Urban Crime in the United States

Steven Raphael
Goldman School of Public Policy
University of California, Berkeley

Melissa Sills
Goldman School of Public Policy
University of California, Berkeley
1. Introduction

The impact of crime on general welfare is profound. Those most directly impacted are the victims of crime. By one estimate, the combination of direct monetary losses and the costs of pain and suffering among crime victims in the U.S. amounts to 0.5 to 0.7 percent of GDP (Freeman 1996). Beyond these direct costs are substantial indirect costs associated with reducing the threat of crime. In 1999, federal, state, and local government criminal justice expenditures amounted to $146.5 billion, or 1.6 percent of GDP (Bureau of Justice Statistics 2003). Many households pay significant premiums, either in terms of housing prices or a longer commute, to live in neighborhoods with lower probabilities of victimization. Many also purchase security devices and insurance to minimize the likelihood and costs of being criminally victimized. Moreover, fear of crime often impacts the most mundane personal decisions, such as whether to walk down a given street or through a particular neighborhood, whether to let one’s children play outside, or whether to leave one’s home after dark.

While all communities are affected by crime, residents in large urban areas are particularly impacted. Moreover, within large metropolitan areas, the residents of poor, largely minority neighborhoods suffer disproportionately. The spatial concentration of crime has direct as well as indirect consequences for urban neighborhoods. In addition to higher victimization rates, crime drives out local businesses, repels middle-income households, disproportionately burdens the fiscal position of local urban governments, and in general greatly diminishes the quality of life in urban neighborhoods.

In this chapter, we present an overview of crime in the United States with a particular emphasis on crime in urban areas. We begin with an empirical portrait of crime in the United States. We discuss alternative categories of criminal victimization as defined by the United States Federal Bureau of Investigation, and how the likelihood of victimization varies by offense, personal characteristics, and where one resides.

We next turn to a discussion of several alternative economic models of crime. While there are several crime categories that defy explanation based on rational choice, many crimes are easily characterized as economically motivated. A person deciding whether or not to participate in income generating criminal activity is likely to consider alternative methods of generating income, such as legitimate employment. Moreover, one might also consider the likelihood of being caught and the punishment in the event of being apprehended. Such
considerations clearly fit within a cost-benefit framework and decision-making on the margin. While a partial explanation at best, microeconomic theory may shed light on such questions as why the likelihood of offending declines with age, or why African-Americans offend at relatively high rates.

We present three micro-theoretical discussions of crime. First, we present a simple model where participation in income-generating criminal activity is modeled as a time-allocation decision and analyze how criminal activity responds to changes in legitimate wages, changes in income transfer programs, and changes in enforcement and punishment. We then discuss the concept of an equilibrium crime rate and how the interaction between expenditures on crime control and the supply of criminal offenders determines the equilibrium. Finally, we discuss multiple equilibrium models of crime.

A discussion of crime in the U.S. that does not include an explicit discussion of race would be sorely incomplete. In addition to being victimized at a higher rate than that for the general public, African-Americans offend at much higher rates and are considerably more likely to be institutionalized as a result. We end the chapter with a discussion of race and the criminal justice system. We present an empirical comparison of rates of offending and incarceration by race and review the empirical literature assessing whether the criminal justice system discriminates against blacks.

2. An Empirical Portrait of Crime in the United States

Felony criminal incidents involving victims are commonly categorized into the following seven mutually exclusive categories:

- **Murder and non-negligent manslaughter**: defined as the willful killing of one human being by another.
- **Rape/Sexual Assault**: rape refers to forced sexual intercourse, inclusive of psychological coercion and physical force. Sexual assault is distinct from rape and includes any unwanted sexual contact between victim and offender.
- **Robbery**: a completed or attempted theft directly from a person by force of threat with or without a weapon and with or without an injury.
• **Assault:** an attack with or without a weapon and with or without an injury. Attack with a weapon or an attack without a weapon resulting in a serious injury is referred to as aggravated assault. An attack without a weapon with no or minor injuries to the victim is referred to as simple assault.

• **Burglar:** the unlawful or attempted or forcible entry of residence, often but not necessarily involving theft.

• **Larceny/theft:** the taking of property without personal contact.

• **Motor vehicle theft:** the stealing or unauthorized taking of a motor vehicle, including attempted theft.\(^1\)

The first four felonies are often grouped under the banner of violent crimes, since each felony involves direct coercive or violent contact between the offender and victim. The latter three felony offenses are commonly referred to as property crimes, since the objective of each is to unlawfully acquire the property of another without physically encountering the victim. Most official crime statistics focus on these seven crimes.

There are two principal sources of crime data for the U.S. The first source is a household survey called the National Crime Victimization Survey (NCVS). The NCVS is a large annual survey of U.S. households that records all incidents of criminal victimization experienced by members of the surveyed households for a given time period. The second source of crime statistics is the FBI Uniform Crime Reports (UCR). The UCR data are based on incidents reported to local police agencies. Total crime rates for cities, metropolitan statistical areas, states, and the nation are tabulated from these reports by aggregating the reports for individual police departments (referred to administratively as UCR reporting agencies). Comparison of crime rates calculated from these two sources of data invariably lead to the conclusion that a substantial amount of crime goes unreported to the police. For example, in 2001 only 39 percent of rape/sexual assault incidents, 60 percent of aggravated assaults, 51 percent of burglaries, and 31 percent of thefts were reported to the police.

We use these two sources of crime statistics to present an empirical profile of crime in the United States. We begin with a simple discussion of the relative frequency of different types of criminal offenses, overall and by the characteristics of the victims. We will also present a simple

---

\(^1\) See Rennison (2002) for a detailed discussion of these definitions.
discussion of recent trends in crime. We then turn to a discussion of how criminal victimization varies across cities and across neighborhoods within cities.

A. A basic description of criminal victimization in the United States

Figures 1 and 2 show the rate of criminal victimizations for the year 2001. With the exception of murder, the crime rates are tabulated by the Bureau of Justice Statistics from the NCVS.\(^2\) Figure 1 shows the crime rates for each of the four violent crimes listed above while Figure 2 presents rates for the three property crimes. The violent crime victimization rates are expressed as the number of incidents per 100,000 people, while the property crime rates are expressed as the number of incidents per 100,000 households.\(^3\)

Figure 1 thankfully reveals that in 2001 the most serious violent crimes were also the least common. A murder rate of 6 per 100,000 indicates that six thousandths of a percentage point of the U.S. population was murdered in 2001, amounting to more than fifteen thousand homicides. While this may seem like a large number, the number of people murdered in 2001 is less than 40 percent of the number who died in automobile accidents. In other words, while awful, homicide is a relatively rare event. Rape and sexual assault, on the other hand, occurs with greater frequency (110 incidents per 100,000 persons age 12 and older). Moreover, given that the overwhelming majority of rape victims are female, the rape/sexual assault rate calculated explicitly for females is likely to be nearly double the rate reported in Figure 1. Robbery and assault are the most common forms of violent crime, with the assault rate of 2,120 incidents per 100,000 persons nearly eight times the robbery rate. In the assault category, 75 percent of victimizations fall under the category of simple assault, while the remaining 25 percent are aggravated assaults. Overall, assault accounted for 85 percent of violent victimizations in 2001.

Figure 2 displays household property crime rates for household burglary, theft, and motor vehicle theft. Property crime is considerably more common than violent crime.\(^4\) The most

\(^2\) Murder rates are derived from vital statistics of the U.S.

\(^3\) In many Bureau of Justice Statistics publications, victimization rates are tabulated per 1,000 individuals or households, while crime rates using the Uniform Crime Reports are usually tabulated per 100,000 individuals for both violent and property crimes. Since we use both sources of data in this section, all rates are expressed per 100,000.

\(^4\) To be sure, normalizing property crimes by the number of households rather than the number of people, mechanically yields property crime rates that are much larger than violent crime rates, given that the number of households is roughly 1/3 the size of the population in the United States. Nonetheless, multiplying the rates in Figure 2 by 1/3 to account for the difference in base still yields property crime rates that are far in excess of violent crime rates. This is evident below in our discussion of Uniform Crime Report data where all crime rates are tabulated relative to population size.
common property crime is simple theft, with 12,900 incidents per 100,000 households. This is followed by household burglary (2,870 incidents per 100,000 households) and motor vehicle theft (920 incidents per 100,000).

The victimization rates in Figures 1 and 2 are calculated relative to all residents, and thus mask considerable variation in the likelihood of being victimized across demographic and socioeconomic groups. To highlight these differences, Table 1 presents overall violent and property crime rates by gender, race, ethnicity, and annual household income. Men are considerably more likely to be victimized by a violent crime than women, blacks and Hispanics are more likely to be violently victimized than other racial and ethnic groups, while members of relatively low income households are more likely to suffer a violent victimization than are members of middle and higher income households. Given the geographic segregation of blacks, Hispanics, and the poor within metropolitan areas, these relatively high violent victimization rates translate directly into higher crime rates in poor neighborhoods of urban areas (as we will see below).

For property crimes, we observe similar patterns with respect to race and ethnicity, yet a non-uniform pattern of victimization across household income groups. Both relatively poor households and relatively wealthy households are the most likely to be victimized while those households in the middle of the income distribution are the least likely. A likely explanation of this U-shaped pattern is that the poorest households live in poor neighborhoods where the risk of victimization of all sorts is the highest while the wealthiest households are likely to be the most lucrative targets.

A final important dimension along which victimization risk varies considerably is age. Figure 3 presents violent victimization rates for seven different age groupings. The young are the most likely to be the victims of a violent crime, with teenagers 16 to 19 years of age suffering the highest risk (5,580 incidents per 100,000). The likelihood of victimization drops off sharply as people age, with victimization rates of 2,930 for people 25 to 34, 2,290 for those 35 to 49, 950 for those 50 to 64, and 320 for senior citizens.

To assess trends in crime rates, Figure 4 presents the overall violent crime rates and the overall property crime rates for the period 1973 through 2001. There are several notable trends in this figure. First, property crime rates have declined considerably during this 27-year period, with large declines between 1980 and 1986 (a 25 percent decline), and a pronounced decline
between 1990 and 2001 (52 percent). Similarly, violent crime appears to trend downwards as well, with the exception of the pronounced increase in violent victimization between 1986 and 1992.

While we will not offer detailed explanations of variations in violent and property crime over time, a slight digression pertaining to the increase in violent crime during the late 1980s is merited given the devastating impact of this particular wave of violence on urban communities. In an excellent empirical analysis of this violent crime wave, Grogger and Willis (2002) assess the likely role of the introduction of crack cocaine during the mid 1980s in aggravating violence and property crime in American cities. Crack is often characterized by criminologists as a technological innovation in the market for illicit drugs. While derived from powder cocaine, crack cocaine is smoked rather than snorted and sold in smaller quantities. Several aspects of this innovation in drug markets are likely to have increased crime rates. To start, crack is highly addictive and thus is more likely to drive desperate users into income-generating property crime. Second, the greater frequency of transactions between sellers and users over small, relatively inexpensive quantities of the drug is thought by many to increase the consequent violence associated with drug transactions.5

In their empirical work, Grogger and Willis make use of surveys of police departments and emergency room admission data to date the introduction of crack-cocaine in a sample of 27 urban areas in the United States. The first appearance of crack in these cities dates from 1982 to 1987, with 1985 a rough median year for crack’s introduction. They find a strong correlation between the introduction of crack cocaine and increases in violent crime. In fact, the authors estimate that in the absence of crack cocaine, violent crime would have been 10 percent lower during the peak of the early 1990s.

B. Variation in crime rates between and within U.S. metropolitan areas

In addition to differences in criminal victimization rates by race, income, gender, and age, there are substantial differences across metropolitan areas and across neighborhoods within metropolitan areas in the likelihood of becoming a crime victim. In general, large cities have higher crime rates than smaller cities, urban areas have higher crime rates than suburban and

---

5 The noted criminologist Alfred Blumstein also identifies the crack cocaine trade as the principal trigger in many of the homicides and ensuing retaliatory homicides that took the lives of thousands of black male youths during the late 1980s and early 1990s. For a complete development of this theory of violence, see Blumstein (1995).
rural areas, and poor, largely minority neighborhoods have higher crime rates than more affluent white neighborhoods. Here, we document these differences.

**Cross-Area Patterns**

Table 2 presents average metropolitan area crime rates for seven felony offenses, where the 300 plus metropolitan areas of the U.S. are stratified along a number of dimensions. The first set of figures presents crime rates for areas separated into four population-size categories. The second group of figures presents crime rates by the percent of metropolitan area residents that are poor. The third set of figures presents crime rates by the percent of the area population that is black or Hispanic. The final set presents crime rates by the degree of black-white residential segregation in the metropolitan area. For all groupings, the 300 plus metropolitan areas are divided into the quartiles of the distribution of the stratifying variable. For example, the population categories of 0 to 150 thousand, 150 to 300 thousand, 300 to 600 thousand, and 600 plus thousand correspond to the smallest 25 percent, the second smallest 25 percent, the second largest 25 percent, and the largest 25 percent of metropolitan areas.

While the patterns are not uniform across crime rates, Table 2 creates the general impression that crime is higher in large cities, in poor cities, in predominantly minority cities, and in racially segregated cities. The murder rate is uniformly higher in the top quartiles of all of these dimensions. For example, the murder rate for the largest areas is 6.5 per 100,000. This is 66 percent greater than the murder rate for the smallest metropolitan area. Comparably, murder in the poorest metropolitan areas is 57 percent higher than in the least poor areas, 169 percent higher in the areas with the largest minority population share relative to areas with the lowest minority population share, and 123 percent higher in the most segregated cities relative to the least segregated cities. Similar patterns are observed for motor vehicle theft, robbery, assault, and burglary.

The relationship between crime and city characteristics is most evident when we consider the overall violent and overall property crime rates. Figures 5 and 6 present average overall crime rates for metropolitan areas stratified along the dimensions listed in Table 2. In Figure 5, we see a uniformly positive relationship between violent crime and metropolitan area population,

---

6 We use the dissimilarity index of racial segregation to characterize the degree of black-white segregation for each of the 300 plus metropolitan areas. The dissimilarity index ranges between 0 and 100 and is interpreted as the percent of blacks (or whites) that would have to change neighborhoods in order to yield a perfectly even distribution of blacks and white across neighborhoods of the metropolitan area.
the percent black or Hispanic, and the degree of black-white segregation. While there is not a uniform relationship between violent crime and poverty, low poverty metropolitan areas generally have lower crime rates than high poverty metropolitan areas. Similar, yet less pronounced patterns are observed for overall property crimes in Figure 6. Property crime is somewhat higher in large areas, poor metropolitan areas, predominantly black and Hispanics metropolitan areas, and in segregated areas.\(^7\)

All four of these dimensions are correlated with one another – i.e., large metropolitan areas have higher poverty rates, larger minority populations, and generally higher levels of black-white segregation. Hence, understanding why crime is higher in large cities is likely to explain the relationship between crime and many of these area-level characteristics.

A recent empirical study by Glaeser and Sacerdote (1999) seeks to answer this question. The authors hypothesize a number of avenues by which city size is likely to influence crime rates. First, they speculate that the density of cities bring potential offenders into relatively closer contact with potential victims, including wealthy victims. This relatively close contact may increase the expected payoff to criminal activity, and thus generate more crime in large dense metropolitan areas. Second, the authors demonstrate that the likelihood of being arrested conditional on committing a crime is lower in large cities. In one of the theoretical models discussed below, we show that an increase in the expected payoff to crime through, for example, a reduction in the likelihood of being arrested, is likely to increase the number of potential offenders and the amount of offending by a given active criminal. Finally, the authors posit that large cities are more likely to be the homes of those who are particularly pre-disposed towards committing crime.

In their cross-city analysis of crime rates, Glaeser and Sacerdote find that roughly one-quarter of the relationship between crime and city size is attributable to the relatively higher payoffs to crime in large cities. The lower probability of being arrested accounts for approximately twenty percent of this relationship. Finally, the authors conclude that nearly one-

\(^7\) The reader may have noticed that the crime rates presented in Table 2 and Figures 5 and 6 are considerably lower than the crime rates presented in Table 1 and in Figures 1 through 4. The latter set of figures is based on the FBI Uniform Crime Reports, which are based on crimes reported to the police. Given the under-reporting of crime to the police, these numbers are always lower than crime rates calculated from victimization surveys. In addition, property crime rates with the UCR data are commonly tabulated per 100,000 residents rather than per 100,000 households. These two factors combined are responsible for the disparities.
half of the relationship between crime and city size is attributable to a high preponderance of criminally prone individuals residing in large cities.

*Variation within cities*

Within metropolitan areas, there is a great degree of variation in crime rates across neighborhoods. Generally, crime is particularly high in poor, minority neighborhoods. For example, the murder rate in the city of Oakland, California was roughly 20 homicides per 100,000 residents in the year 2001. This is much higher than the national average of 6.1 per 100,000 for that year, and is at the 91\textsuperscript{st} percentile\textsuperscript{8} of the distribution of murder rates for cities with greater than 100,000 residents. Despite this high murder rate, there are many neighborhoods within the city where there wasn’t a single homicide in 2001. Nearly all of the higher-income residential areas in the Oakland hills and the more middle-income communities of north Oakland were homicide-free during 2001. Conversely, the poor, predominantly black and Latino residential areas in the flats of east and west Oakland accounted for nearly all of the city’s homicide count.

Crime rates are generally higher in the central city of a metropolitan statistical area (MSA) than in the suburbs. Figure 7 presents a comparison of overall violent and property crime rates for 2001 in three geographic areas: urban areas (the central city of the metropolitan area), suburban areas (areas within the MSA but outside of the central city), and rural areas (areas located outside of an MSA). These figures are calculated using victimization data. The violent crime rate for urban areas is 1.49 times that of suburban neighborhoods and 1.57 times that of rural areas. Similarly, property crime rates in urban areas are 1.36 times the comparable rate for suburban areas and 1.61 times the comparable rate for rural areas.

In most U.S. metropolitan areas, racial and ethnic minorities reside in central urban communities while white households tend to reside in metropolitan area suburbs. In addition, poverty rates tend to be higher in central urban communities than in residential areas located on suburban fringes. In light of these segregated housing patterns, the higher central city crime rates depicted in Figure 7 would appear to imply that minorities and the poor face higher neighborhood crime rates than do white households and non-poor households. In fact, this is very much the case.

\textsuperscript{8} That is to say, the murder rate in Oakland is greater than that for 91 percent of cities with population in excess of 100,000 people.
Table 3 presents comparisons of the neighborhood crime rates for different demographic groups for two fairly large U.S. cities. Each figure presents the crime rate in the neighborhood of the average white, black, Hispanic, and poor resident of each city. While there are differences between these areas, the inter-racial/ethnic patterns and the relative ranking of crime rates in poor neighborhoods is fairly constant. White neighborhoods have by far the fewest number of criminal victimizations per 100,000 residents, black neighborhoods tend to have the highest crime rates, and the crime rates in Hispanic neighborhoods lie between those for blacks and whites. Not surprisingly, crime is a particular problem in predominantly poor neighborhoods of urban areas.

The disproportionate impact of urban crime on predominantly minority and poor neighborhoods, and the consequent adverse effects on the poor, was recently demonstrated in a fairly stark manner by a housing mobility experiment funded by the United States Department of Housing and Urban Development (HUD). The Moving to Opportunities (MTO) housing mobility experiment was designed to analyze the effects of moving predominantly poor, minority, and female-headed households out of central city public housing projects located in high poverty neighborhoods and into private rental housing in neighborhoods with lower poverty rates and greater socioeconomic diversity. The program enlisted a large group of public-housing households and randomly assigned each household into one of three groups: (1) a treatment group which was given a Section 8 housing voucher that could be used to rent housing in the private market but could only be used in neighborhood with poverty rates lower than 10 percent, a (2) Section 8-only group that was given a rental voucher with no restriction on where it could be used, and (3) a control group that was offered nothing in terms of housing assistance above and beyond what the households was already receiving.

Several teams of researchers analyzed the results of several post-move outcomes, including measures of employment, child educational outcomes, and health status. The research team analyzing MTO in Boston conducted a thorough analysis of the impact of the program on

---

9 These figures are calculated in the following manner. Each city is divided into sub-city areas using U.S.Census Bureau 2000 census tracts. For each census tract, data on crime counts from the respective local police department and population from the 2000 Census are used to calculate a neighborhoods level crime rate for each of the seven felony offenses and for the overall violent and property crime rates. We then take the weighted average of all neighborhoods in the city, using the tract population for the given group as weights. Thus, for example, the average murder rate for black neighborhoods in Austin is the average of the murder rate for all neighborhoods in Austin where tracts with large black population are given more weight than tracts with small black population and tracts with no resident blacks are not counted at all.
measures of personal safety from crime and the likelihood of being victimized (Katz, Kling, and Lieberman 2001). Figure 8 presents the average post-program responses to a series of questions regarding exposure to crime and victimization administered to the program participants in the Boston MTO program. Each bar gives the proportion of the respondents in each group that answered affirmatively to the questions listed along the bottom of the chart.

The results from this study are stunning. While nearly 40 percent of control group households indicated that the streets near their home were unsafe during the day, only 32 percent of the Section 8 group and 24 percent of the experimental felt unsafe. Members of the Section 8 only group and the experimental groups were less likely to have seen someone carrying a gun, heard or seen gunfire in the past month, or witnessed drug dealing. Treatment group households were also considerably less likely to have been victimized by crime in the recent past.10

3. The Economics of Crime

There are many personal, sociological, psychological, and perhaps even biological factors that are likely to determine whether someone engages in criminal activity at some point in his or her lifetime. For example, being violently abused as a child is often linked to an adult predisposition towards violent behavior. The overwhelming majority of violent crimes are committed by men, suggesting that there inherent difference between the sexes in the likelihood of becoming a criminal offender. While the research investigating the link between severe mental illness and violence suggests no systematic relationship, several researchers have found that the mentally ill who are also dual-diagnosed substance abusers commit violent acts at a relatively high rate.

Given the complexity of criminal activity and the host of factors that are likely to influence individual criminal behavior, it may seem odd to analyze crime using the tools of microeconomic theory. One’s skepticism may be particularly aroused in reaction to the

---

10 Interestingly, these program effects are also likely to understate the impact of residential location on the likelihood that one is victimized considering that only half of those households given the opportunity to move actually moved. The statistics in Figure 8 are the average values for all members in the experimental and section 8 only group, whether or not they actually used the voucher to move out of public housing. An experimental effect calculated in this manner is usually referred to as the “intent-to-treat” effect, since the number of households that actually respond to the treatment of the experiment –i.e., the number that actually moved – is less than the number who received vouchers – i.e., those that the program intended to treat.
application of such theories to an analysis of heinous violent crime, where not only the rationality, but the sanity of the offender is in question.

Nonetheless, there are many aspects of crime that are amenable to microeconomic modeling. Engaging in criminal activity may often come at the expense of, or in conjunction with, engaging in legitimate work for pay. Deciding how much effort to devote to illegitimate rather than legitimate activity is likely to involve comparing the relative returns to each activity. Moreover, whether one commits income-generating crimes is likely to be influenced by the likelihood of being caught and the punishment if convicted.

Beyond the decision-making of the offender, the amount of resources that society devotes to fighting crime is an inherently economic decision. The benefits of crime prevention are clear, and all else held equal, most people prefer a low crime rate to a high crime rate. However, reducing crime rates comes at a cost. Determining the appropriate level of resource to allocate towards crime control requires evaluating this tradeoff.

In this section, we present three alternative microeconomic models that aid in analyzing crime. We begin with a simple theoretical model of the decision to commit income-generating crimes. This model couches the criminal participation decision within the well-known consumption/leisure optimization problem that is a standard workhorse of labor economists. The model is used primarily to show the relationship between criminal activity and the relative returns to legitimate and illegitimate work. We then discuss a model of equilibrium crime rates based on the supply behavior of offenders and the demands of potential crime victims for crime abatement. Finally, we explore a simple multiple-equilibrium model of crime, where cities that are otherwise similar may have very different crime rates depending on which side of a crime threshold the city falls. Such threshold effect models have had great influence on policing strategies that have been credited with drastic reductions in crime rates in large U.S. cities.

A. Criminal activity as time allocation choice

Here we present a simple model of the decision to participate in criminal activity. In this model criminal activity is conceptualized as a form of employment and a means by which individuals generate income for consumption. We begin by describing the basic model, how criminal activity is likely to be influenced by legitimate labor force activities, and the impact of outside sources of income, such as income from public assistance programs, on criminal

---

11 The model presented in this section draws heavily from Grogger (1998).
participation. We then use this model to attempt to explain common traits of offenders in the U.S.

The basic model

Suppose that an individual values two things: free time and consumption goods that are produced and sold in the market place. In order to consume market goods, a person must give up some free time in order to generate the income needed to purchase such goods. Foregone leisure time can either be supplied to the legitimate labor market in exchange for wages or devoted to criminal activity (such as robbing people or dealing drugs) in exchange for the returns to crime. In this model, we assume that there is no moral aversion to engaging in illegal activity.

The returns to legitimate activity is given by a pre-determined wage rate, $W$, at which the individual can supply as much time as desired. Assume that the returns to criminal activity diminish as the amount of time devoted to crime increases. This assumption implies that potential criminals rank order criminal opportunities according to their profitability, and commit the most lucrative crimes first. Suppose that our decision-maker has discretion over $T$ hours each month. The individual’s problem is thus to allocate $T$ hours across three separate uses: free time, time supplied to the legitimate labor market, and time supplied to criminal activity. Note, the person derives no happiness from working or committing crimes, but does derive utility from the income generated by these activities.

The budget constraint displays the potential free-time/consumption pairs given the legitimate wage rate and the potential returns to crime. These pairs present the set of choices from which the individual chooses the pair that maximizes happiness. There are three possible budget constraints, where the relevant constraint depends on a comparison of the relative returns to legitimate and illegitimate activity. The first two possibilities are relatively simple, and involve situations where either the returns to legitimate activity always dominate the returns to illegitimate activity, or visa versa.

The first case is displayed in Figure 9A. The figure displays two curves: a labor-income curve which increases at a rate of $W$ as the time devoted to working increases, and a crime-income curve which increases at a positive yet diminishing rate as the time devoted to crime increases. For both curves, the slopes give the increase in income that would results from

---

12 The wage rate will depend on the skills that the individual possesses and how the market values these skills. The assumption here is that wage is exogenously determined and not under the control of the decision-maker.
allocating a little bit more time to each activity, or alternatively stated, the marginal returns to legitimate and illegitimate activity. The amount of time devoted to either activity is calculated by subtracting the amount of leisure time measured on the horizontal axis from the individual’s time endowment, T.

In Figure 9A, the return to the first hour of crime is less than the return to an hour of legitimate work. Since the returns to crime are diminishing and the returns to work are constant, the marginal return to legitimate work always exceeds the marginal return to crime. This implies that one can always generate more income for a given amount of leisure time foregone by supplying time to the legitimate labor market. Hence, for an individual with labor-income and crime-income profiles like those depicted in Figure 9A, the effective budget constraint is given by the labor-income curve.

The alternative extreme occurs when the marginal return to crime always exceeds the legitimate wage rate. This is depicted in Figure 9B. Here, the slope of the crime-income curve is always greater than that of the labor-income curve – i.e., a little more time devoted to crime always generates more income than supplying a little more time to the legitimate labor market. For an individual with these profiles, the effective budget constraint is given by the crime-income curve.

The third possibility occurs when the marginal return to crime is greater than the legitimate wage rate when the amount of time devoted to crime is low, but is less than the wage rate when the amount of time devoted to crime is high. In this instance, the budget constraint is a combination of the labor-income and crime-income curves. This situation is depicted in Figure 9C. When T-t₀ hours are devoted to crime, the marginal return to additional criminal activity is equal to the legitimate wage rate, W. For allocations less than this amount, the returns to crime exceed W while for allocation above this amount the marginal returns to crime are less than W. This implies that at t₀, the slope of the crime-income curve equals the slope of the labor-income curve. Thus, any individual who would desire a consumption level in excess of C₀ would devote T-t₀ time to criminal activity and any additional foregone leisure to legitimate market work.

Regardless of which of the three budget constraints applies, a rational individual will choose the consumption/free time bundle that maximizes happiness, or utility. Based on standard theory of choice, this occurs when the individual chooses a pair that places her on the

---

13 To be precise, the absolute values of the slope of these curves give the marginal returns to these activities.
highest possible indifference curve. Three possible outcomes are shown in Figures 9A through 9C. In Figure 9A, the person chooses a positive level of consumption and supplies time to the labor market at wage rate $W$. In Figure 9B, the person also chooses a positive level of consumption, but supplies time to criminal activity, since the returns to crime always dominate the returns from working. In Figure 9C, the individual chooses a level of consumption $C_1$, where $T-t_0$ hours are devoted to committing income-generating crimes, while $t_0-t_1$ hours are supplied to the labor market.

*The crime-participation decision, legitimate wages, non-labor income, and the returns to crime*

Whether one commits crime in this model depends entirely on a comparison of the returns to legitimate and illegitimate activity at the point where no time is devoted to generating income. Only those individuals for whom the returns to crime exceed legitimate wages (for this first hour diverted from leisure) will commit crime. This fact generates the empirical prediction that individuals with relatively poor legitimate earnings prospects are the most likely to commit crime.

An additional prediction of this model is that an exogenous increase in legitimate wages will result in both a reduction in the number of offenders and a reduction in the amount of time devoted to crime for many who offend. The first part of this prediction follows directly from our discussion of the crime participation decision. If individuals decide whether or not to commit crime by comparing potential criminal earnings and wages at zero hours of leisure foregone, an exogenous increase in wage rates will reduce the pool of individuals for whom the return to crime exceeds wages (thus reducing the number of offenders).

A change in wages is likely to impact the time devoted to offending by diminishing the threshold amount of time defined by the condition that the marginal return to crime equals the marginal return to wages. This is shown in Figure 10. An exogenous increase in wages holding all else constant implies that better paying criminal opportunities will now be exhausted sooner. Before the wage increase, crime pays more than working until $T-t_0$ is allocated to crime. After the wage increase, crime pays more than working for only the first $T-t_1$ hours. Thus, legitimate wage impacts crime both at the extensive and intensive margins.

The model can also be used to evaluate the impact of changes in non-labor income on the amount of criminal offending for profit. Non-labor income is a term from labor economics that refers to an income source that is not tied to one’s labor effort. Public assistance that does
not depend on labor earnings or the value of in-kind transfers that is paid as a lump sum can be conceptualized as non-labor income.

Figure 11 graphs the impact of an increase in non-labor income on the amount of time devoted to crime for someone who allocates time to both work and crime. The increase in non-labor income shifts the budget constraint up by a constant amount for all levels of free time – i.e., for any level of work effort, income increases but the rate at which one can convert time into money does not. Since there is no impact on prices, but an increase in income, the change in non-labor income induces income effects on free time and consumption. If free time is a normal good, this person will consumer more free time and devote less time to working and committing crime.  

A final behavioral prediction that follows from this model of choice is that any factors that influence the expected returns to crime will also impact the number of people who commit crimes and the quantity of crimes that a given offender commits. The expected return to crime will be a function of several factors: the value of the loot, the likelihood of being caught, the likelihood of being convicted, and the punishment in the event of conviction. While private behavior on the part of potential victims can influence the end value of the target (through, for example, keeping valuables in safe deposit boxes rather than in one’s home), the likelihood of apprehension and conviction as well as the extent of punishment are all factors that are under public control. Thus by controlling these levers, public policy can impact the expected returns to crime, and in turn, the ultimate crime rate.

Figure 12A and 12B model the impact of a public policy intervention that reduces the expected returns to crime (for example, a sentence enhancement that increases the time served for a felony offense). If the intervention reduces the expected return to all criminal opportunities, then the criminal-income curve pivots inwards reflecting a smaller marginal return for all time allocations. In Figure 12A, the change is sufficient to deter the person from committing crime at all, since the marginal return to the first crime is now less than the wage rate \( W \). In Figure 12B, the declining return to crime lowers the threshold time allocation where the marginal return to crime equals the wage rate. In both instances, time allocated to criminal activity is reduced.

---

Note, for those who are both working and committing crimes, an increase in non-labor income may reduce work hours yet not have any effect on the amount of time devoted to criminal activity. For those engaged in criminal activity only, however, an increase in non-labor income will reduce time devoted to crime.
Predictions of the model

While the model presented is simple and, as with all economic models, abstracts from many important details, there are a number of implication or predictions that accord with reality and provide some explanation of the empirical patterns described above. For example, the model clearly predicts that those with poor earnings prospects in the legitimate labor market are more likely to engage in criminal activity, all else held equal. According to the most recent surveys conducted by the Bureau of Justice Statistics, the typical state prison inmate in 2001 was male, minority, young, and relatively uneducated. All of these traits are generally associated with low-wage workers, the group whom our model predicts should be most likely to offend.

In addition, the model provides a potential explanation for why crime is spatially concentrated. All metropolitan areas in the U.S. are spatially segregated by income, race, and ethnicity. The spatial concentration of individuals with high likelihood of offending should ultimately translate into the spatial concentration of crime.

B. The Equilibrium Crime Rate

Our discussion of the crime participation decision centered around a comparison between the marginal return to criminal participation and the marginal return to legitimate work. The relative returns to these two activities can be summarized by calculating the net returns to criminal participation (equal to the difference between the marginal return to crime and the legitimate wage). Our discussion indicates that as the net returns to crime increase the number of people committing crimes as well as the average number of crimes per criminal should increase.\(^{15}\) In the aggregate, this implies that the overall crime rate will be an increasing function of the net returns to crime. This aggregate relationship is summarized by the crime-supply curve depicted in Figure 13. As the net returns to crime increases, the number of active offenders and, in turn, the crime rate increases.\(^{16}\)

\(^{15}\) Of course, it is possible that there are some people who actively commit crime that, in response to an increase in the marginal return to crime, decrease the amount of crime they commit. This would occur when the income effect on free time consumption caused by an increase in the returns to crime swamps the substitution effect. In such instance, the individual labor supply curve to crime will be backward bending. In the discussion that follows, we are implicitly assuming that backward bending supply curves occur for only a small number of people and that the aggregate supply relationship is increasing in the net returns to crime.

\(^{16}\) In our time allocation model, we assumed that there was no moral aversion to crime. Under this assumption, the sole determinant of whether one commits crime is the net returns to criminal activity. If we allow people to be morably averse to crime, and assume that the degree of moral aversion varies from person to person, this will also induce a positive relationship between the net returns to crime and the crime rate. As the net returns increase, the number of people who will find crime attractive despite their moral reservations will increase. This implies that
Anything that influences the amount of crime at a given net return will determine the position of the relationship depicted in Figure 13. For example, an increase in the proportion of the population that is young and male (a demographic group with a relatively high propensity to commit crimes) will shift out the crime supply curve, implying a higher level of crime for any given net return. Other factors that may influence the position of the curve are the overall level of social cohesion and the amount of moral aversion to crime.

Any factors that impact the relative returns to crime will determine society’s position on the crime-supply relationship, and in turn, the overall crime rate. Among the factors that will alter the net returns to crime are the legitimate wage rate, the value of the loot, the likelihood of getting caught, and the punishment in the event of apprehension and conviction.

Many of the determinants of the overall crime rate are difficult to influence through public policy. For example, while there are steps that government can take to influence the level of social cohesion, the potential impact of the public sector in this realm is limited. Moreover, it is difficult, and perhaps in many instances undesirable, to use public policy to influence the demographic composition of society.

Nonetheless, there are several determinants of crime that are under the direct control of policy makers, in particular, the likelihood that an offender is apprehended and the punishment in the event of apprehension and conviction. Thus, by choosing the amount of resources to devote to crime control activities, society can effectively choose its position on the crime-supply curve, and in turn the overall crime rate. For example, by flooding the streets with police and enhancing statutory punishments to particularly severe levels, society could likely reduce crime of all sorts to very low levels. Alternatively, society could choose to devote fewer resources to policing and more moderate punishments, and thus, a relatively higher crime rate. What then determines the optimal crime rate?

To answer this question, one must recognize that the costs of crime extend beyond the costs to crime victims. To fully characterize the costs of criminal activity, one must include the direct costs to victims as well as the indirect costs of the resources that society allocates towards crime control. The optimal crime rate would be that which minimizes the costs of crime. Given

---

people will be willing to engage in morally unpleasant tasks for a price, with some individuals setting very high (possibly infinite) price thresholds, and others setting very low price thresholds.
the tradeoff between crime rates and crime control expenditures, this optimal crime rate will likely be greater than zero.

Figure 14 graphically portrays the components of the decision.\footnote{This discussion as well as the graphical presentation in Figure 14 follows closely from O’Sullivan (2000).} The figure shows three relationships: the relationship between victim costs and the overall crime rate, the relationship between crime-control costs and the overall crime rates, and the relationship between the total costs of crime and the overall crime rate. Most obviously, overall victim costs increase with the level of crime. Crime-abatement costs, however, decrease as the crime rate increases. As drawn, the decrease in costs is greatest at very low levels of crime, implying that the marginal cost of crime-abatement increases as the crime rate decreases. This would be the case if crime control activities vary in terms of effectiveness per dollar spent, and if law enforcement engaged in the most effective activities first. Thus, there is a tradeoff between crime-abatement costs and the costs to crime victims.

Total crime costs, equal to the sum of victim and abatement costs, are decreasing for low levels of crime and increasing for high levels of crime. Crime costs decrease for low levels of crime due to the fact that marginal increases in the crime rate cause larger reductions in crime-abatement costs than increases in crime-victim costs. For higher levels of crime however, the increase in victim costs of a small increase in crime exceed the savings from reduced abatement.

Costs are minimized when the crime rate equals $C_0$. At lower crime rates, the marginal benefits in terms of reduced victim costs are insufficient to justify the higher criminal justice expenditures. At higher crime rates, the additional victim costs are too high to justify the social savings in terms of lower criminal justice expenditures.

C. Multiple Equilibrium Models of Crime

The models we have discussed thus far can be characterized as single-equilibrium models, in that for a given set of values for the variables that determine crime, there is a corresponding unique equilibrium crime rate. For example, for a given level of criminal justice expenditures, distribution of wages, demographic composition and so on, the model above points to single level of crime. While such models are helpful for thinking about what determines crime rates and what society should do minimize the deleterious effects of crime, there are several empirical regularities that many have observed that do not appear to fit within the framework of a single-equilibrium model. For example, in many cities throughout the United
States one will often find examples where two otherwise similar neighborhoods have drastically different crime rates. In addition, there have been several periods in recent U.S. history where crime either increased dramatically and remained at relatively high levels or decreased dramatically and remained at sustained low levels.

Observations such as these have led many social theorists to hypothesize that there are thresholds to crime rates, that when exceeded, propel a neighborhood, city, or even nation towards sustainable and extremely high-crime rates. Conversely, pushing crime rates below such thresholds from above may propel an area’s crime rate downward towards a stable low-crime equilibrium. Such theories seek to explain why a given set of criminological fundamentals often correspond to multiple equilibrium crime rates and also seek to incorporate a role for chance or recent history in determining crime rates independently of identifiable underlying factors.

Perhaps the best-known example of such thinking is the “broken windows” hypothesis of James Q. Wilson. Wilson argues that small signs of social disorder, such as the broken windows on an abandoned building or home, often signal a breakdown of social control and that an alternative set of social norms and values are operative in the region. Under such circumstances, those who are pre-disposed towards committing crime may feel emboldened or may infer that the social sanctions in terms of stigma and the likelihood of being punished are relatively low. In this sense, crime and disorder begets more crime and disorder, and small amounts of disorder can propel a fairly stable neighborhood towards high levels of crime. Such thinking has had profound effects on policing in the last decade, with the most prominent policy application of the broken windows hypothesis being the policing strategy of the Mayor Rudolf Guiliani in New York City.

Economists who have worked on multiple equilibrium models of crime tend to emphasize the externalities that criminal offenders have on one another, and the impact of these externalities on overall crime rates. For example, Freeman, Grogger, and Sonstelie (1996) present a theoretical model where a criminal’s likelihood of being caught decreases with the number of people that are committing crimes, yet the amount that is left to steal decreases as the number of criminals increases. The combination of these two externalities leads to an expected marginal returns to crime that increases at first with the crime rate as the likelihood of being caught diminishes, but then decreases as the high crime rates exhausts available criminal opportunities.
An equilibrium crime rate in this model occurs when, given the actions of everyone else, no one has an incentive to alter their behavior from their current choices. A positive crime rate equilibrium is characterized by two conditions. First, it must be the case that the marginal return to crime equals the marginal return to working – i.e., legitimate wages. If this were not the case then more people would become criminals and drive down the returns to crime. Second, it must hold that for the given crime rate, an additional criminal must reduce the returns to crime – i.e., crime would have to be sufficiently high so that the external benefit of a reduction in the likelihood of being caught is more than offset by the decline in the marginal amount that one nets from criminal activity. A zero crime equilibrium is characterized by a situation where the marginal return to crime is less than legitimate wages. As we will see, the main insight of this study is that for a given legitimate wage and crime-returns profile, both equilibrium are possible (with one clearly inferior to the other).

Figure 15 depicts the key results of the model. The figure graphs the expected returns to crime for any criminal against the overall crime rate. The expected return to crime begins at $V_0$ (the return to crime at a zero crime rate), increases as the likelihood of getting caught decreases, peaks at an expected return of $V_1$, and then declines as the field of criminals gets crowded and the common resource of available loot is exhausted. The overall crime rate is determined by superimposing the legitimate wage rate on the graph of the returns to crime.

There are three possibilities, two of which correspond to a single equilibrium crime rate. To start if legitimate wages exceed the maximum return to crime, $V_1$, then the equilibrium crime rate will be zero. In this instance, no one ever has an incentive to engage in criminal activity. Alternatively, if legitimate wages are less than the return to crime when the crime rate is zero, $V_0$, then the equilibrium crime rate will be determined where the returns to crime just equal the legitimate wage rate. At this equilibrium, an additional criminal drives the return to crime below wages, while one less criminal leads to an increase in the returns to crime above legitimate wages – i.e., the equilibrium is stable.

The third and most interesting possibility occurs when legitimate wages lie between $V_0$ and $V_1$. Here, the crime-returns curve crosses the horizontal line depicting legitimate wages at two crime rates, $c_0$ and $c_1$. While the marginal returns to crime equal wages at the first point, this point is not a stable equilibrium since an additional criminal drives the returns to crime above wages, and thus active criminals at $c_0$ have an incentive to commit more crime and inactive
potential criminals have the incentive to abandon legitimate work for illegitimate activities. On the other hand, the higher crime rate does represent a stable equilibrium in that both the marginal returns to crime equal legitimate wages and the marginal returns to crime are declining.

However, there is yet another equilibrium crime rate in this instance: zero crime. When the crime rate lies below $c_0$, legitimate wages exceed the marginal returns to crime, and thus, anyone engaged in criminal activity has the incentive to abandon crime and get a job. Each person that does so increases the likelihood that remaining criminals will be caught, which in turn, reinforces the incentive to go straight. Ultimately, the zero-crime equilibrium will result.

Thus, in this third possibility, both an equilibrium with a high crime rate and an equilibrium with a low crime rate are possible, even with the same set of criminological fundamentals (returns to crime, and wages in this example). This theoretical result indicates that small random factors that push crime above or below the threshold level, $c_0$, can push a neighborhood or city to drastically different crime equilibrium. The model also opens up the possibility that historical circumstances may matter in determining an area’s crime rate. For example, a gang choosing to hang out in one neighborhood rather than another, random violent confrontations that beget retaliatory violence, or the like, may have long-term effects on neighborhood crime.

4. Race and the Criminal Justice System

Crime in the United States has a disproportionate effect on African Americans. Blacks are victimized, arrested, and incarcerated at rates that greatly exceed their membership in the population. Moreover, increases in imprisonment over time have disproportionately affected blacks. In 1950, slightly more than one-third of prisoners were African American; by the mid-1990’s, one-half of the prison population was black. In light of these facts and recent incarceration trends, an examination of race and the criminal justice system has become of increasing importance.

As we have already seen, African Americans are victimized by crime at higher levels than whites. The overall likelihood of being the victim of a violent crime is 27 percent higher for blacks relative to whites, while the likelihood of being victimized by a property crime is 9 percent higher (Table 1). For homicide in particular, the racial difference in victimization rates
is astounding. During the year 2000, the black homicide rate stood at 20.5 incidents per 100,000, compared with a white homicide rate of 3.3. In other words, in 2000 blacks were 6.2 times more likely to be murdered than whites. Moreover, at the peak of black homicide rates in 1991, blacks were 7.2 times more likely to be murdered than whites.\textsuperscript{18}

African-Americans are also incarcerated in prisons and jails at rates that far exceed those of the general population. Table 4 presents incarceration rates (sentenced inmates per 100,000) for all males, white males, and black males by age.\textsuperscript{19} Overall, black males are approximately 7 times more likely than whites to be incarcerated. By age, the largest relative differentials are for those 18 to 30 years of age, where blacks are over 8 times more likely. To put these rates in perspective, the U.S. Bureau of Justice Statistics (BJS) uses such incarceration rates to predict the likelihood that individuals from different demographic groups will enter a state or federal prison at some time during the life. The BJS estimates that 28 percent of blacks males, 16 percent of Hispanic males, and 4.4 percent of white males will serve time in prison at some point in their lives.

Explanations of the relatively high incarceration rate for black males usually fall within one of two categories: explanations based on a relatively high black rate of participation in criminal activity, and explanation based on the differential treatment of blacks by the criminal justice system. While these are enormous topics of research in criminology, economics, and the social sciences more generally about which volumes have been written, here we will highlight a few elements of this debate and some key empirical research. Our assessment is that both sets of explanations in tandem contribute to the relatively high rate of incarceration for African-Americans in the U.S.

\textit{A differential propensity to commit crime}

There are several patterns that strongly indicate that blacks offend at higher rates than other groups. Perhaps the most persuasive empirical evidence supporting this proposition comes from victim accounts of the perceived race of the offender and the high rates of intra-racial homicide. Concerning victim accounts, 14 percent of white victims of violent crimes involving a single offender reported that the offender was black in 2001. Black victims of comparable violent crime reported that the offender was black in 83 percent of all cases. Together, these two

\textsuperscript{18} In 1991 the black homicide rate was 39.3 incidents per 100,000 people while the white homicide rate was 5.5.
\textsuperscript{19} We focus here on males since nearly 90 percent of convicted inmates are male.
rates imply that for black and white victims of violent crime, the likelihood that the offender is black is roughly 25 percent.\footnote{20 Of course, this tabulation takes into account the relatively high rate at which blacks are victimized by violent crime.}

These figures have several implications. First, one should emphasize that black offenders commit only a fraction of the total amount of violent crime in the United States (roughly 25 percent). However, given that blacks account for roughly 13 percent of the population, the patterns evident in victim reports suggest that blacks offend at a relatively high rate. Moreover, once one accounts for the fact that most crimes are committed by males (especially violent crime), the disproportionate presence of black male offenders becomes even more pronounced.

The relatively high homicide rates for blacks coupled with the high proportion of homicide that is intra-racial (i.e., black-on-black or white-on-white) also indicates that blacks offend at a relatively high rate. We have already noted that blacks are roughly six times more likely to be murdered than whites. What we have yet to discuss is the characteristics of those who commit murder in relation to homicide victims. Roughly 86 percent of white homicide victims are murdered by a white offender. Roughly 94 percent of black homicide victims are murdered by a black offender. Given the high murder rates for blacks, these figures translate directly into a relatively high rate of offending (for this particular crime) for African-Americans.

An alternative measure criminal involvement that is, perhaps, the most frequently cited is the arrest rate. Figure 16 displays the relative distribution of arrests by the race of the offender along with the proportional representation of each racial group among the general population. Black offenders constitute 28 percent of those arrested yet only 13 percent of the general population in 2000. Assuming that arrests are a valid proxy for criminal involvement, then these figures, like the victimization and homicide reports, suggest that higher levels of criminal involvement explain some part of disproportionate incarceration rates.

Blumstein (1982) presents the first evaluation of the relative culpability of the high black arrest rate in explaining the high black incarceration rates. Using national data for 1974, Blumstein finds that differential arrest rates explain roughly 80 percent of the racial difference in incarceration rates. However, arrest rates explain a larger share of this differential for more serious offenses. For example, arrest rates explained 97 percent of the disproportional incarceration for homicide and 95 percent for aggravated assault, but only 46 percent for auto
theft and 49 percent for drug offenses. Blumstein hypothesized that where there is more discretion at the various stages of the criminal justice process (when the offense is less serious) there would be more opportunities for bias and racial prejudice to influence the decisions of agents of the criminal justice system.

More recent studies using various methodological approaches generally confirm the finding that the relatively high rates at which blacks commit crime explains much of the difference in incarceration rates. These latter studies also find that the seriousness of the offense and the prior record of the arrestee are also important indicators of incarceration and sentencing. However, this research finds tremendous variation across states and offense categories in the explanatory power of racial differences in arrest rates. Moreover, there are those who would argue that arrest rates in themselves reflect the differential treatment of African-American by the police and are therefore poor measures of a differential propensity to commit crime. This brings us to the next topic of discussion.

*Does the criminal justice system treat blacks differently?*

The implementation of criminal justice policy may result in blacks being treated differently for a number of reasons. Perhaps the most obvious source is the influence of racial prejudice and bias on the decisions made by police, prosecutors, judges, and juries. The process leading from arrest for an offense to conviction and incarceration is loaded with decision points where agents of the criminal justice system exercise broad discretion and where personal beliefs concerning race and criminality may come into play. The police decide whether to stop a car or question someone in the street, prosecutors decide whether to prosecute an offense and in some instances, whether to charge the offender in state or federal court where the sentences are likely to differ substantially, juries ultimately weigh the evidence and assess guilt, while judges often have great influence over the ultimate punishment. To be sure, police, prosecutors, judges and juries must exercise discretion in order for the criminal justice system to function. However, to the extent that beliefs concerning race and crime (whether or not they are accurate) that are prevalent among the general population also influence the cognitive process and decisions of these agents, discriminatory treatment may adversely affect African-American defendants.

There are many who contend that the police “racially profile” blacks, in that they stop, question, and search minorities solely on the basis of race or ethnicity. Even if blacks and whites commit crimes at the same rate, stopping blacks more frequently than others will result in a
higher black arrest rate and, ultimately, incarceration rate. With respect to traffic stops, there is empirical evidence that the police stop black drivers at a relatively high rate. Using data from the NCVS, the Bureau of Justice Statistics estimates that while the police stopped 10.4 percent of white licensed drivers at least once during 1999, the comparable figure for blacks was 12.3 percent.\textsuperscript{21} Moreover, on average, African-American drivers travel 2,200 fewer miles per year than white drivers (a difference of 18 percent),\textsuperscript{22} a fact that renders the higher stop rates more surprising.\textsuperscript{23} The BLS also found that of those drivers stopped for speeding, 76 of blacks were ticketed compared with 67 percent of whites. The survey also revealed that only 74 percent of blacks stopped by the police felt that they had been stopped for a legitimate reason, compared with 86 percent of whites, and that the vehicles of black drivers were significantly more likely to be searched.

Racial profiling, however, may extend beyond traffic stops. For example, Fagan and Davis (2000) examined New York City police stop and arrest data and found that police stopped 22.6 black residents per 1,000, while stopping only 4.8 white residents per 1,000. There were 7.3 black stops for every black arrest and only 4.6 stops for every white arrest. This latter pattern indicates that police are either worse at predicting criminal activity when they stop blacks or they target blacks for stops more broadly and indiscriminately.

To the extent that the police scrutinize the behavior of African-Americans at a higher level than others, then part of the racial disparity in arrest rates and ultimately incarceration rates will be accounted for by explicit differential treatment. In addition to the behavior of the police, however, differences in treatment may occur during the adjudication process after an arrest. As we have already mentioned, differential treatment may occur in the decision to prosecute, where to prosecute and what charges to bring, jury deliberations, and sentencing. While we will not review the large body of research investigating this question, research findings generally support

\textsuperscript{21} See Schmitt et. al. (2002).
\textsuperscript{22} The average vehicle miles traveled are based on our calculations from the 2001 National Highway Transportation Survey.
\textsuperscript{23} That is to say, if one could adjust for differences in miles traveled the disparity in stop rates between blacks and whites would likely be larger. Another factor that would also be likely to increase the difference in stop rates if one were able to statistically adjust would be the behavioral response of black drivers to the higher likelihood of being stopped. One might argue that a group singled out for scrutiny by the police while driving would alter their driving habits in a manner that reduces the likelihood of being stopped. For example, a black driver may speed less to avoid the police. In fact, only 43 percent of black drivers reported that the reason for their traffic stop was speeding compared to 54 percent of white drivers. To the extent that blacks alter their driving behavior to minimize contact with law enforcement, the higher stop rate for blacks is even more remarkable.
the contention that blacks are treated differently during the post-arrest phases of a criminal prosecution.  

The discussion in this section thus far has focused on how the differential treatment of black defendants and black citizens more generally is likely to influence arrest rates and incarceration rates independently of the any racial differences in the propensity to commit crime. The discussion has emphasized avenues that are based on the discretionary behavior of agents of the criminal justice system. An alternative path that may lead to a relatively high black incarceration rate concerns the race neutral application of criminal justice policy that has racially disparate impacts. For example, to the extent that poor urban drug users consume drugs outdoors while wealthier suburban drug users consume in the privacy of their homes, police strategies that crack down on visible drug use will disproportionately net urban, poor, and largely minority drug users.

Alternatively, policy makers may decide to focus police enforcement efforts on combating certain kinds of drugs and enhance the penalties for drug violations accordingly. To the extent that black drug users consume different drugs than white users, and that blacks consume the more heavily penalized narcotic, race neutral applications of public policy will results in higher arrest and incarceration rates for blacks.

Black drug users are surely disproportionately represented among drug arrests in the United States. Figure 17 compares data on the racial compositions of drug users and drug arrestees. Although African-Americans account for only 17 percent of drug users nationwide, they represent 37 percent of those arrested for drug use.

The disproportionate representation of blacks among drug arrests is linked to the increased law enforcement focus over the past two decades on fighting the use of crack cocaine. The “War on Drugs,” which officially begins in the mid-1980’s, redirected law enforcement resources towards illicit drug markets. Among the policy changes, crack was criminalized at a much higher level than powder cocaine or other drugs, funding for the anti-drug activities of police departments was increased, and arrest rates and prosecutions for drug offense were enhanced. As a result, the proportion of federal prisoners incarcerated for drug offenses skyrocketed from 23 percent in 1980 to about 60 percent in 2000. While arrest rates for white drug offenders increased slightly, the majority of the increase in drug incarceration was born by

---

24 For an excellent entry into this literature, see the study on federal sentencing outcomes by Mustard (2001).
blacks (Tonry 1995). This latter fact was driven nearly in its entirety by the fact that blacks consume crack at a higher rate than whites. Figure 18 shows the racial breakdown of sentenced drug offenders, and indicates that blacks are far more likely to be sentenced to prison for crack cocaine than whites.

Those who possess or sell crack cocaine are currently subject to a punishment in terms of sentence length that far exceeds the punishment for being caught with similar quantities of powder cocaine. For example, a drug offender apprehended with 5 grams of crack cocaine will face the same mandatory sentence as a drug offender with 500 grams of powder cocaine (an illustration of the 100:1 rule). Thus, lower level users and sellers are likely to be sentenced for crack cocaine than for powder cocaine or any other drug. Moreover, black offenders are clearly differentially impacted.

Summary

The empirical research that we have reviewed indicates that higher rates of incarceration for African-American is likely linked to both a high rate of offending as well as differential treatment by the criminal justice system. In addition, certain policies that fall under the title of the U.S. War on Drugs, while perhaps racially neutral in their implementation, have had racially disparate impacts to the detriment of African Americans.

High rates of incarceration have economic, social, and political implications for black men, black families, and black communities. Criminal records tend to negatively impact employment opportunities and wages, thus reducing the attractiveness of legal work relative to criminal activity. Incarceration rates are highest for African American men aged 20-39 years, the ages during which men are most likely to begin families and have children. These high rates of incarceration are socially devastating for black families and communities, as fewer black males are available to fill fatherhood and leadership roles. Disproportionately high incarceration rates may also be politically damaging for black communities, as felons are disenfranchised for the duration of their incarceration in most states and permanently disenfranchised in some. Addressing the high rate of black incarceration is a terribly pressing policy problem that the United States must grapple with for many years to come.

5. Conclusion
The importance of crime control and the impact of criminal victimization on cities worldwide are self-evident. As we have reviewed, in the U.S. crime imposes enormous costs on society, especially for the most marginalized and fragile communities in the nation’s urban areas. We have also seen that those who commit crimes tend to be those who have poor employment prospects. Moreover, being officially branded an ex-felon is likely to hamper future employment prospects and one’s general ability to function as a law-abiding, non-institutionalized citizen.

Of course, systematic study of crime and the motivations behind criminal activity are likely to shed light on new possibilities for controlling crime, diverting potential offenders to more productive activity, and lessening the burden on society.
References


<table>
<thead>
<tr>
<th></th>
<th>Violent crimes per 100,000 persons 12 and older</th>
<th>Property crimes per 100,000 households</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All</strong></td>
<td>2,510</td>
<td>16,690</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>2,730</td>
<td>-</td>
</tr>
<tr>
<td>Women</td>
<td>2,300</td>
<td>-</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2,450</td>
<td>16,510</td>
</tr>
<tr>
<td>Black</td>
<td>3,120</td>
<td>17,970</td>
</tr>
<tr>
<td>Other</td>
<td>1,820</td>
<td>16,360</td>
</tr>
<tr>
<td><strong>Hispanic Origin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>2,950</td>
<td>22,410</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>2,450</td>
<td>16,130</td>
</tr>
<tr>
<td><strong>Annual Households Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $7,500</td>
<td>4,660</td>
<td>18,460</td>
</tr>
<tr>
<td>$7,500 to $14,999</td>
<td>3,690</td>
<td>18,160</td>
</tr>
<tr>
<td>$15,000 to $24,999</td>
<td>3,180</td>
<td>17,920</td>
</tr>
<tr>
<td>$25,000 to $34,999</td>
<td>2,910</td>
<td>17,040</td>
</tr>
<tr>
<td>$35,000 to $49,999</td>
<td>2,630</td>
<td>17,640</td>
</tr>
<tr>
<td>$50,000 to $74,999</td>
<td>2,100</td>
<td>17,880</td>
</tr>
<tr>
<td>$75,000 or more</td>
<td>1,850</td>
<td>18,000</td>
</tr>
</tbody>
</table>

Table 2
Average Metropolitan Statistical Area Crime Rates Per 100,000 Persons, by MSA Population, Percent Poor, Percent Black or Hispanic, and Degree of Black-White Segregation, 2001

<table>
<thead>
<tr>
<th>Population (000s)</th>
<th>Murder</th>
<th>Rape</th>
<th>Robbery</th>
<th>Assault</th>
<th>Burglary</th>
<th>Larceny</th>
<th>Motor Vehicle Theft</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 150</td>
<td>3.9</td>
<td>36.8</td>
<td>86.9</td>
<td>275.5</td>
<td>834.4</td>
<td>2,999.1</td>
<td>229.3</td>
</tr>
<tr>
<td>150 to 300</td>
<td>4.3</td>
<td>42.1</td>
<td>99.9</td>
<td>289.2</td>
<td>832.1</td>
<td>2,964.8</td>
<td>291.7</td>
</tr>
<tr>
<td>300 to 660</td>
<td>5.7</td>
<td>36.9</td>
<td>145.6</td>
<td>333.7</td>
<td>903.2</td>
<td>2,969.7</td>
<td>381.8</td>
</tr>
<tr>
<td>600 +</td>
<td>6.5</td>
<td>32.8</td>
<td>194.0</td>
<td>341.3</td>
<td>814.5</td>
<td>2,771.9</td>
<td>561.1</td>
</tr>
<tr>
<td>Percent poor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 to 9.5</td>
<td>3.7</td>
<td>33.1</td>
<td>111.9</td>
<td>236.3</td>
<td>661.9</td>
<td>2,525.7</td>
<td>317.4</td>
</tr>
<tr>
<td>9.5 to 11.8</td>
<td>5.8</td>
<td>36.7</td>
<td>153.4</td>
<td>316.9</td>
<td>839.3</td>
<td>2,974.3</td>
<td>410.0</td>
</tr>
<tr>
<td>11.8 to 14.6</td>
<td>5.0</td>
<td>37.6</td>
<td>117.7</td>
<td>297.5</td>
<td>863.8</td>
<td>3,020.1</td>
<td>354.2</td>
</tr>
<tr>
<td>14.6 +</td>
<td>5.8</td>
<td>41.0</td>
<td>144.5</td>
<td>387.9</td>
<td>1,014.4</td>
<td>3,174.3</td>
<td>385.7</td>
</tr>
<tr>
<td>Percent black or Hispanic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 to 9.2</td>
<td>2.6</td>
<td>34.6</td>
<td>60.9</td>
<td>179.8</td>
<td>640.7</td>
<td>2,694.0</td>
<td>210.3</td>
</tr>
<tr>
<td>9.2 to 17.1</td>
<td>4.7</td>
<td>37.4</td>
<td>130.1</td>
<td>292.2</td>
<td>817.3</td>
<td>2,989.9</td>
<td>366.4</td>
</tr>
<tr>
<td>17.1 to 30.6</td>
<td>6.2</td>
<td>39.9</td>
<td>152.9</td>
<td>349.9</td>
<td>907.5</td>
<td>2,895.2</td>
<td>414.9</td>
</tr>
<tr>
<td>30.6 +</td>
<td>7.0</td>
<td>36.7</td>
<td>184.2</td>
<td>418.6</td>
<td>1,018.1</td>
<td>3,125.8</td>
<td>477.1</td>
</tr>
<tr>
<td>Degree of black-white dissimilarity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 to 41.2</td>
<td>3.1</td>
<td>37.6</td>
<td>73.0</td>
<td>249.5</td>
<td>738.1</td>
<td>3,014.9</td>
<td>281.0</td>
</tr>
<tr>
<td>41.2 to 52.1</td>
<td>4.4</td>
<td>38.5</td>
<td>108.9</td>
<td>299.7</td>
<td>846.6</td>
<td>2,940.7</td>
<td>324.2</td>
</tr>
<tr>
<td>52.1 to 62.2</td>
<td>5.8</td>
<td>38.8</td>
<td>149.8</td>
<td>354.1</td>
<td>932.1</td>
<td>3,034.5</td>
<td>378.8</td>
</tr>
<tr>
<td>62.2 +</td>
<td>6.9</td>
<td>33.6</td>
<td>193.5</td>
<td>335.0</td>
<td>863.3</td>
<td>2,714.2</td>
<td>480.3</td>
</tr>
</tbody>
</table>

These figures are based on the authors’ tabulations of the agency level Uniform Crime Reports for the year 2001. A Bureau of Justice Statistics crosswalk data file was used to aggregate local reporting units up to the MSA level. Data on the percent blacks and Hispanic, MSA size, the percent poor and the degree of black-white dissimilarity was downloaded from the Lewis Mumford Center for Comparative Urban and Regional Research website, which in turn come from the 2000 Census. These data are available at [http://mumfordl.dyndns.org/cen2000/data.html](http://mumfordl.dyndns.org/cen2000/data.html). The breakpoints used to stratify the samples are the quartiles of the distributions of MSA size, percent poor, percent black or Hispanic, and the black-white dissimilarity score for 2000.
<table>
<thead>
<tr>
<th></th>
<th>All Violent Crime</th>
<th>All Property Crime</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Audens</td>
<td>Blacks</td>
</tr>
<tr>
<td>A. Austin, TX</td>
<td>Whites</td>
<td>Backs</td>
</tr>
<tr>
<td>All Violent Crime</td>
<td>298.1</td>
<td>653.2</td>
</tr>
<tr>
<td>Murder</td>
<td>2.2</td>
<td>5.5</td>
</tr>
<tr>
<td>Rape</td>
<td>45.1</td>
<td>93.6</td>
</tr>
<tr>
<td>Assault</td>
<td>138.6</td>
<td>317.5</td>
</tr>
<tr>
<td>Robbery</td>
<td>112.5</td>
<td>236.7</td>
</tr>
<tr>
<td>All Property Crime</td>
<td>4,663.9</td>
<td>5,769.4</td>
</tr>
<tr>
<td>Burglary</td>
<td>749.7</td>
<td>1,061.6</td>
</tr>
<tr>
<td>Theft</td>
<td>3,564.3</td>
<td>4,132.3</td>
</tr>
<tr>
<td>Auto Theft</td>
<td>349.9</td>
<td>575.4</td>
</tr>
<tr>
<td>B. Seattle, WA</td>
<td>Whites</td>
<td>Blacks</td>
</tr>
<tr>
<td>All Violent Crime</td>
<td>396.9</td>
<td>683.9</td>
</tr>
<tr>
<td>Murder</td>
<td>4.3</td>
<td>8.2</td>
</tr>
<tr>
<td>Rape</td>
<td>22.2</td>
<td>36.7</td>
</tr>
<tr>
<td>Assault</td>
<td>370.5</td>
<td>639.0</td>
</tr>
<tr>
<td>Robbery</td>
<td>252.5</td>
<td>439.5</td>
</tr>
<tr>
<td>All Property Crime</td>
<td>7,171.6</td>
<td>8,529.1</td>
</tr>
<tr>
<td>Burglary</td>
<td>1,240.4</td>
<td>1,476.8</td>
</tr>
<tr>
<td>Theft</td>
<td>4,510.9</td>
<td>5,447.2</td>
</tr>
<tr>
<td>Auto Theft</td>
<td>1,420.4</td>
<td>1,605.1</td>
</tr>
</tbody>
</table>

The figures in this table are weighted averages of census-tract level crime rates in Austin, where either the census tract count of whites, blacks, Hispanics, or poor people are used as weight. Crime data by census tract for the city of Austin comes from the Austin Police Department web cite (http://www.ci.austin.tx.us/police/). Data on population counts by census tract come from the Summary Tape Files 3 of the 2000 U.S. Census of Population and Housing.
<table>
<thead>
<tr>
<th>Age group</th>
<th>Total</th>
<th>White</th>
<th>Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>896</td>
<td>462</td>
<td>3,535</td>
</tr>
<tr>
<td>18 to 19 years</td>
<td>838</td>
<td>321</td>
<td>2,858</td>
</tr>
<tr>
<td>20 to 24 years</td>
<td>2,199</td>
<td>941</td>
<td>7,901</td>
</tr>
<tr>
<td>25 to 29 years</td>
<td>2,624</td>
<td>1,173</td>
<td>10,028</td>
</tr>
<tr>
<td>30 to 34 years</td>
<td>2,401</td>
<td>1,267</td>
<td>8,791</td>
</tr>
<tr>
<td>35 to 39 years</td>
<td>1,906</td>
<td>1,029</td>
<td>7,536</td>
</tr>
<tr>
<td>40 to 44 years</td>
<td>1,286</td>
<td>699</td>
<td>4,932</td>
</tr>
<tr>
<td>45 to 54 years</td>
<td>685</td>
<td>422</td>
<td>2,652</td>
</tr>
<tr>
<td>55 years and older</td>
<td>149</td>
<td>110</td>
<td>512</td>
</tr>
</tbody>
</table>

Figure 1: The Number of Violent Crimes per 100,000 Persons Twelve and Older, 2001

- Homicide: 6
- Rape: 110
- Robbery: 280
- Assault: 2,120

Figure 2: The Number of Property Crimes per 100,000 Households, 2001

- Household Burglary: 2,870
- Theft: 12,000
- Motor Vehicle Theft: 920
Figure 3: The Number of Violent Crimes per 100,000 Persons by Age, 2001

Figure 4: Trends in Overall Violent and Property Crime Rates, 1973-2001
Figure 5: Average Violent Crime Rates for Metropolitan Areas Stratified by Population, Percent Poor, Percent Black or Hispanics, and by the Degree of Black-White Segregation, 2001

Figure 6: Average Property Crime Rates for Metropolitan Areas Stratified by Population, Percent Poor, Percent Black or Hispanics, and by the Degree of Black-White Segregation, 2001
Figure 7: Violent and Property Crime Victimization Rates by Households Location Within Metropolitan Areas and for Rural Areas, 2001

Figure 8: Intent-to-Treat Effects of the Moving to Opportunities Program on Various Measures of Exposure to Crime for Boston Participants
Figure 9: The Crime Participation Decision as a Time-Allocation Choice

A. Legitimate Work Dominates

B. Crime Dominates

C. Mixing Crime and Legitimate Work
Figure 10: The Effect of An Increase in Legitimate Wages on Time Allocated to Criminal Activity
Figure 11: The Effect of An Increase in Non-Labor Income on Time Allocated to Criminal Activity
Figure 12: The Impact of Increased Enforcement on the Crime-Time Allocation Decision

Income

A. Sentence Enhancement Deters All Criminal Activity

B. Sentence Enhancement Deters Some Criminal Activity
Figure 13: The Crime-Supply Curve

Net Returns to Crime

Overall Crime Rate

Crime-supply with low proportion young

Crime supply with high proportion young
Figure 14: Minimizing the Costs of Crime

Costs of Crime

Total Costs of Crime

Victim Costs

Crime Abatement Costs

Overall Crime Rate
Figure 15: The Relationship Between the Net Returns to Crime and the Overall Crime Rate
Figure 16: A Comparison of the Racial Composition of the General Population and the Racial Composition of those Arrested, 2001

Source: Bureau of Justice Statistics.

Figure 17: Drug Use and Drug Arrests by Race, 1998

Source: Uniform Crime Reports and National Household Survey on Drug Abuse.
Figure 18: Percent of Drugs Offenders that are White or Black by Drug Type, 2000

Source: U.S. Sentencing Commission