent crimes (Figure 15.2). The number of victims of assault and threat as a share of the population<sup>6</sup> (6.8 percent) is markedly higher than in any other region. New Providence (The Bahamas) and Kingston (Jamaica) stand out with the highest levels of assault and threat in the Caribbean, at nearly twice the world average. By comparison, property crimes (theft and burglary) in the Caribbean are relatively low compared with the international scale. More worryingly, the victims of violent crime are predominantly young, which can have a significant bearing on economic and social outcomes both in the near term and in the long term. Homicide victims are disproportionately youth between the ages of 18 and 35 (Table 15.1).

Victimization rates for assault and threat also differ significantly by sex, age, and income (Figure 15.3). For instance, the rates are significantly higher for men

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<sup>2</sup>Countries include Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago.

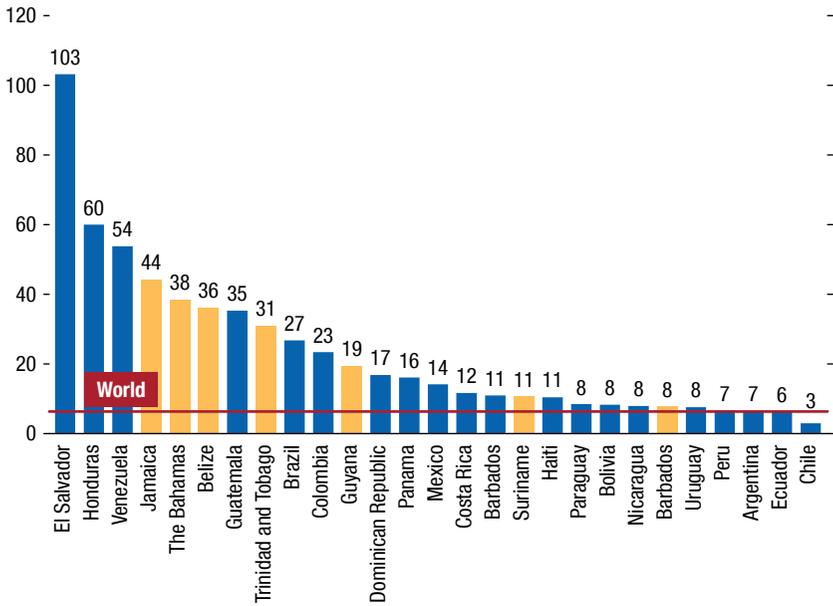
<sup>3</sup>LAC countries include: Argentina, The Bahamas, Barbados, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Jamaica, Mexico, Paraguay, Peru, El Salvador, Trinidad and Tobago, and Uruguay. Advanced economies include Australia, Canada, France, Germany, United Kingdom, and United States.

<sup>4</sup>Homicide is the most visible and reliably reported form of violent crime. Given that most countries have a legal requirement that all deaths be registered, homicide data are generally captured fairly accurately by police or public health systems.

<sup>5</sup>At 23 per 100,000, the LAC average homicide rate was four times the international average (UNODC 2015).

<sup>6</sup>Assault and threat refer to physical attack or threat of physical attack with the use of violence, but do not include incidents of a sexual nature or incidents of domestic violence.

**Figure 15.1. Homicide Rates per 100,000 Population in Latin America and Caribbean Countries, 2015 or Latest Available Year**



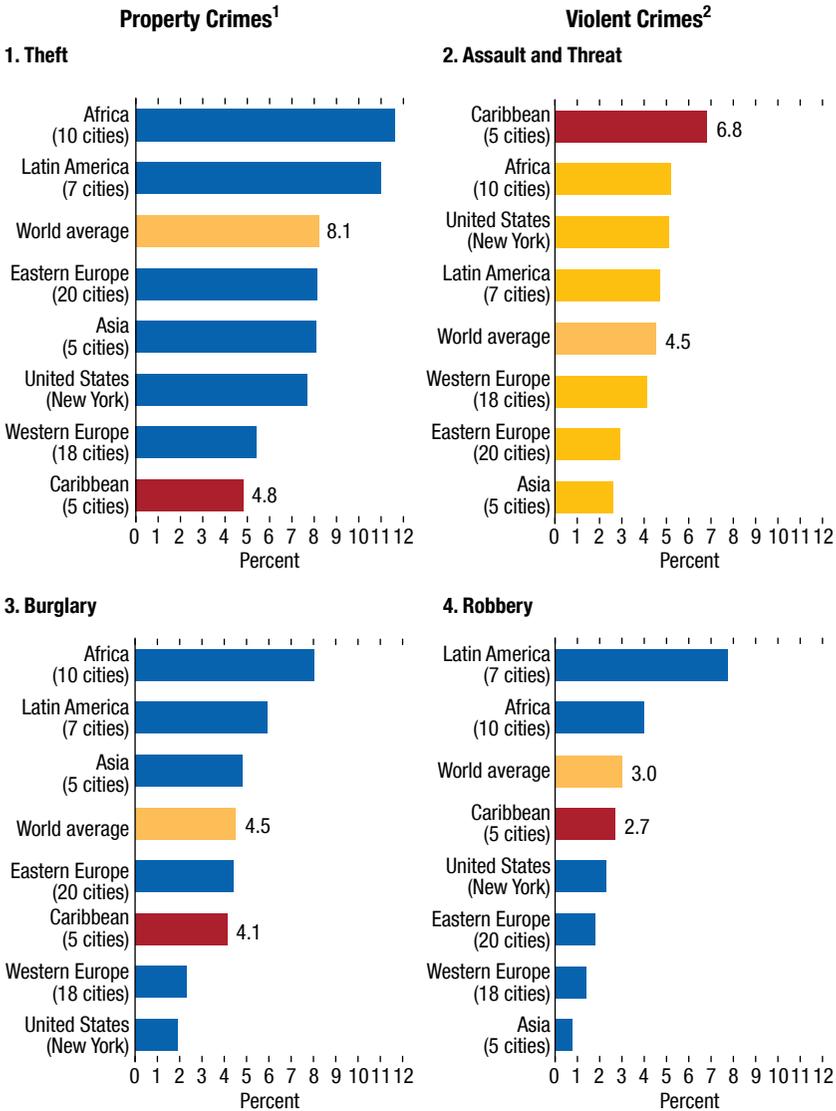
Source: Official national sources in each country.

than for women<sup>7</sup> and for youth ages 18–30 than for the overall population. Rates of assault and threat among the poorest 25 percent of the population are twice as high as for the richest 25 percent.

Additional stylized facts emerge from the survey data. First, violent crime happens close to home and is concentrated in neighborhoods that report having higher physical disorder (for example, graffiti, trash, abandoned buildings) and lower social cohesion (such as trust among neighbors). Second, neighborhoods with a gang presence are associated with higher odds of victimization by violent crime. Indeed, gang presence in a neighborhood is a significant predictor of victimization even after controlling for other individual and neighborhood characteristics. Third, firearms are used more frequently in crime in the Caribbean than elsewhere in the world. For instance, guns are used about twice as often in robbery and three times as often in assault in the Caribbean compared with the global average.

<sup>7</sup>Note the “assault” category specifically excludes domestic violence and sexual violence. These types of violence require specific dedicated surveys for reliable estimates to be obtained.

**Figure 15.2. Percent of the Population Victimized in a 12-Month Period, Capital Cities of Seven World Regions, by Type of Crime**



Source: Sutton, van Dijk, and van Kesteren (2017) using data from the Inter-American Development Bank Caribbean Crime Victimization Survey module attached to the 2014/2015 Latin American Public Opinion Project Survey and the International Crime Victimization Surveys (latest available year).

Note: Theft is stealing without violence. Burglary is break-in and stealing, or attempted stealing, without use of violence. Assault and threat refers to physical attack or threat of physical attack with the use of violence.

<sup>1</sup>Without the use of threat or force.

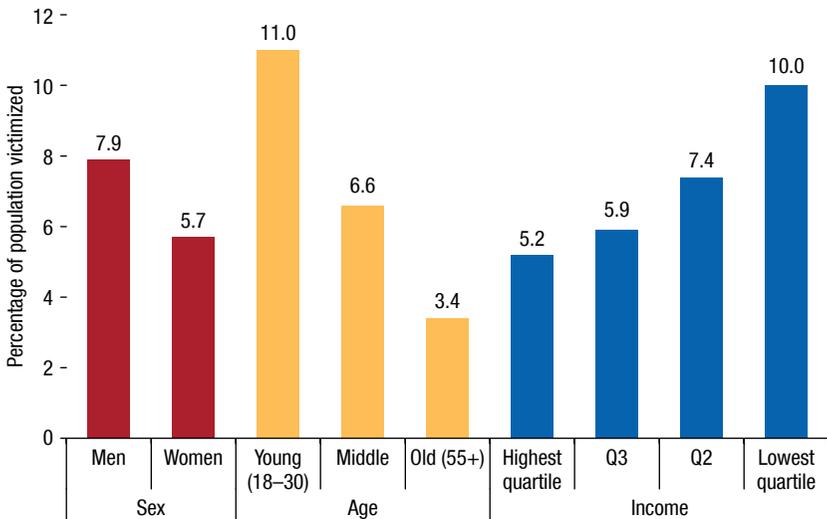
<sup>2</sup>With the use of force or threat.

**Table 15.1. Homicide Rates by Age Group, Four Caribbean Countries**  
(Per 100,000)

Country	Under 18	18–25 Years Old	25–35 Years Old	Total Population
The Bahamas	5.3	84.8	64.7	33.3
Barbados	1.9	24.6	22.6	10.6
Jamaica	6.3	64.0	90.8	47.3
Trinidad and Tobago	8.6	52.8	69.6	34.8

Source: Sutton and Ruprah 2017.

**Figure 15.3. Percent of the Population Victimized by Assault and Threat in a 12-Month Period, by Sex, Age, and Income, for Five Caribbean Capital Metropolitan Areas**



Source: Inter-American Development Bank Caribbean Crime Victimization Survey module attached to the 2014/2015 Latin American Public Opinion Project Survey.

Note: The “assault” category specifically excludes domestic violence and sexual violence. These types of violence require specific dedicated surveys for reliable estimates to be obtained.

## THE COST OF CRIME

Crime and violence adversely affect economic prospects and social outcomes. At the same time, efforts to combat crime lead to costly behavioral responses (e.g. loss of privacy) and distortions in the allocation of private and public resources (Jaitman 2015). Because the public and private sectors often have to spend large amounts of resources, both to prevent crime and to deal with its negative consequences, it can have a significant impact on economic prospects, particularly in the Caribbean where many economies are stuck in a low growth–high debt trap.

A variety of direct and indirect costs are associated with crime. In particular, direct costs are associated with injury, damage, and loss; public and private expenditures on security; and response to crime, such as the cost of the criminal justice system. In addition, indirect or intangible costs arise from changes in behavior caused by the fear of crime or the costs to families of victims.

How can the costs associated with crime be estimated? The most common approach is the accounting methodology, which values and sums up damages and losses in monetary terms. Although this methodology considers only part of the costs of crime, and the estimates are therefore conservative, it allows for cross-country comparison if done systematically. Jaitman and Torre (2017) apply this methodology for 17 LAC countries, and the results for the Caribbean are highlighted below. This is believed to be the first attempt to systematically study the costs of crime for a group of Caribbean countries.

Three types of costs are included in these estimates (detailed further in Jaitman and Torre 2017):

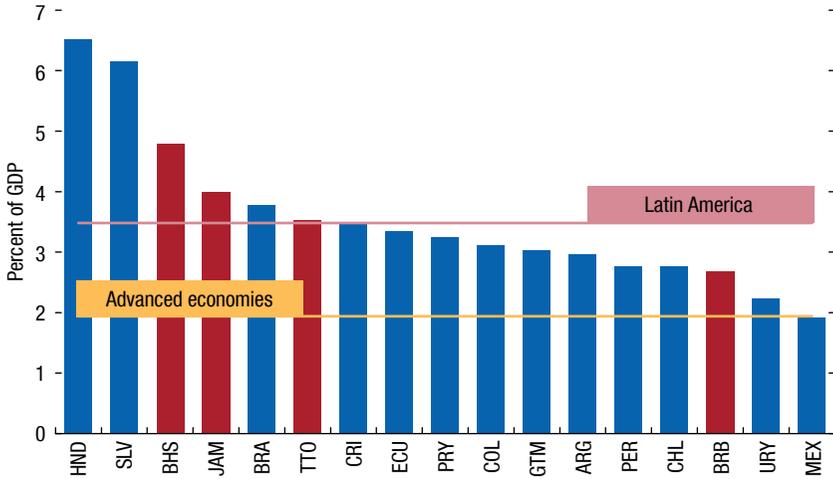
- *Public spending* on security, including policing services, criminal justice, and prison administration. Upper bound estimates assume that all of the police budget is allocated to crime-fighting activities (that is, it includes costs of activities not directly linked to crime fighting, such as traffic violations).
- *Spending* on security by private firms. Private costs are measured in the World Bank's Business Environment and Enterprise Performance Survey. The lower bound excludes costs borne by sectors such as agriculture, mining, utilities, and financial services, while the upper bound includes imputed costs.
- *Social costs* of crime, defined as victims' and prisoners' forgone income. For the prison population and homicide victims, the social cost is equal to the full loss of income while for victims of rape, robberies, and assault, it is equivalent to a fraction of the imputed income.

The aim is not to establish exact amounts, but rather to identify orders of magnitude of the cost of crime and violence across a range of countries.

## International Comparisons

Figure 15.4 presents the estimates of the overall costs of crime for selected countries in the Caribbean (The Bahamas, Barbados, Jamaica, and Trinidad and Tobago), compared with the 17-country LAC average and six other advanced economies. The estimated cost of crime in the Caribbean is 3.7 percent of GDP, slightly higher than the regional Latin American average of 3.5 percent of GDP. The cost in the Caribbean far surpasses the average of costs in Australia, Canada, France, Germany, the United Kingdom, and the United States. To put the magnitude of the cost in context, it is comparable to the income share of the poorest 30 percent of the Caribbean population.

Within LAC, the Caribbean has the highest overall costs after Central America (Figure 15.5), but the Caribbean economies top the list in public spending

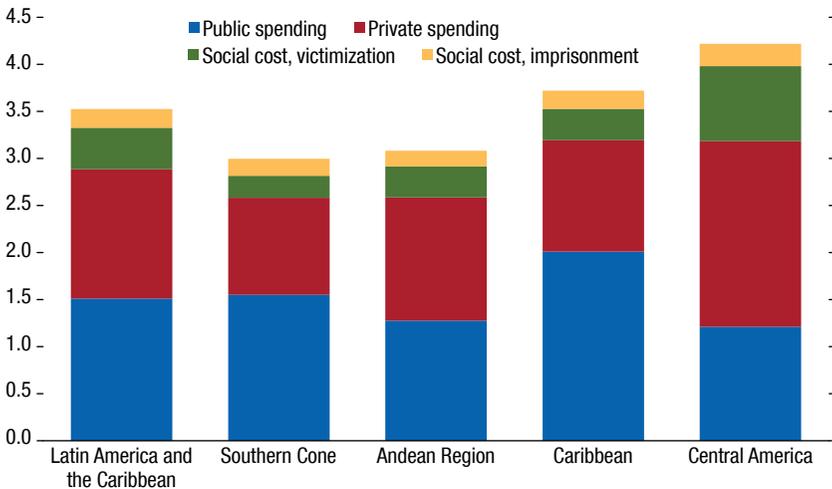
**Figure 15.4. Crime-Related Costs, International Comparison**

Source: Jaitman 2017.

Note: Data labels in figure use International Organization for Standardization (ISO) country codes.

**Figure 15.5. Overall Crime-Related Costs, 2014**

(Percent of GDP)



Source: Jaitman 2017.

associated with crime by a significant margin. The Caribbean spends more than 2 percent of GDP on public security (including expenditure on police, administration of justice, and prisons), which is about 0.5 percentage point of GDP higher than the LAC average. Other crime-related costs include 1.2 percent of GDP in private spending and about 0.5 percent of GDP in social costs.

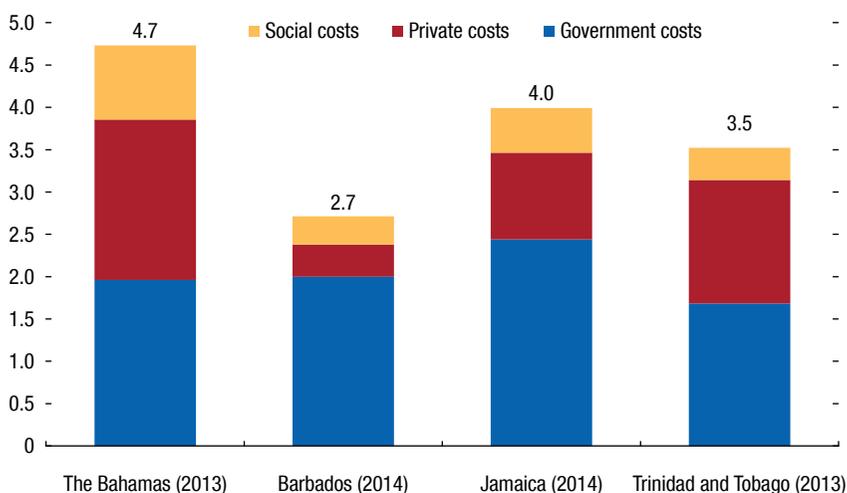
## Regional Comparisons

Within the Caribbean, The Bahamas incurs the highest crime-related costs (Figure 15.6). At a cost of 4.7 percent of GDP, it ranks third among 17 countries (Jaitman 2017), after Honduras and El Salvador, where crime is recognizably widespread. This cost is mostly driven by spending on security by private firms, potentially indicative of tourism sector–related security costs in the all-inclusive resorts. Barbados ranks the lowest in the Caribbean, with an estimated cost of crime of about 2.7 percent of GDP. Jamaica and Trinidad and Tobago fall in between.

Delving deeper into the regional cost estimates, the following results emerge:

- Public expenditure ranged between 1.5 percent of GDP (Trinidad and Tobago) and 2.5 percent of GDP (in Jamaica, the highest of the 17 LAC countries). However, The Bahamas, Barbados, and Jamaica spend the least on justice administration among LAC countries—well under 0.1 percent of GDP—contributing to low capacity and potential bottlenecks in courts.

**Figure 15.6. Crime-Related Costs**  
(Percent of GDP)



Source: Jaitman and Torre 2017.

- Private sector and social costs of crime are also highly variable, ranging from 0.2 percent of GDP to 1.9 percent in Trinidad and Tobago and 0.3 percent of GDP to 0.9 percent of GDP in Jamaica. The Bahamas incurs the most of both costs while Barbados incurs the least.
- Homicides are the largest contributor to social costs in all countries except Barbados. For example, in The Bahamas, the income forgone because of homicides is equivalent to almost 0.5 percent of GDP, while forgone income of the imprisoned population is the second largest, at 0.35 percent of GDP.

These estimates provide a first look at the costs of crime. The differences across these estimates likely reflect, among other factors, differences across each country's social, demographic, and income profiles, which require further analysis to disentangle.

## IMPACT OF CRIME ON THE PRIVATE SECTOR

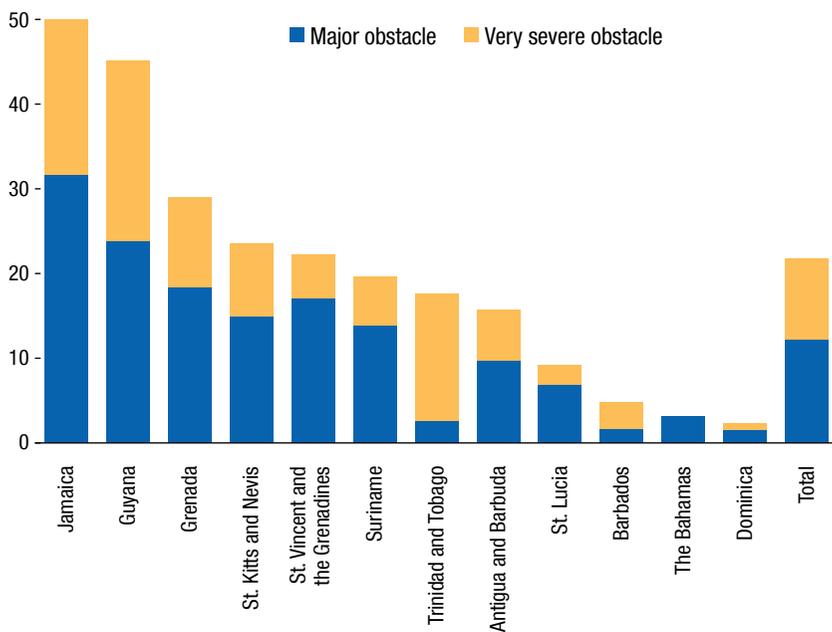
The literature on crime and private sector performance suggests a negative relationship between crime and key performance indicators such as revenue, employment, and hours worked (Montoya 2012; Fiestas and Sinha 2011). These effects vary based on type of firm, with small firms being affected the most (Montoya 2012). In addition, crime is also a major deterrent to firm entry (Mahofa, Sundaram, and Edwards 2015), while it also raises the cost of doing business. For example, firms experience losses from theft and vandalism, financial resources forgone on security expenditure, and reduced working hours, which can limit firms' ability to grow (Detotto and Otranto 2010). Crime and insecurity also diminish the quality of the workforce and undermine innovation (Lacoe 2013).

Based on the Productivity, Technology, and Innovation Survey of firms in 13 Caribbean countries, 22 percent of firms, on average, report crime as either a major or a severe obstacle to their performance. There is, however, substantial differentiation across countries in the region (Figure 15.7), which could potentially be explained by differences in the sampling of firms or in other underlying firm and country characteristics. For instance, in The Bahamas, large private and public sector spending on preventing crime and addressing its negative impact could possibly explain why few firms identify crime as an obstacle. About 23 percent of Caribbean firms reported losses due to crime. This share is higher than the world average from the World Bank Enterprise Survey (19 percent), but lower than for the LAC region (27 percent).<sup>8</sup> The percentage of businesses victimized ranged from 8 percent in Belize to 33 percent in Guyana, with firms most likely to be victims of theft, vandalism, and attempted robbery (Figure 15.8).

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<sup>8</sup>World Bank Enterprise Survey average for all countries and LAC using the latest available year.

**Figure 15.7. Crime as a Major or Severe Obstacle to the Private Sector**  
(Percent of firms)



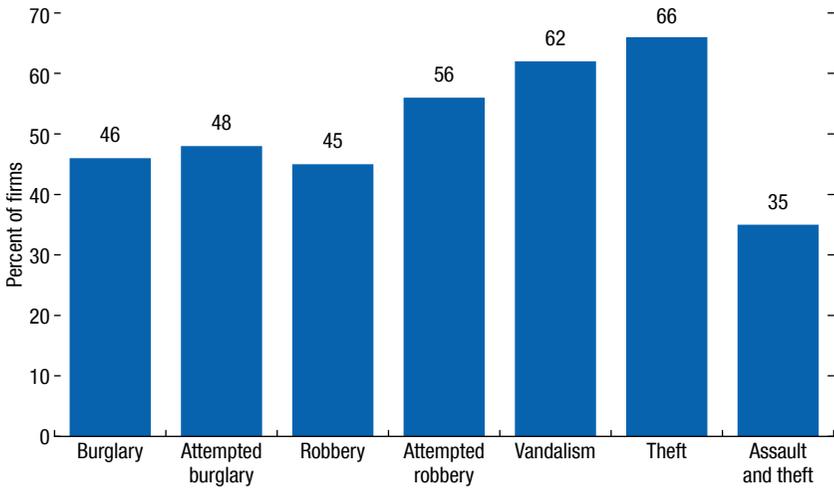
Source: Productivity, Technology, and Innovation Survey, 2014.

Among the affected firms, 47 percent of small and medium enterprises report that they experienced a loss due to crime, compared with 25 percent of large firms (Figure 15.9).

### Cost of Crime for Firms

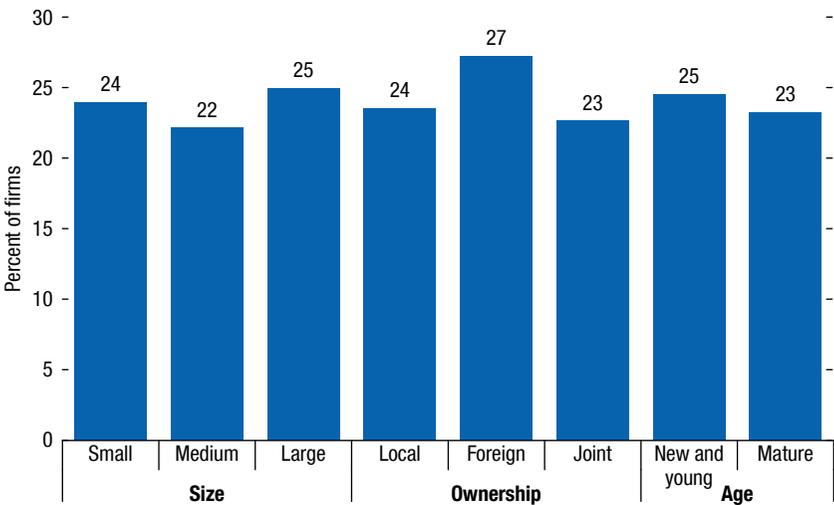
Caribbean firms report that, on average, 2.4 percent of annual sales are lost due to crime (Figure 15.10); the losses range from 1.3 percent for Barbados to more than 4 percent for Jamaica. Almost 70 percent of Caribbean firms also use private security to mitigate potential losses from crime, compared with the world average on the World Bank Enterprise Survey of 56 percent (latest available year for each country). Private security costs for Caribbean firms were, on average, about 2.6 percent of their annual sales, ranging from 1.5 percent for Guyana to about 6 percent for St. Kitts and Nevis. It is noteworthy that businesses that engage in self-protection enjoy better sales performance, although the costs of self-protection reduce profitability and private investment (Kimou 2015). Taking again the example of The Bahamas to illustrate how these constraints work together, although private costs from crime were high as a percentage of GDP (Figure 15.6), they are not as significant when examined against annual sales and thus not a sizable concern to most firms (Figure 15.7).

**Figure 15.8. Type of Crime in the Previous Fiscal Year among Businesses that Reported Crime-Related Losses, Average of 13 Caribbean Countries**



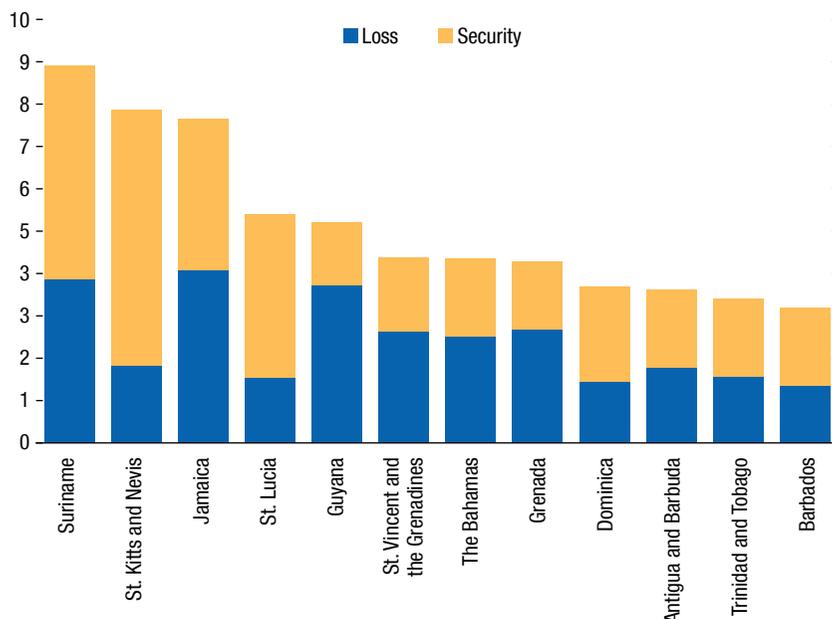
Source: Sutton and Ruprah 2017 using data from Productivity, Technology, and Innovation Survey, 2014.

**Figure 15.9. Percentage of Firms Affected by Crime, by Firm Characteristic, 2014**



Source: Productivity, Technology, and Innovation Survey, 2014.

**Figure 15.10. Crime and Security–Related Costs for Firms**  
(Percent of annual sales)



Source: Productivity, Technology, and Innovation Survey, 2014.

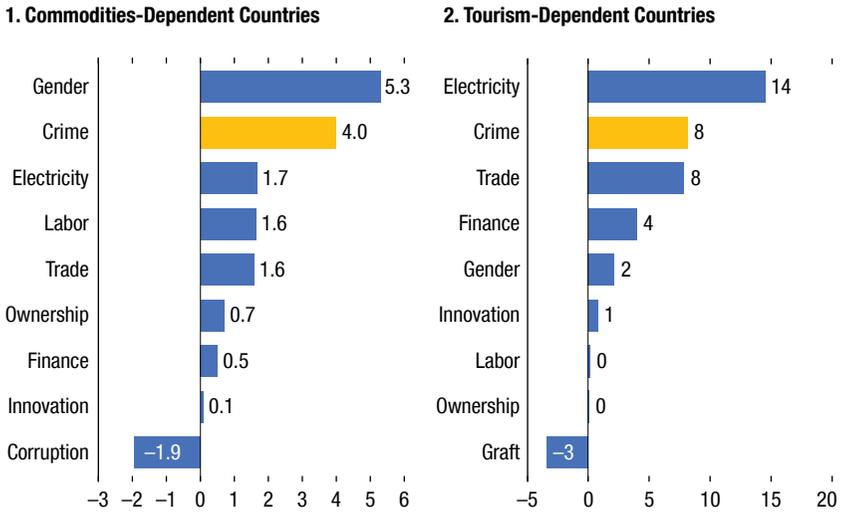
## The Economic Impact of a Reduction in Crime

To quantify the relative impact of several constraints on firm performance in the Caribbean, the regression equation specified in Annex 15.1 was applied.<sup>9</sup> The estimated coefficients and the mean value of each constraint on firm performance were then used to simulate the effect on firm performance of a 10 percent reduction in each constraint (Figure 15.11). Sales growth is used as the performance indicator and Caribbean countries are separated into two groups: tourism-dependent (The Bahamas, Barbados, and Jamaica) and commodity-dependent (Guyana, Suriname, and Trinidad and Tobago) countries.

The simulation exercise indicates that tackling crime yields the second-largest improvement in sales growth compared with other constraints. A 10 percent reduction in crime is associated with an 8 percent increase in sales growth for firms that are tourism dependent and a 4 percent increase in sales growth in commodity-dependent countries. Thus, the tourism-dependent economies

<sup>9</sup>See Ruprah and Sierra (2016) for further details.

**Figure 15.11. Potential Increase in Sales Growth with 10 Percent Reduction in Each Constraint**  
(Percent)



Source: Ruprah and Sierra 2016.

(Jamaica and The Bahamas, both of which have high crime rates) stand to make the greatest return for the private sector by investing resources in preventing and combating crime.

The effects on tourism are similar. The same reduction in homicide rates would yield an increase of 2.1 percent in annual tourism arrival growth. On an individual level, crime has also been shown to affect emigration decisions (and thus labor supply in the country)—victims of crimes are more likely to report being dissatisfied with life and considering emigration. Intentions to emigrate in the next three years increase by more than 30 percent for victims or witnesses of violence.

## CONCLUSIONS AND POLICY RECOMMENDATIONS

Although crime has been identified as a key deterrent to growth in the Caribbean, very little research exists on the types and incidence of crime, its drivers, and especially on quantifying the consequences of crime. The reasons are many, including data limitations, capacity and resource constraints in conducting analysis in this area, a bias toward punitive rather than preventive measures, and political and cultural sensitivities around the topic. The data presented in this chapter are a significant step forward, but much analysis on the drivers and impact of crime remains to be done.

From an economic perspective, as articulated in the seminal paper by Becker (1968), criminals are rational individuals who compare the expected cost and benefit of committing crimes with those of legal activities. Thus, taking the profit out of crime is an important policy goal that requires raising the expected return to education, increasing formality, and raising the cost of committing crimes or violence.

Thus, crime prevention and deterrence are equally important. Prevention interventions help increase the expected net benefit of legal and nonviolent activities. For example, targeting at-risk youth for vocational programs and social programs increases the possibility that they will gain legal earnings and obtain respect through nonviolent means, while concurrently potentially reducing youth unemployment. Likewise, improved policing and a more effective criminal justice system would increase the expected cost of committing crimes, increasing deterrence.

Within this framework, and considering international evidence of what works to reduce crime, Sutton and Ruprah (2017) provide some recommendations for addressing crime:

- *Prevention and control:* A balanced approach is required that includes both smart prevention and smart crime control. Current prevention programs in the Caribbean (for example, parenting and mentoring programs, urban renewal programs, victims' support) are understaffed and underresourced, while law enforcement continues to dominate national budgets for public safety. Achieving a balance means recognizing that crime prevention is a proven means for effectively reducing violence and therefore bolstering crime-prevention programs politically, administratively, and financially.
- *Targeted and evidence-based intervention:* Scarce resources should be invested where they may make the most difference—in high-crime areas and with those who are most at risk. In addition, crime-reduction initiatives should consider what has been proven to work, and should be subjected to rigorous evaluation to establish effectiveness. This effort will require better data collection and widespread sharing of data, provision of funding support for evaluations, and integration of research with policy.
- *Monitoring:* A dashboard of key metrics is needed for high-frequency monitoring to inform policymakers of the current issues and their status so policies could be adapted accordingly. For example, number of arrests, types of crime (violent, property, drug offenses), cases that proceed to trial and conviction, prison population, and participants in rehabilitation programs and prevention and social programs could all be informative indicators for policymaking.

In addition, given the high costs to the private sector of crime in the Caribbean, the private sector could potentially partner with the government to prevent and fight crime, including through urban renewal programs and crime-prevention projects to help train at-risk youth. The private sector could also become directly involved in funding project evaluation and research

programs, including conducting field experiments to evaluate “out-of-the-box” measures. Examples of such initiatives in Latin America include corporate volunteerism (SulAmerica Peace Parks in Brazil), corporate funding of victimization surveys (Peru), and organizing forums in which to discuss public safety policies (Colombia). Building corporate social responsibility by sponsoring roads, neighborhoods, or communities could potentially help prevent crime.

## ANNEX 1.1.

Equation (15.1.1)

$$\begin{aligned}
 O_r = & \beta_0 + \beta_1 Age_r + \beta_2 Age2_r + \beta_3 Size_r + \beta_4 Size2_r + \beta_5 Own\_foreign_r \\
 & + \beta_6 Own\_joint_r + \beta_7 Privatelyheld_r + \beta_8 SoleProprietorship_r \\
 & + \beta_9 Partnership_r + \beta_{10} LimitedPartnership_r + \beta_{11} Own\_female_r \\
 & + \beta_{12} Manager\_female_r + \beta_{13} Exporter_r + \beta_{14} Importer_r + \beta_{15} Corruption_r \\
 & + \beta_{16} Corruption2 + \beta_{17} Outages_r + \beta_{18} Outages\_generator_r \\
 & + \beta_{19} New\_product_r + \beta_{20} New\_process_r + \beta_{21} Crime\_loss_r \\
 & + \beta_{22} Labor\_constraint_r + \beta_{23} Credit\_denied_r + \theta_j + \mu_c + \epsilon_r
 \end{aligned}$$

A description of the variables is provided below.

- $O_{ri}$ : Firm-level outcome (sales growth, purchasing-power-parity adjusted)
- $Age_{ri}$ : Firm age in years
- $Age2_{ri}$ : Firm age in years squared
- $Size_{ri}$ : Number of employees
- $Size2_{ri}$ : Number of employees squared
- $Own\_foreign_{ri}$ : Dummy equal to one if firm is predominately foreign owned
- $Own\_joint_{ri}$ : Dummy equal to one if firm is owned jointly by local and foreign entities
- $Privatelyheld_{ri}$ : Dummy equal to one if firm is a private limited liability company
- $SoleProprietorship_r$ : Dummy equal to one if firm is a sole proprietorship
- $Partnership_r$ : Dummy equal to one if firm is a partnership
- $LimitedPartnership_r$ : Dummy equal to one if firm is a limited partnership
- $Own\_female_r$ : Dummy equal to one if firm is owned by a female
- $Manager\_female_r$ : Dummy equal to one if firm is managed by a female
- $Exporter_r$ : Dummy equal to one if firm is an exporter
- $Importer_r$ : Dummy equal to one if firm is an importer
- $Corruption_r$ : Index constructed in Jaitman and Torre (2017)
- $Corruption2_r$ :  $Corruption_r$  squared
- $Outages_r$ : Dummy equal to one if firm reported outages

- **Outages<sub>r</sub>generator**: Interaction term, which accounts for firms that experienced outages and owned or shared a generator
- **New<sub>r</sub>product**: Dummy equal to one if firm introduced significantly improved products
- **New<sub>r</sub>process**: Dummy equal to one if firm introduced a significantly improved process for producing or supplying products
- **Crime<sub>r</sub>loss**: Dummy equal to one if firm reported losses (percent of sales) due to crime
- **Labor<sub>r</sub>constraint**: Dummy equal to one if firm identified labor as a major problem and provided training to its employees
- **Credit<sub>r</sub>denied**: Dummy equal to one if firm application for credit was rejected
- $\theta_j$ : Sector-specific fixed effects
- $\mu_c$ : Country-specific fixed effects

and  $r \in \{\text{Caribbean-Commodities, Caribbean-Tourism}\}$  and  $i \{\text{Sales growth, purchasing-power-parity adjusted}\}$ .

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