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WHO BEARS THE BURDEN OF CRIME IN COLOMBIA?

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Abstract

This paper investigates the distribution of crime and violence across victims in Colombia. Property and violent crimes as well as incidents of domestic violence are considered. The paper shows that rich households bear a disproportionate share of the burden of property crime: they are more likely to be victimized, to modify their behavior because of fear of crime, to feel unsafe in their cities, and to invest in crime avoidance. Homicides are borne disproportionately by the poor and kidnappings by the rich. Finally, poor, and in particular uneducated, individuals bear a disproportionate share of domestic violence.

1. Introduction

Many studies have sought to understand the main factors underpinning the dramatic escalation of violent crime in Colombia, but only few have attempted to investigate how the heightened crime levels have differentially affected the different sectors of the Colombian population. Little is known, then, about the distribution of crime and violence across victims and about how individuals and households have responded to the escalation of violence.

This paper addresses two main issues. First, it investigates the distribution of crime and violence across victims. And second, it investigates the different strategies used by households to deal with the higher levels of crime and violence, emphasizing the differences among income groups in their propensities to invest in crime avoidance. Needless to say, if one wants to know who bears the burden of crime and violence, one must necessarily take into account the direct welfare losses from exposure to episodes of crime and violence, and the amount of resources allocated by households to prevent crime (in the form of both time and outright expenditures). While one might observe, for example, that rich households are less likely to be victims of a crime, this might just be a reflection of their much larger expenditures in crime avoidance.

We find that, at least in the main metropolitan areas of the country, rich households bear a disproportionate share of the burden of property crime. They are more likely to be victimized, to modify their behavior because of fear of crime, to feel unsafe in their cities, and to invest in crime avoidance. This result may explain the growing sense of malaise among rich and middle-class Colombians, many of which have left the country while others loudly demand a firmer stance of the government against crime and violence.

In contrast, poor, and in particular uneducated, individuals bear a disproportionate share of domestic violence. Women from the bottom quintile of the income distribution are 15 percentage points more likely to suffer from domestic violence than women from the top

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quintile. More importantly, each year of schooling reduces the probability of domestic violence by more than one percentage point. It should be noted that domestic violence is much more prevalent than criminal violence: it affects almost half of Colombian households while criminal victimization affects less than ten percent of them.

Section 2 of this paper presents a brief overview of crime and violence in Colombia. Section 3 describes the main sources of data. Section 4 lays out the empirical strategy and presents the empirical results. Section 5 presents some caveats. And Section 6 concludes.

2. Crime and Violence in Colombia: an overview

The magnitude of violent crime in Colombia is staggering. The homicide rate in this country is three times higher than in Brazil or Mexico, and ten times higher than in Argentina or the United States. Even compared to other Latin American countries, where violent crime has been increasing steadily for years, violence in Colombia appears disproportionate (see Figure 1). Only El Salvador and Jamaica have comparable homicide rates and no other country in Latin America (or in the world, for that matter) has comparable kidnapping rates.

But Colombia has not always been a violent country. In the early 1970s, the homicide rate in Colombia was not very different from that of its neighboring countries. Starting in the late 1970s, the homicide rate escalated dramatically and by the early 1990s had more than tripled (see Figure 2). At its peak in the early 1990s, the homicide rate reached epidemic proportions in some cities. Over four in a thousand individuals were murdered in Medellín in 1991. Other metropolitan areas, notably Cali and Bogotá, experienced comparable levels of violence during the same period.

Since the mid-1990s, the homicide rate in the main metropolitan areas of the country has been falling. By contrast, kidnappings have escalated dramatically during the same period. Recent statistics from the Colombian National Police show that kidnapping rates have grown at an annual rate of almost 25 percent since 1995. According to an oft-cited

figure, 60 percent of all kidnappings in the world take place in Colombia. Approximately half of these kidnappings are attributed to leftist guerrillas, but this proportion can be much higher.

Surprisingly, the levels of property crime in Colombia are not exceptional. In a recent paper, Gaviria and Pages (2000) show that the percentage of urban households that had at least one member victimized during 1998 is not greater in Colombia than in Latin America as a whole. This figure is based on data from the Latinobarometer, a public opinion survey covering the main urban agglomerations of 17 Latin American countries (see Figure 3). In the same vein, data from the International Victimization Survey show that burglaries, robberies and auto thefts are not more prevalent in Colombia than in various Latin American countries, including Argentina, Brazil and Paraguay (see Rubio and Levitt, 2000).

Most studies looking at the causes underlying the escalation of violent crime in Colombia underscore the role played by drug trafficking. Two different mechanisms are mentioned in this respect. First, the fight over the control of drug markets as well as the inherently murderous nature of the drug business caused an increase in the homicide rate. And second, the emergence of drug trafficking congested law enforcement institutions and contributed to the dissemination of criminal know-how, amplifying the initial effect and ultimately catapulting the level of violence to the staggering levels recorded at the beginning of the 1990s.[1]

Drug trafficking, and in particular the shift of the bulk of the coca production from Bolivia and Peru to Colombia, has also been linked to the increasing power and influence of leftist guerrillas. Since the beginnings of the 1990s, rebel organizations have been involved in drug trafficking, mainly through the taxation of coca production. Recently, and coinciding with the demise of the main drug cartels, these organizations began to actively participate in the processing and exportation of drugs. These activities have improved the financial situation of the guerrillas, allowing them to update their weaponry

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[1] See Gaviria (2000) for a detailed analysis of the many synergies affecting violence in Colombia.

and recruit more people. As a result, the guerrillas have adopted a more aggressive and proactive stance, turning a sleepy conflict into a civil war. But despite the escalation of the conflict, most homicides in Colombia still take place in the main urban areas of the country, away from the coca fields and the area of influence of the guerrillas.[2]

In Colombia, income inequality has deteriorated significantly during the last decade, bringing social justice issues to the fore and reinforcing the widespread belief that poverty and inequality underlie the high levels of violence of the country. This belief notwithstanding, the available evidence offers little support to the idea that poverty and inequality have played a significant role in the escalation of violence. For one thing, all studies investigating the determinants of violence across Colombian municipalities find a *direct* relationship between homicide rates and socioeconomic development.[3] Figure 4 shows, for example, that there is a positive connection between the homicide rate of a municipality and an index of living conditions based upon average access to public services and average dwelling characteristics. For another, many studies show that inequality, though positively correlated to homicide rates at the municipal level, explains only a small fraction of the differences in these rates both across municipalities and over time.[4]

This paper examines the relation between inequality and crime from another perspective: it focuses on what income groups bear most of the burden of crime and violence in Colombia, leaving aside the quest for the causes of the escalation of crime and violence.

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[2] In Colombia, one third of all homicides occur in the metropolitan area of Medellin, and almost half in the metropolitan areas of Bogota, Medellin, Cali and Barranquilla (9% and 30% of the country population, respectively).

[3] Montenegro and Posada (1995) finds a positive connection between homicide rates and GDP per capita at the department level, Sarmiento and Becerra (1998) find a positive connection between homicide rates and an index of living conditions at the municipal level, and Sanchez and Nuñez (2000) find a positive connection between homicide rates and tax receipts per head also at the municipal level.

[4] While Sanchez and Nuñez (2000) find a positive connection between the homicide rate and an index of land inequality, they also show that the latter variable can explain less than one percent of the cross-municipal differences in the former.

3. Stylized Facts: Danger, Fear and Retreat

In this paper, we use the Social Survey of Fedesarrollo to study the distribution of crime victimization across victims as well as the distribution of household coping and preventing strategies. The Social Survey began in September of 1999 and has since had two extra rounds: one in April of 2000 and other in September of 2000. The emphasis of the survey is on household finances, but the last two rounds of the survey included a few questions about crime victimization and household anti-crime strategies.

The first two rounds of the survey were restricted to the four largest metropolitan areas of the country: Bogotá, Medellín, Cali y Barranquilla. The last round was expanded to include the metropolitan areas of Cartagena, Bucaramanga, Ibague and Manizales. The combined population of the eight metropolitan areas included in the last round is about 15 million people--approximately 37 percent of the country's total population and 60 percent of the country's urban population. Population weights were used throughout in order to assure representativeness, but the non-weighted results do not differ substantially from the weighted ones.

Table 1 presents the means of a few variables of interest included in the last round of the survey. Almost 23 percent of the respondents report that at least one household member was victim of a crime during the six months prior to the survey, 50 percent report feeling unsafe in their cities, and three percent that at least one household member was victim of a violent crime.[5] Six percent of the household heads were unemployed by the time of the survey and 18 percent of them are 60 or older. Finally, 29 percent of the households are female headed and 12 percent operate a business in their place of residence.

Table 2 presents mean victimization rates for all cities included in the last round of the survey. Bogotá has not only the highest overall victimization rates, but also the highest levels of perceived criminality (i.e., the highest fraction of people feeling unsafe). The

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[5] In our definition, a violent crime occurs if the respondent reports that any member of her household was a victim of an aggravated assault, a homicide or a kidnapping. The survey doesn't distinguish between

incidence of violent victimizations is also greater in Bogotá than in any of the other cities included in the survey. The latter result is somewhat perplexing, as official homicide rates are much greater in Medellín and in Cali than in Bogotá[6]. Cartagena stands out for its low victimization rates and Ibague for its low levels of perceived criminality.

Table 1. Summary Statistics

Variable	Observations	Mean
Household member was victim of any crime during the last six months	2629	22.9%
Household Head feels unsafe in his/her city	2629	49.2%
Household member was victim of a violent crime	2629	3.0%
Schooling of the head	2629	9.00
Head is unemployed	2629	5.5%
Female headed household	2629	29.3%
Head is older than 60	2628	18.1%
Head is younger than 25	2628	5.4%
Household has a business in its home	2629	12.2%
Household used to live in a different city	2629	9.4%

Source: Fedesarrollo Social Survey. Third Round, September of 2000.

Table 2. Victimization Rates by City

City	All crimes	Violent crimes	Feeling Unsafe
Medelín	16.2%	2.0%	32.7%
Barranquilla	20.3%	1.9%	28.4%
Bogotá	27.6%	4.5%	68.4%
Cartagena	8.6%	0.5%	14.8%
Manizales	15.9%	0.2%	21.3%
Bucaramanga	23.0%	2.9%	24.6%
Ibague	16.3%	1.1%	3.7%
Cali	26.0%	2.0%	59.0%
Average	22.9%	3.0%	49.2%

Source: Fedesarrollo Social Survey. Third Round, September of 2000.

Table 3 shows the propensity of households to engage in a variety of anti-crime strategies.[7] More than 80 percent of the respondents report that they do not go out at night because of fear of crime and more than 70 percent report that they don't go out alone for the same reason. 28 percent of the households have anti-theft devices, 37 percent

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robberies and common thefts.

[6] This discrepancy can be explained by different regional propensities to self-report violent victimizations or by a much greater incidence of assaults in Bogotá.

[7] These percentages are based on a series of questions to this effect included in the second round of the survey. The same questions were not included in the third round of the survey, which hampers any attempt to study the connection between the incidence of victimization and the propensity of household strategies to invest in crime avoidance.

participate in neighborhood watching programs, 21 percent have private guards and 25 percent avoid road trips for fear of crime.

Table 3. Coping and Preventing Strategies		
Variable	Observations	Mean
Don't go out at night	1184	80.4%
Don't go out alone	1184	72.2%
Bought an anti-theft device	1184	28.0%
Participate in neighborhood watching services	1184	36.7%
Have private guards in their house or condominium	1184	20.7%
Avoid road trips	1184	25.5%
Sum of all strategies	1184	2.420

Source: Fedesarrollo Social Survey. Second Round, April of 2000.

Since the Social Survey does not have reliable data on household income, we use data on household possessions of durable goods and dwelling characteristics to compute the relative position of each household in terms of socioeconomic status.[8] The procedure entails three main steps. First, we use principal components to compute a weighted average of the relevant household attributes, then we rank all households on the basis of this average and, finally, we use the corresponding ranking to compute quintiles of socioeconomic status.[9]

Most victimization and related surveys, including the Social Survey of Fedesarrollo, do not include specific questions about domestic violence. This neglect is unfortunate, if only because domestic violence is known to have devastating consequences upon the life prospects of the victims.[10] Seeking to fill this void, we use data from the latest round of the National Survey of Demography and Health (ENDS), which includes a module on

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[8] The survey asked whether any member of the household owns a TV set, a refrigerator, a washing machine, a personal computer, a car and a second home and whether the place of residence has access to water, sewage, electricity and a phone line.

[9] Principal Components are often used to approximate socioeconomic status in the absence of reliable income data. The ability of this type of indices to predict consumption has already been tested in Colombia. Two widely used proxy mean test indexes, Indice de Calidad de Vida and Sisben, use information about durable goods and dwelling characteristics to predict household welfare levels--see Sarmiento *et. al* (1996) and Vélez *et. al* (1999). Filmer and Pritchett (1998) show that in the case of India durable goods and housing attributes are observed with more precision than consumption expenditures, and that indicators of socioeconomic status based on these variables are less sensitive to temporary disturbances on household welfare than similar indicators based on consumption data.

[10] See Morrison and Loreto (1999) for are thorough discussion of the consequences of the domestic violence as well as of the policies to deal with it.

domestic violence against women. Insofar as domestic violence against woman is a good indicator of domestic violence in general, our results will be illustrative of who bears the burden of domestic violence in Colombia.

The last round of the ENDS survey was conducted in the first semester of 2000. More than 10,000 women were interviewed in both urban and rural areas of the country. We restrict the sample to women living in urban areas in order to allow comparability with the other victimization results. Table 4 presents descriptive statistics of the main variables of interest. More than 17 percent of the respondents reported having been victims of serious incidents of domestic violence, including assault, rape and threat with weapons. If we include less severe types of aggression, this percentage goes up to 40%. On average, respondents have 8.8 years of schooling and 34 years of age. Almost half of them hold regular jobs and 28 percent live in households headed by women.

Table 4. Summary Statistics of ENDS Dataset

Variable	Observations	Mean	Standard Deviation
Woman victim of domestic violence of any form	5679	42.8%	
Woman victim of serious domestic violence	5678	17.2%	
Age	5679	33.71	8.60
Years of Schooling	5679	8.80	4.06
Years of Schooling of Household Head	5678	7.57	4.40
Female Headship	5679	27.6%	
Woman working	5662	49.7%	

Such as we do with the Social Survey, here we also use information about durable goods and dwelling characteristics to approximate the relative stance of household members in terms of socioeconomic status. We classify household into three large groups: the bottom 20 percent, the top 20 percent and the rest. We don't use quintiles because the limited information available about household assets and dwelling characteristics don't allow us to clearly distinguish among middle-class households.

ethodology and Estimation Results

Economic models of crime focus mainly on the incentives faced by prospective criminals. These models offer clear predictions as to what determines the overall *level* of crime, but not as to what determines the *distribution* of crime across victims. In particular, these models offer few clues as to whether crime is disproportionately borne by the poor (or by the rich, for that matter). This and related questions are important not only because their obvious fairness implications, but also because their answers can provide some insights on the root causes of crime and violence and about the best public policies to fight these problems.

The empirical section of this paper has three distinct parts. The first explores the distribution of crime across victims, the second explores the distribution of household investments in crime avoidance and the third the distribution of domestic violence. Our empirical strategy relies on the following model:

$$Y_{ij} = c + X_{ij}\beta + \varepsilon_{ij},\tag{1}$$

where Y_{ij} is a dummy variable showing whether any member of family i who lives in city j was a victim of a crime during the six months prior to the survey, X_{ij} is a vector of observable household characteristics (including education of the household head and relative socioeconomic status) and ε_{ij} is an individual error term.

We use a Probit model to estimate equation (1). Linear probability models yield almost identical results, suggesting that our findings are robust to the choice of estimation method. City fixed effects are included in some specifications in order to control for unobserved city characteristics that may affect the distribution of crime across victims.[11] Our main findings are also robust to the presence of city fixed effects.

Distribution of Crime across Victims

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[11] One may argue that individuals living in safer cities are more likely to report minor incidents as instances of victimization. City-fixed effects control for this and related measurement problems.

Our main results concerning the effect of household relative socioeconomic status on the probability of victimization are summarized in Table 5.[12] The probability of victimization is very similar for the first three quintiles, slightly higher though not significantly so for the fourth quintile, and substantially higher for the top quintile. On average, the richest 20 percent of the population has a probability of victimization at least seven percentage points higher than the poorest 60 percent.[13] This result holds up after controlling for household attributes and city fixed effects, though the significance drops somewhat in the latter case.

Households that have a business in their place of residence are ten percentage points more likely to be victimized than households that do not. This finding indicates that crime is especially taxing on small entrepreneurs, thus suggesting that the economic effects of crime, from slower economic growth to stifled job creation, are large. Female-headed households have also a higher probability of being victimized, as do households whose head is older than 25. Surprisingly, households in which the head is unemployed are also more likely to be victimized, which may reflect a greater exposure to risk caused by job searching o loitering--the main activities of the unemployed. Whatever the reason, the fact is that a heightened victimization risk appears to be a hitherto unknown cost of being unemployed, at least during the current escalation of joblessness in Colombia.

Table 6 shows the effects of household attributes on the probability of being the victim of a violent crime. Households from the third quintile are less likely to be victims of violent crimes, which is caused by the higher incidence of homicides in the lowest quintiles and the higher incidence of kidnappings in the highest. The probabilities of having a household member murdered are 2.4 percent for households from the bottom quintile, 1.2 percent for households from the third quintile and 0.6 percent for households from the top quintile. The corresponding probabilities of having a household member kidnapped are 0.0 percent, 0.1 percent and 2.8 percent. Lastly, female-headed households are at least

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[12] All results are marginal effects evaluated at the mean of the dependent variable.

[13] According to the Colombian household survey for June of 2000, the annual income per capita of an urban household located in the 80th percentile is around US$ 7000 dollars. It follows that some households of the top quintiles ("rich") in Colombia can be poor by O.E.C.D. standards.

four percentage points more likely to be victims of a violent crime, which is partly driven by the fact that several of these households had the former head murdered.[14]

The Fear of Crime among the Better-off

Table 7 shows that households from the top quintile are much more likely to report feeling unsafe because fear of crime than households from any other quintile; a result consistent with the higher probability of victimization among the richest households mentioned above.[15] The results also show that households from the bottom quintile are at least ten percentage points less likely to report feeling unsafe and that households from the intermediate quintiles don't differ much on their propensity to report the same feeling.

Households headed by individuals 60 or older have a lower propensity to report feeling unsafe than households headed by younger individuals (perhaps because they don't have small or teenage children to worry about). By contrast, migrant households are more likely to feel unsafe in their new city of residence (perhaps because they have to face an unfamiliar and often hostile environment). Households in which the head is unemployed are also slightly more likely to feel unsafe, though the difference is not significant and very small when compared to the much higher propensity of these households to have a member victimized.

In sum, the previous results show that the richest households are not only more likely be victims of property crimes, but also more liable to report feeling unsafe. The former finding is consistent with the Latin American evidence as reported by Gaviria and Pages (2000). These authors show that in Latin America households from the top quintile are at least seven percentage points more likely to have a member victimized than households from the bottom quintile. By contrast, the evidence reported by Levitt (1999) shows that

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[14] Whereas more than three percent of all female-headed households had a family member murdered in the six months prior to the survey, less than one percent of all male-headed households had to experience the same ordeal. The kidnappings rates do not differ much between these two types of households and the assault rates are slightly higher in households headed by women.

[15] The question asks whether people feel unsafe because of one of following reasons: high levels of crime, presence of gangs, social conflict and inadequate protection against crime.

in the United States the opposite pattern holds: poor American households are more likely to be victimized (and the tendency is toward a greater concentration of crime among them).

Table 5. Probability of Victimization and Household Attributes
Probit Estimation

	(1)	(2)	(3)
Second Quintile	-0.003	-0.004	-0.016
	(0.12)	(0.15)	(0.60)
Third Quintile	-0.003	-0.009	-0.012
	(0.11)	(0.32)	(0.43)
Fouth Quintile	0.024	0.020	0.024
	(0.89)	(0.69)	(0.82)
Fifth Quintile	0.072	0.077	0.062
	(2.58)**	(2.37)*	(1.92)
Unemployed Head		0.235	0.235
		(5.61)**	(5.47)**
Education of Head		-0.001	-0.002
		(0.32)	(0.74)
Female Headed Household		0.042	0.042
		(2.31)*	(2.29)*
Head Older Than 60		-0.019	-0.02
		(0.92)	(0.94)
Head Younger Then 25		-0.079	-0.087
		(2.55)*	(2.91)**
Household Used to Live in a Different City		0.008	0.03
		(0.29)	(1.05)
Household Has a Business in its Home		0.112	0.091
		(4.20)**	(3.36)**
City Fixed Effects	No	No	Yes
Number of Observations	2628	2627	2627
Pseudo R-Squared	0.004	0.022	0.0426

Absolute value of z-statistics in parentheses
* significant at 5% level; ** significant at 1% level
The first quintile is the reference group.

Table 6. Violent Crime and Household Attibutes
Probit Estimation

	(1)	(2)	(3)
Second Quintile	0.004	0.000	-0.002
	(0.34)	(0.06)	(0.20)
Third Quintile	-0.016	-0.015	-0.013
	(1.88)	(2.20)*	(2.00)*
Fouth Quintile	0.008	0.001	0.002
	(0.63)	(0.14)	(0.21)
Fifth Quintile	0.011	0.004	0.000
	(0.88)	(0.31)	(0.05)
Unemployed Head		0.026	0.021
		(1.80)	(1.49)
Education of Head		0.001	0.001
		(1.10)	(0.78)
Femaled Headed Household		0.044	0.039
		(5.90)**	(5.67)**
Head Older Than 60		0.000	0.000
		(0.04)	(0.02)
Head Younger Then 25		-0.022	-0.020
		(1.69)	(1.81)*
Household Used to Live in a Different City		-0.007	-0.003
		(1.58)	(0.57)
Household Has a Business in its Home		0.008	0.003
		(1.27)	(0.52)
City Fixed Effects	No	No	Yes
Number of Observations	2628	2627.00	2627
Pseudo R-Squared	0.0107	0.0718	0.0948

Absolute value of z-statistics in parentheses

* significant at 5% level; ** significant at 1% level

The first quintile is the reference group.

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Table 7. Feeling Unsafe and Household Attributes
Probit Estimation

	(1)	(2)	(3)
Second Quintile	0.122	0.123	0.101
	(3.99)**	(3.97)**	(3.03)**
Third Quintile	0.079	0.091	0.123
	(2.58)**	(2.86)**	(3.61)**
Fouth Quintile	0.07	0.072	0.118
	(2.25)*	(2.18)*	(3.33)**
Fifth Quintile	0.176	0.165	0.147
	(5.84)**	(4.72)**	(3.87)**
Unemployed Head		0.033	0.024
		(0.76)	(0.53)
Education of Head		0.005	0.001
		(1.80)	(0.40)
Femaled Headed Household		0.033	0.034
		(1.53)	(1.47)
Head Older Than 60		-0.056	-0.071
		(2.16)*	(2.60)**
Head Younger Then 25		0.083	0.027
		(1.84)	(0.58)
Household Used to Live in a Different City		-0.012	0.085
		(0.38)	(2.33)*
Household Has a Business in its Home		0.026	-0.03
		(0.88)	(0.97)
City Fixed Effects	No	No	Yes
Number of Observations	2628	2628	2627
Pseudo R-Squared	0.0101	0.0149	0.143

Absolute value of z-statistics in parentheses

* significant at 5% level; ** significant at 1% level

The first quintile is the reference group.

The previous results also show that the probability of being a victim of a violent crime doesn't depend much on the socioeconomic status of the households. While no comparable evidence exists for other countries of Latin America, a recent study by Levitt (1999) shows that the incidence of homicides in Chicago, though still borne disproportionately by the poor, has recently become more evenly distributed across socioeconomic strata.

Distribution of Anti-Crime Strategies: the better-off engage much more intensively in preventive strategies

One can't determine who bears the burden of crime without examining who engages in anti-crime strategies and who doesn't. In principle, rich households should be more prone to engage in such strategies, if only because they have more to lose from property crime. But if they believe that the probability of being victimized is independent of their actions, they may well opt for not doing anything or for doing very little. In particular, Gaviria and Pages (2000) show that if household investments in crime avoidance have sharp diminishing returns, the rich may opt for not investing at all even at the expense of a greater victimization risk.[16]

Table 8 shows that household from the top quintile are much more likely to have anti-theft devices in their homes, to participate in neighborhood watching programs and to hire private guards. For the latter strategy, the differences between the top and bottom quintiles is almost 50 percentage points and the difference between the fifth and fourth quintile is more than 20 percentage points. For the other two strategies, the differences among quintiles follow a similar pattern though they are smaller in magnitude.[17]

Households from the top quintile are also more likely to avoid road trips than households from any of the other quintiles. The same is true for not going out at night and not going

[16] See Gill and Ulahi (2000) for an insightful theoretical analysis of household decisions in the face uncertainty.
[17] These results are the same regardless of whether or not we control for other household characteristics and city fixed effects.

out alone, though the differences in these two cases are not statistically significant. In general, the propensity to engage in anti-crime strategies increases monotonically with socioeconomic status. Moreover, the differences between contiguous quintiles become larger and larger as we move from bottom to top, suggesting the presence of a nonlinear pattern.

Figure 5 illustrates the latter point using a specific example. The thin line shows, for each quintile, the percentage of households that have private guards in their homes or condominiums. The bold line shows, also for each quintile, the fraction of households that had at least one member victimized in 1999. The richest households not only have a higher probability of being victimized, but also a much higher propensity to hire private guards. On the whole, this figure reinforces the idea that the burden of property crime is disproportionately borne by the better-off: they are more likely to be victims of property crimes, more likely to feel unsafe and more likely to engage in anti-crime strategies.

The previous result may explain the growing sense of malaise among rich and middle class households; many of which have left the country while others loudly demand a firmer stance of the government against crime and violence. Figure 6 shows, for example, that the rich and middle-income are much more likely to migrate abroad than the poor. Whereas almost four percent of households from the top quintile had a member who left the country during 1999, no households from the two bottom quintiles had a member doing the same.[18]

Domestic Violence: the other side of the coin

Table 9 shows that poor and uneducated women are more likely to be victims of domestic violence. The probability of being a victim of domestic violence raises as much as 10 percentage points as we move from the bottom to the top quintile. This is so not only for the most common forms of aggression, but for the most serious incidents as well.

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[18] The data also show that household that have been victimized are twice as likely to leave the country as household than do not. By contrast, there are sizable differences in the propensities to migrate between

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However, the effect of relative socioeconomic status on the probability of being a victim of domestic violence shrinks substantially and loses its significance completely after controlling for both the years of education of the individual and those of the household head. In sum, lack education rather than lower socioeconomic status appears to be the main risk factor in the case of domestic violence.

As shown, each year of schooling reduces the probability of victimization by 1.5 percentage points if all incidents of domestic violence are considered and by 0.9 percentage points if only serious incidents are considered. Further, each year of education of the household head reduces the probability of being a victim of domestic violence by 0.7 percentage points. Surprisingly, women who hold regular jobs are more likely to suffer from domestic violence than women that do not. All reported results are robust to the inclusion of regional dummies.

In sum, unlike the distribution of crime across victims, domestic violence affects mainly poor and uneducated individuals. Lack of education, not only of the prospective victim but of the prospective perpetrator as well, is the main predictor of the incidence of domestic violence. Interestingly, this is even more so when the most serious types of aggression are considered.

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households that have experienced substantial income reductions and households that haven't.

Table 8. Anti Crime Strategies by Quintile of Socioeconomic Status

	Don't go out at night	Don't go out alone	Anti-theft devices	Neighborhood watching
Second Quintile	-0.02	0.016	0.044	0.045
	(0.55)	(0.40)	(0.94)	(0.98)
Third Quintile	-0.006	0.010	0.086	0.102
	(0.16)	(0.24)	(1.82)	(2.21)*
Fouth Quintile	0.015	0.019	0.202	0.055
	(0.44)	(0.46)	(4.24)**	(1.20)
Fifth Quintile	0.045	0.027	0.364	0.163
	(1.33)	(0.67)	(7.82)**	(3.55)**
Number of Observations	1183	1183	1183	1183
Pseudo R-Squared	0.003	<0.000	0.061	0.010

	Private guards	Avoid road trips	Sum of all strategies
Second Quintile	0.075	0.023	0.131
	(1.52)	(0.52)	(1.12)
Third Quintile	0.108	0.130	0.344
	(2.21)*	(2.79)**	(2.93)**
Fouth Quintile	0.250	0.133	0.548
	(4.97)**	(2.93)**	(4.66)**
Fifth Quintile	0.489	0.254	1.223
	(10.10)**	(5.54)**	(10.42)**
Number of Observations	1183	1183	1183
Pseudo R-Squared	0.129	0.032	0.100

Absolute value of z-statistics in parentheses.   * significant at 5% level; ** significant at 1% level
Probits were used in all models with exception of the last one.

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Table 9. Domestic Violence and Household Attributes
Probit Estimation

	All incidents			Serious Incidents		
	(1)	(2)	(3)	(1)	(2)	(3)
Quintiles 2-3-4	-0.066	-0.016	-0.030	-0.047	-0.012	-0.016
	(3.85)**	(0.91)	(1.65)	(3.62)**	(0.91)	(1.23)
Quintil 5	-0.159	-0.044	-0.068	-0.109	-0.037	-0.044
	(7.82)**	(1.78)	(2.68)**	(8.64)**	(2.07)*	(2.49)*
Years of Schooling		-0.015	-0.014		-0.009	-0.008
		(6.99)**	(6.59)**		(5.30)**	(5.07)**
Years of Schooling Head		-0.007	-0.006		-0.007	-0.007
		(3.31)**	(3.15)**		(4.40)**	(4.38)**
Employed		0.062	0.055		0.035	0.033
		(4.48)**	(3.92)**		(3.10)**	(3.16)**
Regional Dummies	NO	NO	YES	NO	NO	YES
Number of Observations	5679	5661	5661	5678	5660	5660
Pseudo R-Squared						

Absolute value of z-statistics in parentheses
* significant at 5% level; ** significant at 1% level
The first quintile is the reference group.

5. Caveats

Several caveats are in order. First and foremost, this paper does not say anything about rural households, which are the main victims of the massacres and attacks routinely executed by paramilitary and rebels groups. Second, the data sets used does not include households living in irregular settlements built after 1993, simply because these settlements are not part of the official maps used in the sampling process. And third, the paper doesn't control for differences among quintiles in the propensities to report crimes. Arguably, the rich may report as crimes lesser offenses that are regarded by the poor as inevitable nuisances of city life.

However, these caveats are not likely to alter the main conclusions of this paper. First, the available evidence shows that crime and violence are disproportionately concentrated in the main cities of the country, despite the growing criminal incursions of leftist revels and paramilitary groups. Second, while poor households living in new settlements are, by design, excluded from the sample, equally poor households living in older neighborhoods are included. If the prevalence of crime and violence doesn't differ substantially between

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these two groups, one shouldn't expect big biases stemming from the exclusion of the former. And third, the poor are as prone as the rich to complain about poor public services and the quality of public institutions, which doesn't square with the view of stoic poor households that do not report crimes because they consider them an inherent part of their lives.

6. Conclusions

The results of this paper show that the better-off bear most of the burden of crime and violence and the worse-off bears most of the burden of domestic violence.

Arguably, the disproportionate concentration of property crime among the better-off have huge economic consequences, from lower levels of investments and growth to higher migration rates among the educated. For its part, the concentration of domestic violence among the worse-off, besides its effects on the well being of the victims, deteriorates the quality of family life, increases the probability of behavioral problems among children and ultimately reduces socioeconomic mobility and contributes to perpetuate poverty[19].

As long as rich and middle class Colombians continue feeling defenseless outside their homes and poor Colombians experience similar feelings inside theirs, the possibility of recovering economic prosperity in an atmosphere of peace is seriously compromised. Herein lies then the main challenge for Colombia society in the years to come.
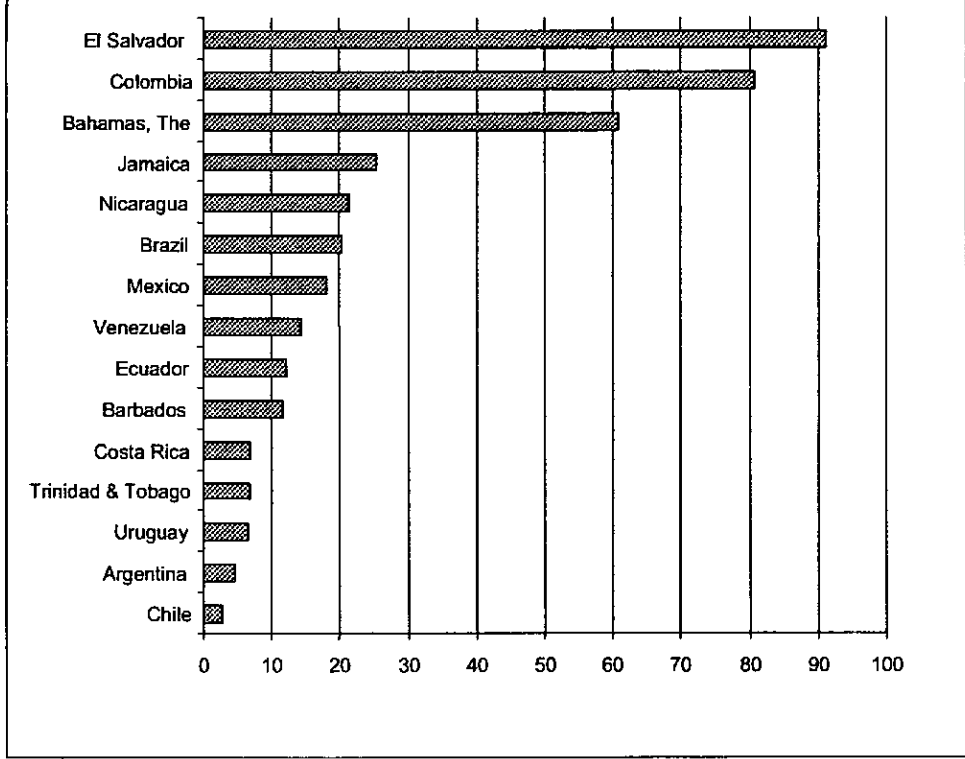
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[19] Brook et al. (1999) show that the quality of family interaction reduces the probability of drug use and crime involvement among Colombian youth living in high-risk neighborhoods. They conclude that "consideration should be given, therefore, to developing prevention programs aimed at family bonding, not only for its intrinsic value, but also for its long-range implications for decreased marijuana use, delinquency, and ultimately violence."
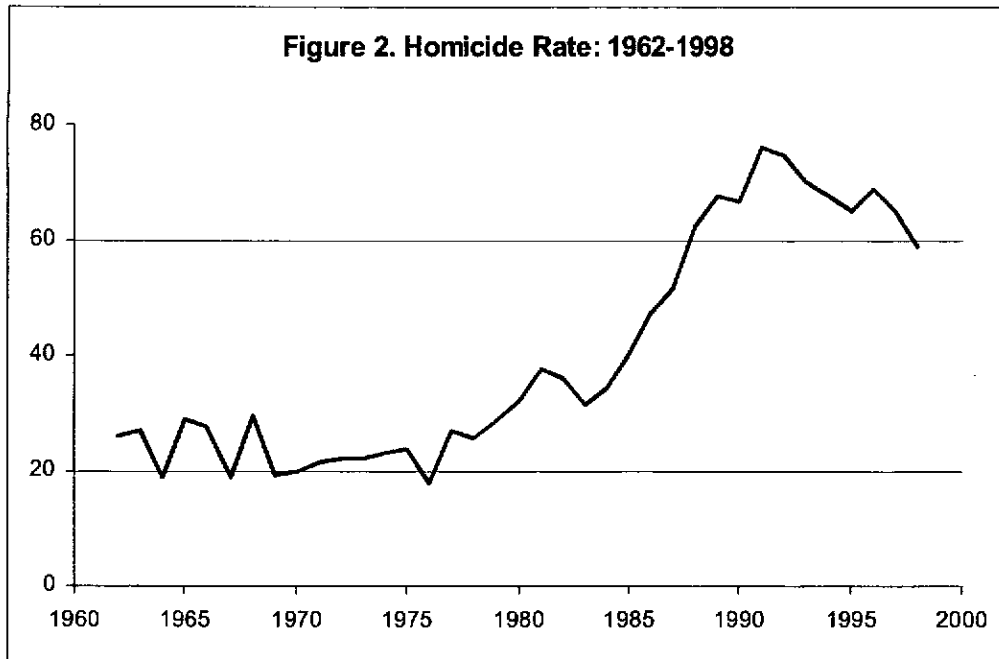
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**Figure 1. Homicide Rate in Latin America**

Country	Rate
El Salvador	91
Colombia	80
Bahamas, The	60
Jamaica	25
Nicaragua	21
Brazil	20
Mexico	18
Venezuela	14
Ecuador	12
Barbados	11
Costa Rica	7
Trinidad & Tobago	7
Uruguay	7
Argentina	5
Chile	3

Source: United Nations.

Figure 2. Homicide Rate: 1962-1998

Source: Colombian National Police.

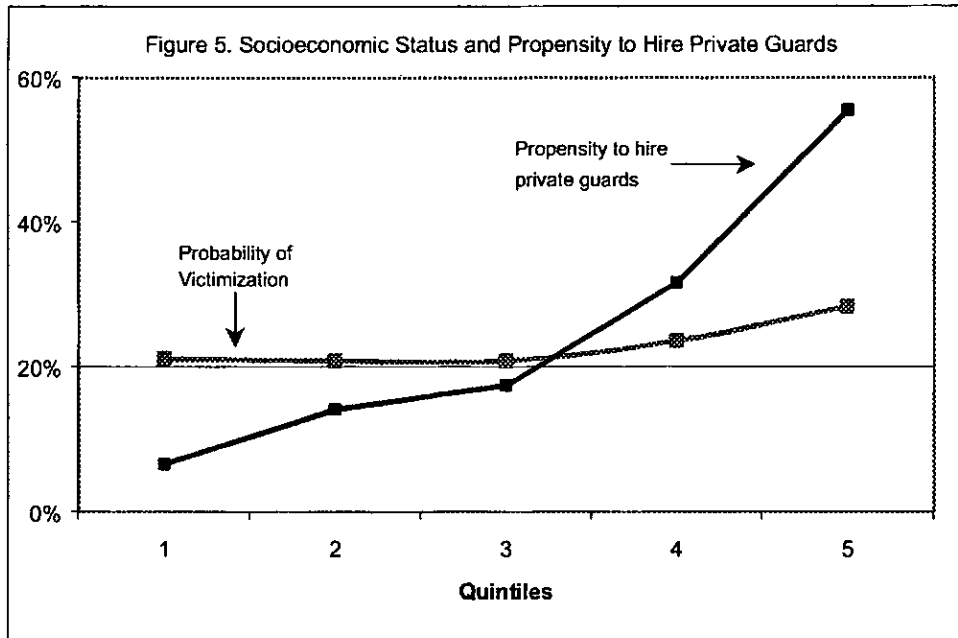**Figure 3. Victimization Rates in Latin America**
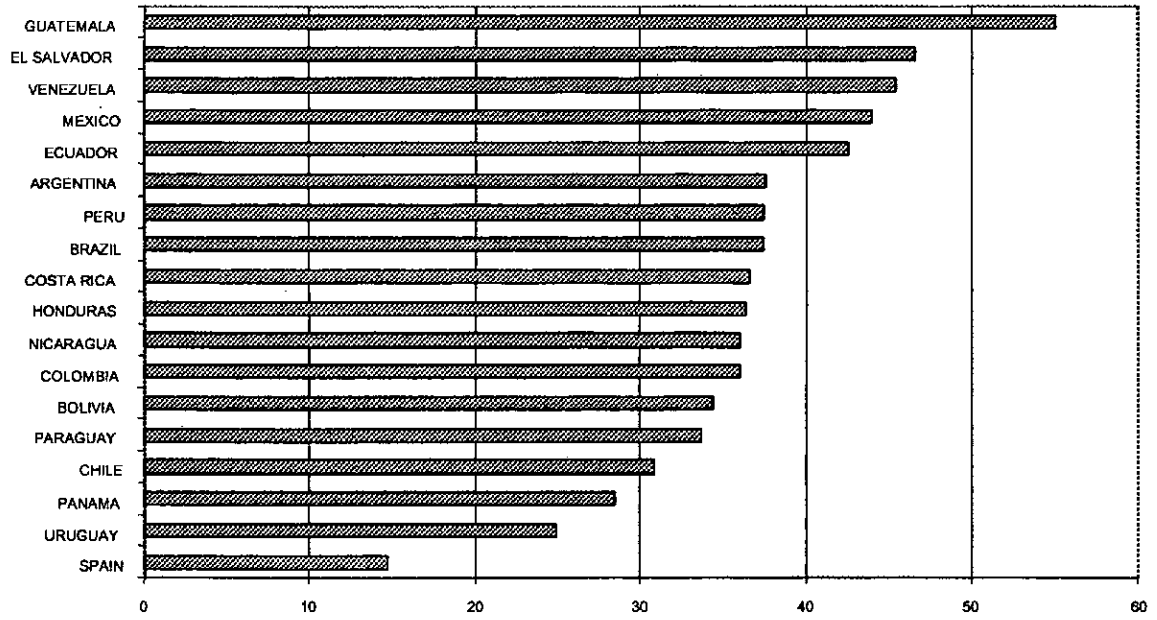
Source: Gaviria and Pages (2000)

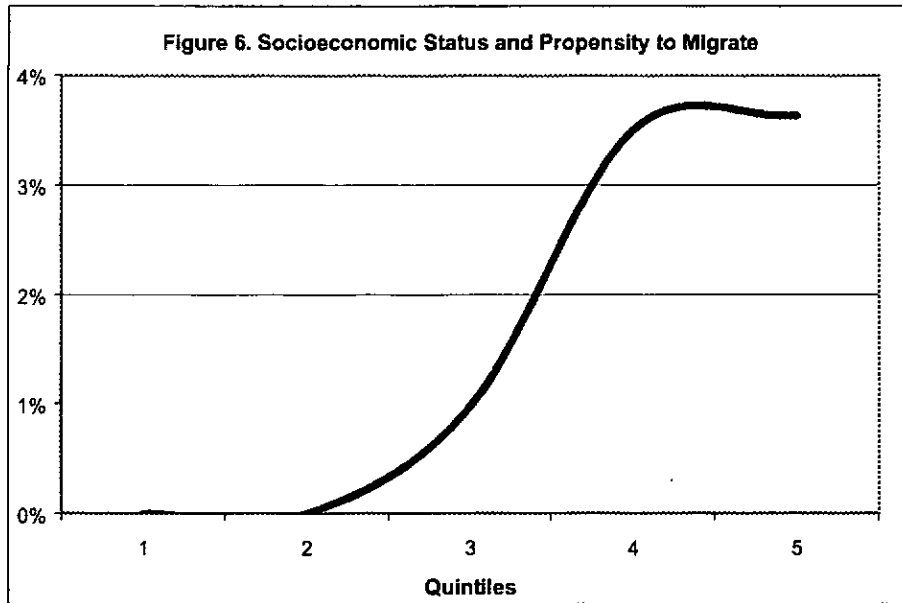**Figure 4. Homicide Rate and Index of Quality of Life (ICV)**
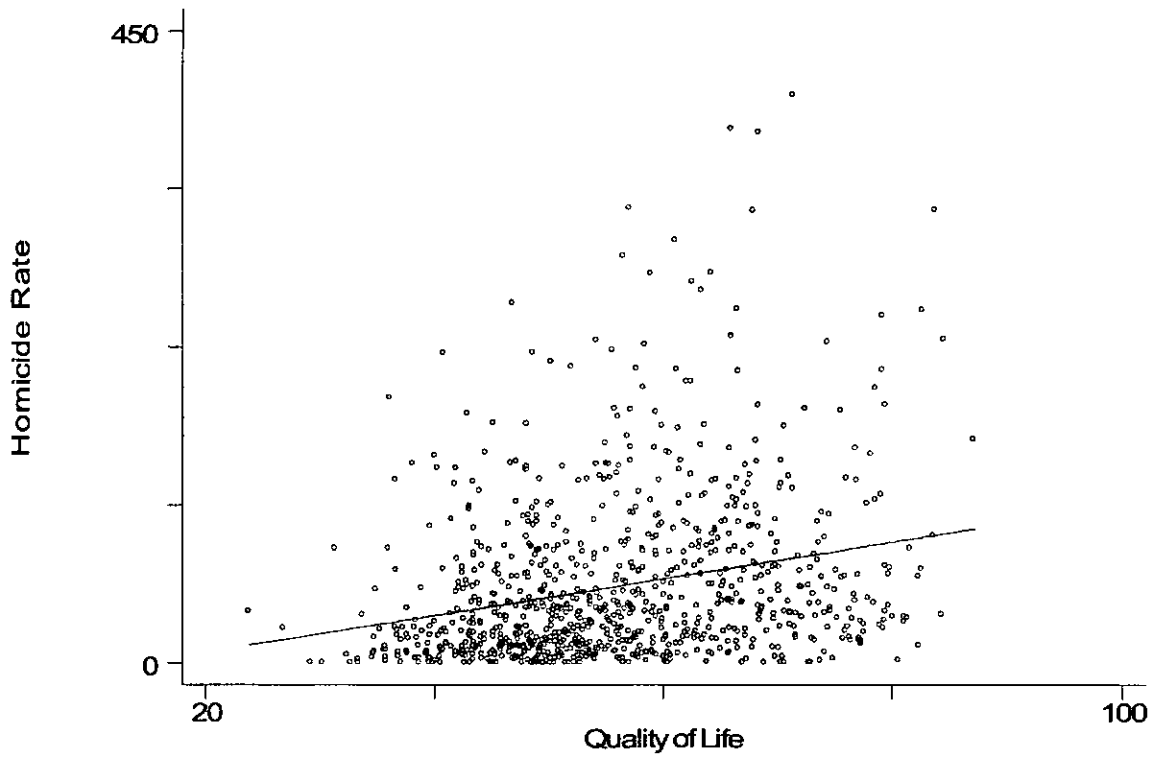
Source: Colombian National Police and National Department of Statistics (DANE).

Homicide rate refers to the number of homicides per 100,000 people.

Figure 5. Socioeconomic Status and Propensity to Hire Private Guards

Source: Author's calculations from Social Survey of Fedesarrollo.

Figure 6. Socioeconomic Status and Propensity to Migrate

Source: Social Survey of Fedesarrollo. Second Round, April of 2000.

Propensity to migrate refers the probability to leave the country during 1999.
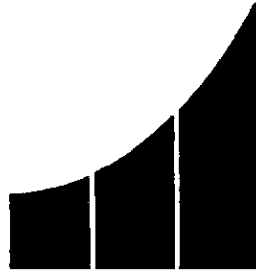
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