

3. RISK FACTORS FOR CRIME AND VIOLENCE

Potential risk factors for crime victimization encompass conditions at the individual, relationship, community, and societal levels. As a whole Caribbean countries exhibit crime patterns similar to those in other countries. Both murder and robbery rates are higher in countries with low economic growth. Murder rates are also higher in poor countries and in communities that are poor and have large populations of young men. In Caribbean countries overall, homicide rates are 34 percent higher and robbery rates are 26 percent higher than in countries with comparable macroeconomic conditions. In general, the analysis implies that policies to reduce crime should focus on improving economic conditions, providing opportunities to young men, and improving trust in law enforcement.

3.1 This chapter assesses the risk factors for crime and violence in the Caribbean. Some studies characterize this type of analysis as one of determinants or correlates. The term “risk factors,” which comes from the public health literature, is used here to emphasize that while it may be possible to cautiously infer causal relationships between crime and other variables, such relationships are not deterministic—the presence of a single risk factor does not guarantee that violence or crime will occur. In addition, the use of the risk factors terminology emphasizes that well-designed interventions may succeed in counteracting those risk factors.

3.2 An analysis of risk factors is potentially useful in a number of ways. First, a profile of the primary risk factors offers an understanding of who is at risk for criminal victimization. This may be useful in targeting interventions. Second, a profile of risk factors, when combined with theories of crime, can lend insights into the social process behind criminal activity, allowing for a better understanding of the nature of crime and ultimately leading to more effective anti-crime policy.

CONCEPTUAL FOUNDATIONS OF RISK FACTORS FOR CRIME AND VIOLENCE

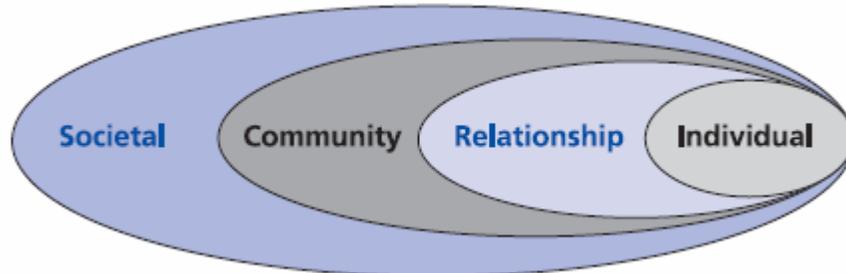
3.3 Economists have traditionally conceptualized criminal behavior as a rational decision made taking into account the expected benefits compared to the expected costs.¹ The economic approach tends to lead to a focus on factors which directly affect the costs and benefits of participating in criminal activity: the relative returns of crime versus legal activities, the probability of being apprehended and convicted, and punishments for those convicted.

3.4 The analysis in this chapter seeks a wider perspective. A useful approach to conceptualize the various influences on crime and violence is the so-called ecological model (see Figure 3.1), which is broad enough to encompass a wide variety of theories from economics, sociology, and public health. The ecological model identifies four levels of influence on criminal and violent behavior. Individual factors include characteristics such as education level, marital status, and biological endowments. Relationship factors cover relations with peers, partners, and family. At a higher level, community factors

¹ A long line of research in this framework begins with Becker (1968).

include the broader context of social relationships in environments such as schools and neighborhoods. Finally, at the broadest level, there are societal factors such as cultural norms and economic conditions that also influence violence (WHO, 2002).

Figure 3.1: Ecological Model for Understanding Crime and Violence



Source: World Health Organization (2002).

3.5 This chapter presents two types of analysis. First, it shows results from a macro-analysis of risk factors for crime, using country-level data from around the world. Second, it provides insights from an analysis of household-level crime data in three Caribbean countries: Jamaica, the Dominican Republic, and Haiti.

MACRO ANALYSIS OF RISK FACTORS FOR CRIME IN THE WORLD AND THE CARIBBEAN

3.6 Macro-level analyses can reveal how risk factors are associated with crime at the national level. These types of studies fall into two categories. Some studies examine trends over time in national crime rates in a single country and note how they are associated with changes in country-level variables. Others look at variation in crime rates across countries to determine how various factors may influence crime, sometimes drawing on panel data with multiple observations over time for particular countries.

3.7 The different approaches have various advantages and disadvantages. While a study of time trends in a single country can be tailored to take into account the particular circumstances of that country, in most circumstances it is difficult to infer a causal relationship between other variables and crime with national data from just one country. Studies across countries can exploit the large variation in crime rates and other conditions across the world. Cross-country studies suffer from several weaknesses, however. Cross-country crime data is often of questionable comparability; differences in official crime rates may reflect differences in definitions and reporting. Additionally, at best cross-country studies produce estimates of average relationships, which may be of limited relevance to individual countries. In principle, cross-country studies based on panel data should be of greatest interest. Only a few countries, however, produce long time series of crime data.

3.8 A few single-country studies have been conducted in the Caribbean. Ellis (1991) examines annual crime rates in Jamaica for the period 1950-84 and finds that high crime in the country is associated with periods of low economic growth, high unemployment,

and a large cohort in the 14-24 age group. He concludes that increases in crime in Jamaica can largely be explained as the consequence of economic decline, aggravated by changes in the population's age structure. Albuquerque and McElroy (1999) look at the case of Barbados and conclude that increased levels of property and violent crime there have been associated with worsening economic conditions and increased levels of visitor density.

3.9 This section presents a series of graphical bivariate comparisons of crime rates across countries with various risk factors and then proceeds to multivariate regression analysis. All the analysis is based on crime data collected from national police authorities by the United Nations Office of Drugs and Crime (UNODC) through its Crime Trends Surveys. The UNODC dataset used for the regression analysis includes three Caribbean countries—Barbados, Jamaica, and Trinidad and Tobago—along with 58 other countries. For the bivariate comparisons, the UNODC data is supplemented by additional data from other sources for some Caribbean countries (see data source description in Annex 3.1).

3.10 The analysis here is carried out using both homicide and robbery data. Many cross-country studies use only homicide data, because differences in reporting rates and definitions are thought to be minimal for this crime. Robbery is included as well to add a perspective on how risk factors for violent crime and property crime may differ.²

3.11 Figure 3.2 shows a collection of scatter plots for murder and robbery rates against various variables. For all the plots, each point corresponds to a country, and points corresponding to Caribbean countries are labeled. The number of points in each plot varies because some variables are only available for a selection of countries. In particular, the number of Caribbean countries for which robbery data is available is limited.

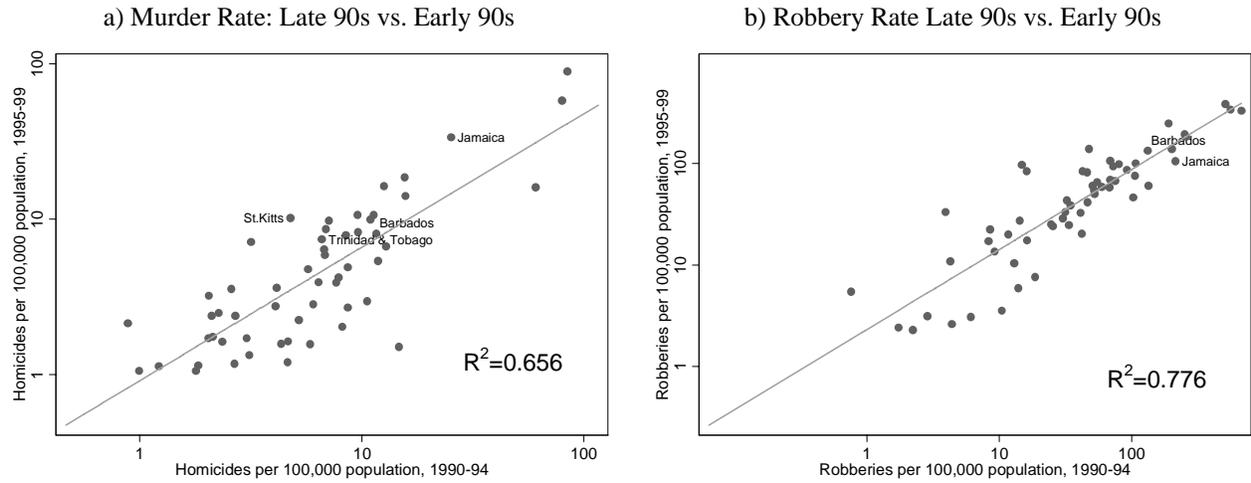
3.12 One pattern that is clear from the scatter plots is that both homicide and robbery rates exhibit strong inertia over time. In other words, countries that experience high crime rates in one period are very likely to have high crime rates in the following period. This can be seen in panels (a) and (b) of Figure 3.2, which show homicide rates in the period 1995-99 compared to those during the period 1990-94. There are several reasons why crime may show such persistence. First, criminal activity may become more attractive to individual criminals both as they become more experienced and as their legal labor market opportunities diminish with the accumulation of criminal records. Second, a society may fall into a high crime trap if, with a rise in criminal activity, increased social interactions with criminals reduce the social cost of criminal behavior. Likewise, if the legal system fails to respond to a spike in the incidence of criminal behavior, so that the perceived likelihood of arrest and conviction decreases, future criminal activity may rise as well. The inertia of crime rates also may reflect a link between crime and other variables which are persistent over time. Finally, the inertia pattern may reflect correlation over time in the errors in the data for individual countries.³

² Robbery involves violence as well but can be considered a property crime with a violence component.

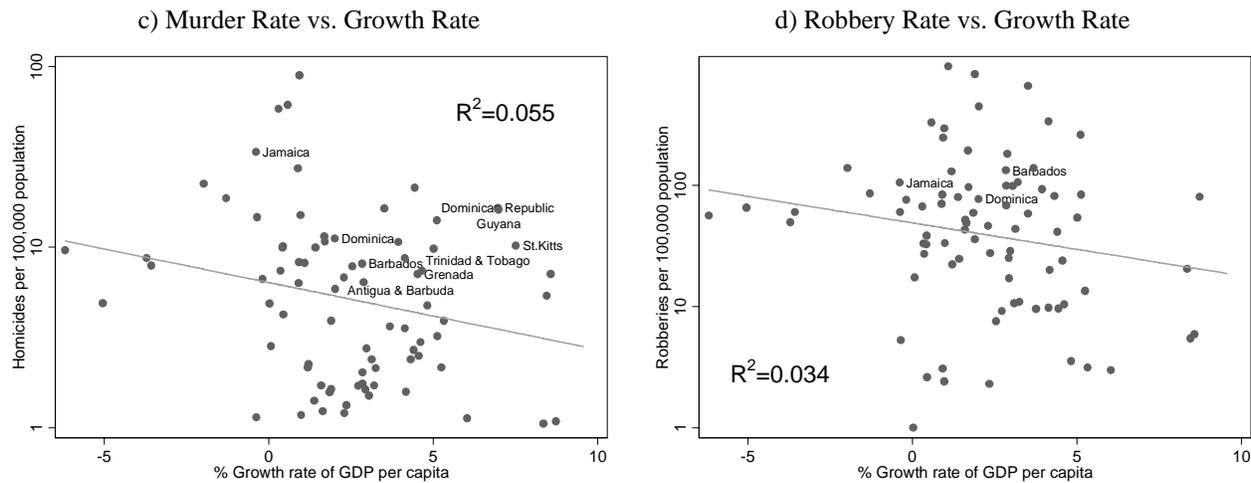
³ For discussion of some of the reasons for crime inertia, see Glaeser, Sacerdote, and Scheinkman (1996), Leung (1995), Sah (1991), Posada (1994), and Mocan, Billups, and Overland (2005).

Figure 3.2: Cross-Country Correlates of Crime

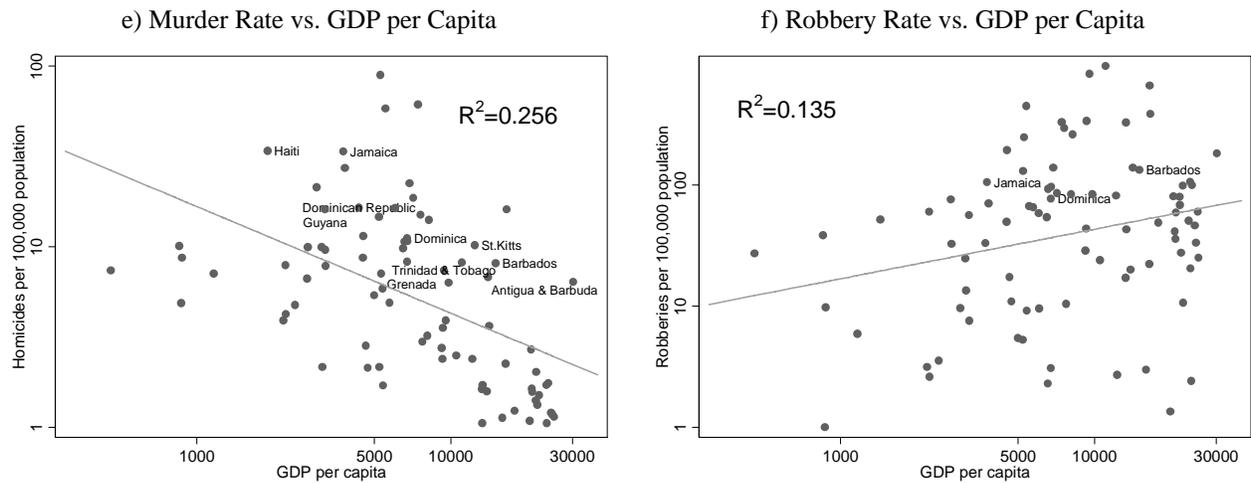
CRIME IS PERSISTENT OVER TIME



COUNTRIES WITH HIGHER GROWTH RATES HAVE LOWER CRIME RATES



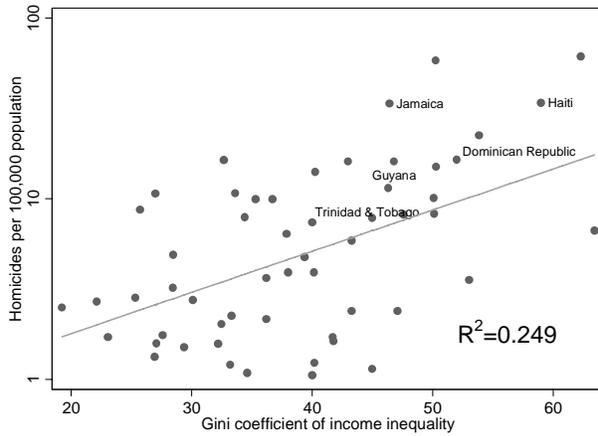
WEALTHIER COUNTRIES HAVE FEWER MURDERS AND MORE ROBBERIES



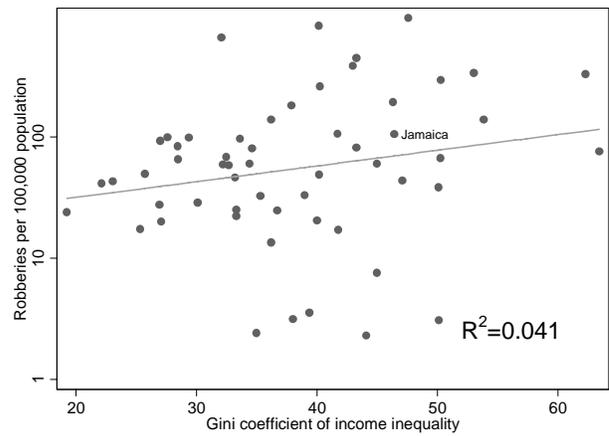
(continued) Figure 3.2: Cross-Country Correlates of Crime

COUNTRIES WITH HIGHER INEQUALITY HAVE HIGHER MURDER AND ROBBERY RATES

g) Murder Rate vs. Gini Coefficient

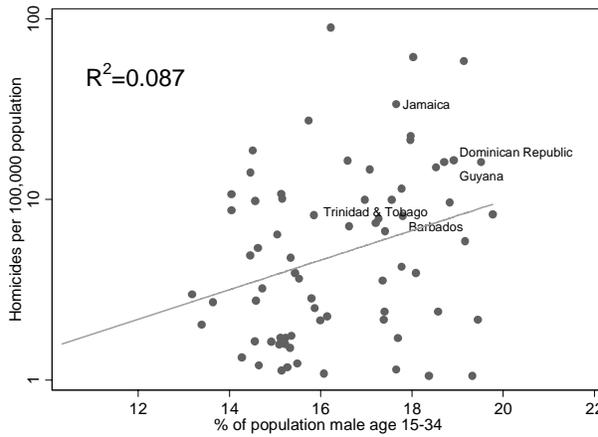


h) Robbery Rate vs. Gini Coefficient

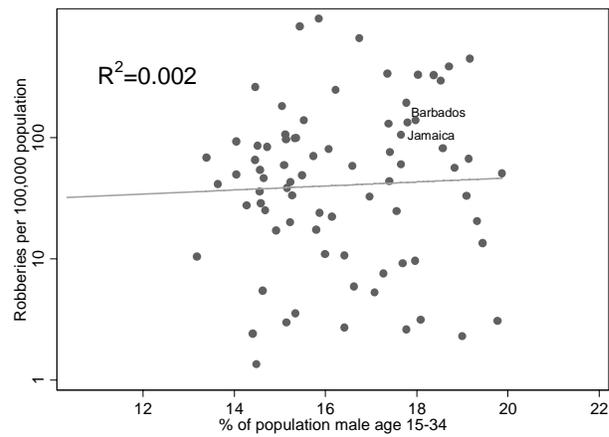


COUNTRIES WITH MORE YOUNG MEN HAVE HIGHER MURDER RATES

i) Murder Rate vs. Young Men in Population

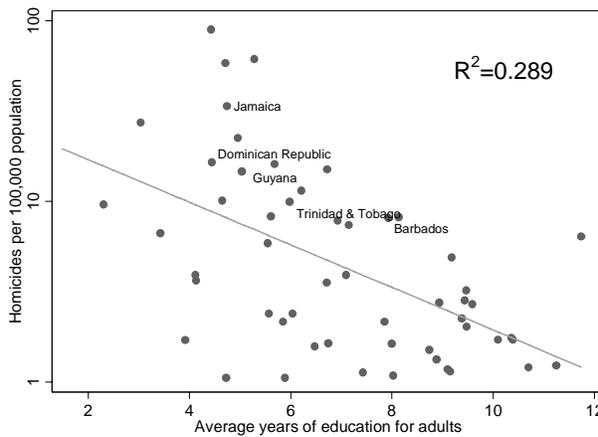


j) Robbery Rate vs. Young Men in Population

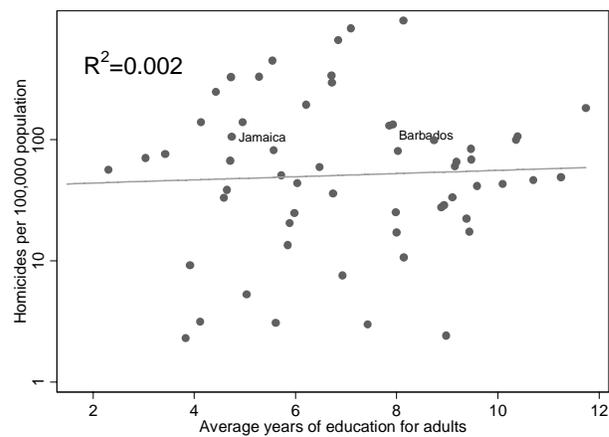


MORE EDUCATED COUNTRIES HAVE LOWER MURDER RATES

k) Murder Rate vs. Average Adult Education



l) Robbery Rate vs. Average Adult Education



Sources: Own analysis. UNODC data and other (see Annex 3.1 for discussion of homicide data source), Penn World Figures for growth rate in GDP per capita, Penn World Tables for GDP per capita in 1996 \$US, Barro and Lee (1996) for education; World Development Indicators for population data by age group.

3.13 Countries with higher growth rates have on average lower rates of both homicides and burglaries (see panels (c) and (d) of Figure 3.2). This may indicate that higher growth reduces crime, by increasing opportunities in the legal labor market for those who might otherwise choose to engage in criminal behavior. The Caribbean countries in the sample have crime rates that are in all cases above the line showing the international tendency by GDP growth rate. In other words, on average countries in the Caribbean have higher crime rates than countries with comparable growth rates.

3.14 Countries with higher average incomes tend to have lower murder rates and higher robbery rates (see panels (e) and (f) of Figure 3.2). As with the growth rate plots, these figures show that each of the Caribbean countries for which data is available has a murder or robbery rate above the line showing the international tendency by GDP per capita. Higher inequality, on the other hand, is correlated with both higher murder and burglary rates.

3.15 The remaining panels of Figure 3.2 show overall correlations between homicide and two other factors that are often linked to high level of violence. Higher murder rates are found in countries with larger populations of young men and those with lower average adult education levels. Robbery rates, however, show no correlation with education levels or youth populations.

3.16 To attempt to isolate which variables may be driving crime rates, multivariate regression analysis is applied to the data. This work draws upon similar analysis conducted by Fajnzylber, Lederman, and Loayza (2000) (referred to as FLL in subsequent references) for the 1970-1995 period. Like FLL, this analysis is based on an unbalanced panel dataset from all countries of the world with available data. Each observation is the average of values over a five-year period for a particular country.

3.17 The regression analysis presented here differs from the FLL analysis in several ways. First, it incorporates the updated United Nations crime data from the period 1995-99. (The second half of the 1990s is the last five-year period for which the U.N. data is available for a large number of countries.) Second, it uses the simpler OLS regression approach, rather than more elaborate regression techniques.⁴ Table 3.1 presents results from the basic country-analysis. The explanatory variables used are the lagged value of the dependent variable, the growth rate of GDP per capita, average income per capita (in logs), and the Gini coefficient of income inequality.

⁴ FLL employ the Arellano and Bond generalized method of moments (GMM) estimator which attempts to control for endogeneity of crime determinants by instrumenting the explanatory variables with lagged values of the explanatory variables.

Table 3.1: Cross-Country Analysis - Basic Regression Results

Variable	(1)	(2)	(3)	(4)
	Homicide rate	Robbery rate	Homicide rate	Robbery rate
Constant	0.914 ** (0.458)	-1.107 ** (0.531)	0.998 ** (0.453)	-1.108 ** (0.527)
Lagged dependent variable	0.833 ** (0.038)	0.902 ** (0.031)	0.808 ** (0.039)	0.891 ** (0.032)
Growth rate	-0.017 * (0.010)	-0.026 ** (0.012)	-0.017 * (0.010)	-0.026 ** (0.011)
Average income (log)	-0.089 ** (0.040)	0.174 ** (0.050)	-0.094 ** (0.039)	0.178 ** (0.050)
Income inequality	0.003 (0.005)	0.003 (0.005)	0.002 (0.005)	0.002 (0.005)
Caribbean dummy			0.343 ** (0.139)	0.264 * (0.148)
Number of countries	61	54	61	54
Number of observations	182	179	182	179
R-squared	0.746	0.878	0.754	0.880

Source: Own analysis. UNODC for homicide and robbery rates; Penn World Figures for growth rate in GDP per capita and average income (per capita GDP); Deininger and Squire (1996) and World Development Indicators 2005 for Gini coefficient of income inequality. Notes: All regressions are OLS.

3.18 Like the bivariate comparisons, the regression results show that there is a strong element of inertia to crime rates and that higher crime rates are associated with lower growth rates. The regressions also show the same result as the scatter plot for average income: wealthier countries have lower homicide rates and higher robbery rates. In particular, the results from the simplest specifications show that a 10 percent increase in average income is associated with a decline of 0.89 percent in the murder rate and a 1.74 percent increase in the robbery rate. The effect of inequality on crime implied by the regression results, however, is not statistically significant after controlling for past crime, growth, and GDP per capita.

3.19 Columns (3) and (4) of Table 3.1 display results using the basic specification plus a Caribbean dummy. Those results show that for Caribbean countries in the panel sample (Barbados, Jamaica, and Trinidad and Tobago), homicide rates have been 34 percent higher and robbery rates have been 26 percent higher than in countries with comparable income per capita, growth rates, inequality, and past crime rates. Table A3.2 (in the Appendix) shows results from specifications which also include the average level of adult education and the percentage of the population made up of young men (age 15-34). Neither shows a statistically significant effect on crime rates. The correlation of higher crime rates with lower education levels and large number of young men, apparent in the scatter plots, does not hold after controlling for past crime rates, the growth rate, and average income.

3.20 Overall, the cross-country analysis can be summarized as follows:

- There are strong inertia effects to crime, which means that once crime rates are high, it may be difficult to reduce them. At the same time, crime-reduction efforts in the short-term are likely to have huge long-term gains.
- As countries develop, violent crime tends to decrease, while property crime increases.
- Inequality is associated with both violent crime and property crime, but the relationship does not hold after controlling for other variables.
- Caribbean countries show similar patterns to the world as a whole, but have higher crime rates overall.

3.21 Why do Caribbean countries have higher crime rates on average? The obvious candidate reason is drug trafficking. Although the countries of the Caribbean are very diverse along many lines, one thing they have in common is that nearly all are used as points for drug transshipment. De Albuquerque and McElroy (1999), among others, have noted that the rise of crime in the Caribbean over time coincides with the expansion of the narcotics trade. The U.S. Government's most recent annual report on the international drug trade, Department of State (2006), lists nearly every country in the Caribbean as a "transshipment point."⁵ Large quantities of drugs are regularly seized by law enforcement in most Caribbean countries; of the top 20 countries in the world in terms of drugs seizures per capita, half are in the Caribbean.⁶ The Dominican Republic, Haiti, Jamaica and the Bahamas are all identified by the U.S. report as "major" drug transit countries. While the drug trade clearly does not explain all variation in crime rates across countries, it is undoubtedly an important contributing factor to crime and violence in the region.

3.22 It is very important to recognize the limitations of regression analysis. First, regression analysis provides estimates of average relationships between variables. In the case of cross-country regressions, the relationships are averages across countries of the world. There are inevitably exceptions which do not fit the average pattern. To take just one example, while the regression results show that higher growth rates are associated with lower crime rates, some countries experience both rapid growth and high crime rates, as has been the case for Trinidad and Tobago in recent years. But the regressions do control for other factors, which helps clarify the relationship between crime and growth.

3.23 It should also be noted that with all the relationships presented here there are multiple possible relationships between the variables. It may be the case that causality runs not from growth rates to crime but in the other direction, so that a higher rate of violence tends to decrease growth. Viewed from this perspective, the growth rates of Caribbean countries are higher than would be predicted based on their crime rates alone.

⁵ Specifically, the report lists the following countries as transshipment points: Antigua and Barbuda, Aruba, the Bahamas, Barbados, Cuba, Dominica, the Dominican Republic, Grenada, Guyana, Haiti, Jamaica, the Netherlands Antilles, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago. Given that such a large number of Caribbean countries are classified as transshipment points, it is not possible to introduce a "drug transshipment" dummy variable in the cross-country regressions; such a dummy would be highly collinear with Caribbean region dummy.

⁶ This statement is based on analysis of the UNODC's drug seizure database.

It is also possible that the negative correlation between growth rates and crime rates is due to a third factor which affects both growth and crime.

3.24 Econometrics offers a variety of strategies for attempting to distinguish causal relationships from mere correlations. Unfortunately, convincing applications face a number of hurdles, foremost among them being data requirements that are difficult to fulfill for cross-country crime regressions. The analysis in this chapter does not apply such techniques but instead uses the simplest form of regression analysis, ordinary least squares. Rather than making hard claims of causality, the analysis in this chapter is presented in the spirit of providing suggestive evidence on possible relationships between crime and other variables. Note that the primary finding from the cross-country analysis—the fact that the crime rates of Caribbean countries are above the rates predicted by purely economic variables—does not rely on any causal story, but rather it suggests that given its economic performance, the Caribbean's crime rates are on average higher than what would be expected.

3.25 In Chapter 4 of this report, cross-country analysis is presented on the possible effects of growth on crime. In that case, the focus is necessarily on identifying a causal relationship, but the obstacles to doing so are no less daunting.⁷ Also, the identification of any "causal" effect of crime on growth depends on the assumption that past levels of crime are significantly different from current levels of crime, and in any case, this technique relies on technical statistical properties of the data rather than on an intuitive or conceptual identification of the causal effect of crime on growth. Consequently, readers should be modest in drawing strong causal conclusions from this analysis as well.

RISK FACTORS FOR CRIME AT THE HOUSEHOLD LEVEL: EVIDENCE FROM THREE CARIBBEAN COUNTRIES

3.26 While macro-level estimates are useful for providing a sense of average relationships between crime and other variables, country-specific studies based on microdata are useful for examining the circumstances in individual countries. Micro-level studies also allow for a more detailed examination of risk factors at the community, relationship, and individual level. This section considers risk factors for crime victimization, using victimization data collected at the household level in three countries: Jamaica, the Dominican Republic, and Haiti. The victimization data for Jamaica comes from the national population census conducted in 2001. The Dominican Republic data is from a household survey in 2005, matched with information from the national census at the province level. Finally, the Haiti analysis is based on more limited crime victimization questions from a 2001 survey.

3.27 For all three countries, the micro-level risk factor analysis uses probit regressions, with crime victimization as an outcome variable and household characteristics as explanatory variables. The set of explanatory variables varies by country but includes both household and community-level characteristics. Complete

⁷ The growth-on-crime analysis employs the Arellano-Bond estimator that is sometimes used, particularly in the cross-country literature, to identify a causal relationship. When measurement error in the data is likely to be substantial, as is typically the case for crime data, the estimator is less reliable.

regression results from each country can be found in Annexes 3.2, 3.3, and 3.4. Results from the regression analysis are summarized in Table 3.2 and described below.

Table 3.2: Summary of Micro-Analysis of Risk Factors for Criminal Victimization

	Jamaica		Dominican Republic	Haiti
	Violent Crime (Murder)	Property Crime (Robbery)	Property Crime (Burglary/Mugging)	Property Crime (Burglary/Mugging)
<i>Household-level</i>				
Consumption/income	-	+	+	+
Female-headed	+	-	not sig.	not sig.
Young men	+	-	not sig.	not sig.
Education level	+	-	+	not sig.
<i>Community/province-level</i>				
Consumption/income	-	+	not sig.	n/a
Inequality	not sig.	not sig.	-	n/a
Female-headed	+	+	-	n/a
Young men	+	+	+	n/a
Education level	-	-	+	n/a
Population density	+	-	+	n/a
Urban	+	+	+	+
Reporting rate	-	-	not sig.	n/a

Source: Own analysis.

Notes: Table entries indicate results from multivariate regression results for each variable, for analyses from different countries and crimes. A plus sign indicates a positive relationship, a negative sign indicates a negative relationship, “not sig.” indicates that results for the variable in question were not significant at the 10 percent level, and “n/a” indicates that the variable was not available for a particular country. See Annex 3.2, 3.3 and 3.4 for detailed results. For Jamaica, results shown for violent crime are for murder and those shown for property crime are for robbery.

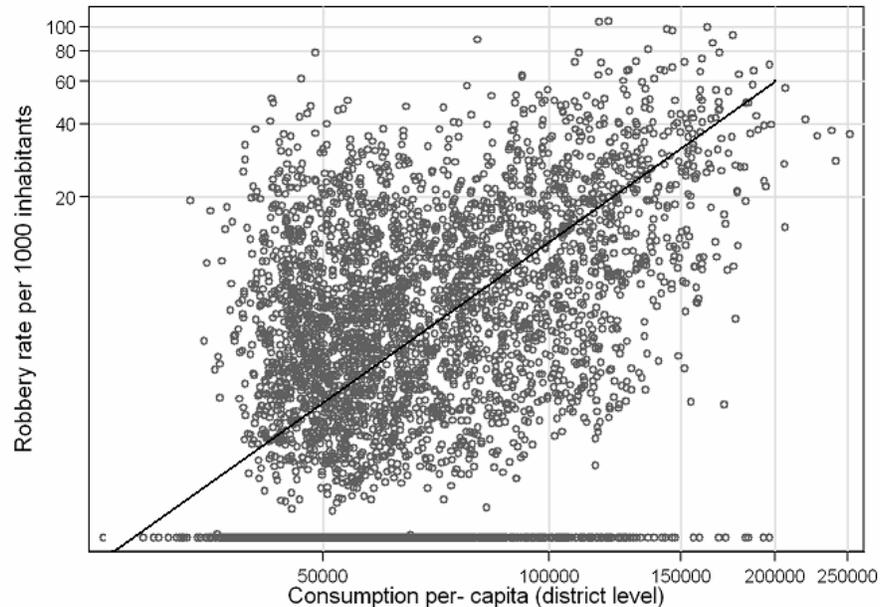
Economic Factors

3.28 For Jamaica, the patterns of crime victimization by consumption level—of both households and communities—mirror the trends in the cross-national data: increases in wealth are associated with lower levels of violent crime and higher levels of property crime. In Jamaica, wealthier household are much more likely to experience property crime (robbery and the theft of agricultural goods), while poorer households are more at risk to be victims of all violent crime. Additionally, households in poorer areas, even after controlling for the household-level consumption, suffer higher risk of murder and wounding. On the other hand, households in wealthier areas are more likely to be victims of property crime. This last relationship can be seen in Figure 3.3, which shows a scatter plot of robbery rates versus mean consumption by neighborhood (census enumeration district.)

3.29 In the Dominican Republic, better off households are more likely to suffer from all forms of theft. Even after controlling for household-level welfare, all types of theft occur more frequently in wealthier provinces. Provincial-level unemployment is also associated with higher levels of personal theft.

Figure 3.3: Robbery Rates vs. Mean Consumption by Neighborhood

Property Crime is More Prevalent in Wealthier Areas in Jamaica



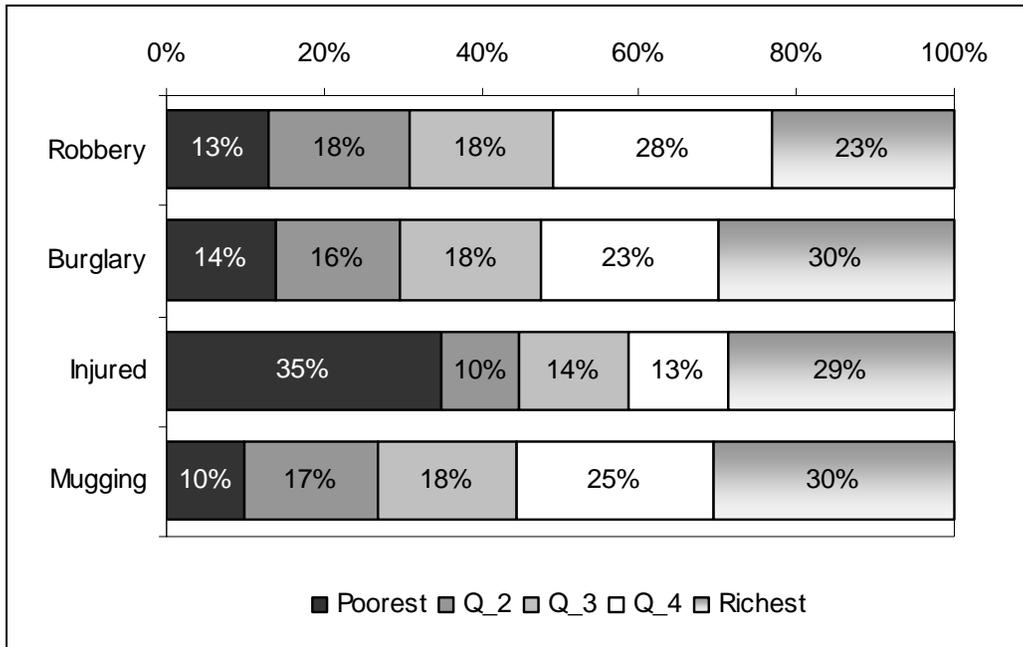
Source: Analysis of 2001 Population and Housing Census.

Notes: For the purposes of the figure, observations with values of zero for robberies were replaced with the smallest value in the sample.

3.30 In Haiti, wealthier households are more likely to be victims of both burglary and mugging. The distribution of victimization by quintile is shown in Figure 3.4. Robberies, burglaries, and muggings disproportionately strike Haitians in the top two quintiles, who are most likely to have property of value. Personal injury victims, however, are concentrated in both the top and bottom quintiles.

3.31 The analysis does not find a consistent relationship between crime and inequality. In the multivariate regressions, all but one of the crimes show no relationship to community inequality levels; only the theft of agricultural products from farms is found to be more prevalent in higher inequality areas. Counter to expectations, in the Dominican Republic vehicle theft and burglary occur less often in provinces with higher inequality. These findings differ from those from a similar study in South Africa (Demombynes and Özler, 2005) which found local inequality to be correlated with both violent and property crime, after controlling for plausible proxies for the returns from crime and non-crime activities.

Figure 3.4: Distribution of Victimization by Crime and Quintile in Haiti



Source: Own analysis of ECVH 2001.

Note: The figure shows the percentage of victims of each crime who are in each income quintile.

Demographic Factors

3.32 In Jamaica, households in communities in which female-headed households make up a larger share of the population are more likely to suffer from murder, shooting, and robbery. This finding is compatible with sociological theories that predict that female-headed households are more prevalent in areas with breakdowns of social ties, which may lead to more violent crime. The opposite relationship holds, however, for mugging in the Dominican Republic, and across all three countries there is no consistent relationship at the household level between victimization and female headship.

3.33 The presence of young males in Jamaican households is associated with higher rates of violent crime victimization, and the presence of more young males in the district is associated with higher homicide rates. More males in the household, however, are also associated with lower rates of property crime, which suggests that they may serve a protection function for the household, even though they are highly likely to be victims themselves.

3.34 In the Dominican Republic, the presence of young males in the household is not significantly associated with crime victimization, but the presence of more young men in the province is strongly associated with all forms of property crime captured in the survey. In Haiti, however, there is no clear relationship between age structure and the likelihood of criminal victimization.

Box 3.1: Haiti's Entrepreneurs of Violence

Political violence is not a novelty in Haiti's history, and it neither started nor ended with the Duvalier regime, although this regime's violent record was unprecedented. "Papa Doc" Duvalier (1957-71) began to institutionalize political violence soon after he was elected in 1957, by establishing a force of *cagouards* ("hooded men") charged with silencing supporters of rival candidates (who challenged the election results), as well as other dissidents, which gradually developed into a more extensive network of spies for the Duvalier regime.

More recently, Haiti's democratic experience has failed to provide capable and stable governance. Initially, democracy was brutally repressed by the army and their supporters, using armed paramilitary groups that have been a feature of Haitian politics since Duvalier's *macoutes*. From Aristide's return in 1994, democracy was undermined by deep conflicts among erstwhile democratic allies, resulting in a political stalemate that lasted almost from Aristide's return in 1994 until his departure in 2004, and which undermined economic growth and state building alike. Moreover, it transformed important parts of the democratic movement, the urban popular organizations, into agents for the Lavalas party, using brutal violence in struggles over territorial control and state favors. With Aristide's departure, some of these groups are bent on undermining the political process, in collusion with some former political leaders. Their area of operation and influence is in the slums and "popular areas" that provide a rich reservoir of potential recruits. Violence and insecurity in these areas is pervasive and these "entrepreneurs of violence" are capable and willing to engineer violence for political or other purposes, as the line between political and criminal violence has become increasingly blurred.

Source: "Urban Violence in Haiti: A rapid assessment of socio-economic, political, and institutional causes of urban violence in Haiti." (World Bank, 2005)

Education

3.35 Jamaican households in less educated areas are more likely to be victims of all crimes. This may reflect the fact that the less educated have worse legitimate wage-earning opportunities and hence the supply of potential criminals in such areas is larger. Patterns are less consistent for the education level of the household itself. Households with more educated adults suffer slightly more shootings and woundings but fewer robberies relative to the less educated.

3.36 The Dominican Republic analysis shows somewhat different results. Households living in more educated provinces are at greater risk of muggings, while more educated households are slightly more likely to be victims of burglary and mugging. The Haiti results show no pattern by education level of household members.

Urban vs. Rural and Population Density

3.37 In all three countries, crime is chiefly an urban phenomenon. In both Jamaica and the Dominican Republic, rates of victimization are highest in urban areas for nearly all crimes, (an exception is crop and livestock theft in Jamaica, which is necessarily more likely to occur in rural areas). These results hold even after controlling for population density. In Haiti, robbery, burglary, and mugging rates are highest in urban areas. All the crimes captured in the victimization survey in the Dominican Republic are more

prevalent in areas with higher population density. In Jamaica, however, population density is positively associated with violent crime but negatively associated with property crime.

Crime Reporting Prevalence

3.38 An important finding of this study is that in Jamaica, the reporting prevalence is negatively associated with crime rates. In other words, crime rates (as measured by victimization data) are higher where a lower percentage of crimes are reported to the police. This has multiple implications. First, this suggests that official police data distort the true geographic profile of crime, because official data are biased downwards for higher crime areas. Second, the reporting rate can reasonably be plausibly be interpreted as a measure of confidence in the police, as people will be more likely to report when they trust the police and believe they will respond. If this interpretation is correct, lack of trust and confidence in the police is lower in areas with higher local crime rates.

3.39 This correlation could be explained by a number of different causal relationships. One possibility is that lower trust in the police leads to higher crime, because the police are less effective when they cannot count on the support and assistance of the population they serve. But causality could well be in the reverse direction, with higher crime leading to lower levels of trust in police. This could be the case if people form their levels of trust based on their observations of local crime levels. Finally, both distrust and high crime rates could be correlated with a third factor not controlled for in the regression analysis. An unobserved variable, like a high level of social exclusion, could both drive high crime rates and inspire lower confidence in the police.⁸

Summary of Micro-Analysis

3.40 Overall, several key points emerge. Although the precise relationship varies by country, local economic conditions are associated with crime. In particular, wealthier areas are consistently more likely to be the targets of property crime. In Jamaica, where information on both violent crime victimization and local conditions are available, violent crime strikes poor more than rich neighborhoods. Local inequality and crime victimization do not, however, have a clear relationship across countries.

3.41 The results related to demographic characteristics are mixed. Everywhere, crime is concentrated in urban areas, and crime rates are higher where there is a larger population of young males in the Dominican Republic and Jamaica (for violent crime). Areas with large number of female-headed households in Jamaica suffer higher crime rates, but that relationship does not hold for the Dominican Republic.

3.42 In Jamaica, community levels of trust in the police, as proxied by reporting rates, are related to crime rates. This suggests that measures that increase the trust in police, or address the root causes for the lack of trust in the police, may help reduce crime.

⁸ Soares (2004) examines crime reporting rates at the national level, finding that reporting rates are highest in countries with longer periods of institutional stability, more police per capita, and lower levels of corruption as measured by subjective indices.

3.43 It is important to note that the explanatory power of these regressions is fairly low.⁹ While many risk factors are strongly correlated with crime victimization, it is still largely a random process from the perspective of potential victims. Consequently, the costs of the threat of crime are universal.

POLICY IMPLICATIONS

3.44 The analysis in this chapter points to a number of potential policy conclusions. First, the persistence of crime over time shown by the cross-country regressions suggests that efforts to reduce crime in the short run may have very large long-term effects. Second, while the direction of causality between economic conditions and crime is subject to debate, the weight of evidence suggests that increasing levels and growth rates of per capita income reduce violent crime. At the same time, rates of property crime are higher in both countries and communities with higher incomes.

3.45 Additionally, the presence of large populations of young men is associated with higher crime rates in communities. This suggests strongly that crime prevention interventions should be targeted at young men.

3.46 Finally, the fact that crime rates are higher in areas in Jamaica where trust in the police is lower suggests that policies that improve trust in the police, or address the underlying causes of a lack of trust in the police, can help reduce crime. Policies which improve the transparency of the police, reduce corruption, and make the police more accountable and accessible to citizens may be effective routes to bringing down criminal activity.

⁹ The highest pseudo R-squared values are 0.077 in Jamaica (for crop and livestock theft), 0.084 in the Dominican Republic (for mugging), and 0.068 in Haiti (for mugging). R² values refer to the percentage of variation in the dependent variable which can be explained by the independent variables in the regression. In other words, the higher the value of the R², the better job the explanatory variables do in explaining the dependent variable.