

# Crime, Punishment, and American Inequality

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## **Abstract**

The growth in income inequality over the last 25 years was tracked by the growth in prison and jail incarceration rates. We report age-specific incarceration rates by education, race and ethnicity and relate these to the growing dispersion of men's incomes. We then review research linking the growth in the penal system to rising inequality. Some researchers trace rising inequality to rising crime, but others link the growth in inequality to shifts in criminal justice policy which expand prison populations independently of criminal offending. Although theory is suggestive and some empirical results indicate the connection between the new inequality and the prison boom, a compelling empirical test awaits direct measurement of the imprisonment risks of marginal men, and a richer model of criminal offending.

Two major social trends steadily reduced the living standards of young low-education American men over the last thirty years. The earnings of men with just a high school education were eroded by the tide of rising U.S. income inequality. While wages fell, growth in the American penal system turned prison and jail time into common life events for low-skill and minority men. The new inequality and the prison boom both date from the mid-1970s, and both trends continued through the end of 1990s. Given this covariation, a causal interpretation would be tempting, but only weakly supported. To explain the link between imprisonment in the United States and the level of economic inequality we report new estimates of incarceration among men and review research relating economic conditions to the extent of carceral punishment.

Economic inequality might influence the scale of punishment in two main ways. Rising inequality may increase crime at the bottom of the social hierarchy, generating more arrests, convictions, and prison admissions. Sociologists and economists commonly maintain that the disadvantaged are more involved in crime, so increased inequality can be expected to have aggregate effects on imprisonment. From an economic perspective, Richard Freeman (1996) argued that young black men in the 1980s and 1990s turned to crime in response declining job opportunities. As a result, contact with the criminal justice system became a regular feature of ghetto life. Troy Duster (1997), similarly claims that the collapse of legitimate employment in poor urban neighborhoods drew young black men into the illegal drug trade, steeply increasing their risks of arrest and incarceration. Both analyses trace the size of the criminal justice system to rising crime rates among disadvantaged men in inner cities.

Alternatively, sociologists of social control argue that rising inequality di-

rectly enlarges the penal population, independently of trends in crime. For social control theories, criminal law functions not just to control crime, but also to contain marginal populations that are perceived as threatening by elites and voters. The direct link between contemporary patterns of inequality and punishment was forcefully claimed by Loïc Wacquant. Like Freeman and Duster, Wacquant (2000) sees the recent growth of the penal system as intimately connected with the decline of urban economies in the later post-war period. In Wacquant's analysis, however, growth in prison populations and city police forces is not driven chiefly by the rise in crime, but by the demise of the ghetto as an economically viable, yet controlling, institution in the lives of African Americans. The "prisonization of the ghetto" represents just the latest form of institutionalized white supremacy.

Has economic inequality boosted the prison population? If so, has the prison population expanded because of crime rates swelled by growth in ghetto poverty or because of increases in the severity of criminal punishment? We begin to answer these questions by first examining trends in prison and jail incarceration over the last two decades. Next, we discuss research linking rising inequality to an increase in crime rates. Then we turn to the social control thesis, in which imprisonment trends respond to economic pressures, but are relatively independent of trends in crime.

### **Recent Trends in Incarceration**

The scale of the penal system is often measured by an incarceration rate that expresses the size of the penal population as a fraction of the total population. The U.S. penal system consists of state and federal prisons that hold felons serving sentences of a year or more and local jails holding inmates for short sentences and defendants awaiting trial. State prison inmates make up

about two-thirds of the penal population. Between 1920 and 1970, the prison incarceration rate hovered around 100 per 100,000 of the U.S. population. Figure 1 shows the imprisonment rate since 1970. At the beginning of this period the imprisonment rate, at 96 per 100,000, stood near its historic average. By 2001 the rate of prison incarceration had increased fivefold to 470 per 100,000. The increase in incarceration was driven by sevenfold growth in the number of prisoners, who numbered 1.34 million by 2001. At the beginning of the new century, jail inmates added another 631,000 people to the total penal population, yielding an incarceration rate of .7 of one percent of the U.S. population.

How does the imprisonment trend compare to shifts in crime and inequality? Figure 1 measures income inequality with the ratio of the ninetieth to the tenth percentile of the distribution of annual income for male workers. As is well-known, male income inequality grew significantly, although far less than the incarceration rate. Figure 1 describes changes in crime with a measure of violent crime. U.S. crime rates are usually measured by reports to police compiled by the FBI (the Uniform Crime Reports) and by a bi-annual household survey (the National Crime Victimization Survey) fielded by the Census Bureau. We calculate a violent crime rate that sums the total number of violent crimes estimated by the victimization survey and the total number of homicides recorded by the FBI. The number of criminal incidents is expressed per 10,000 of the U.S. population. We focus on violent crime because 50 to 60 percent of prison inmates are violent offenders. Between 1973 and 1994, the violent crime rate fluctuated without any clear trend and then fell through the second half of the 1990s.

The relationships between inequality and crime, on the one hand, and incarceration, on the other is shown, in the lower panels of Figure 1. With

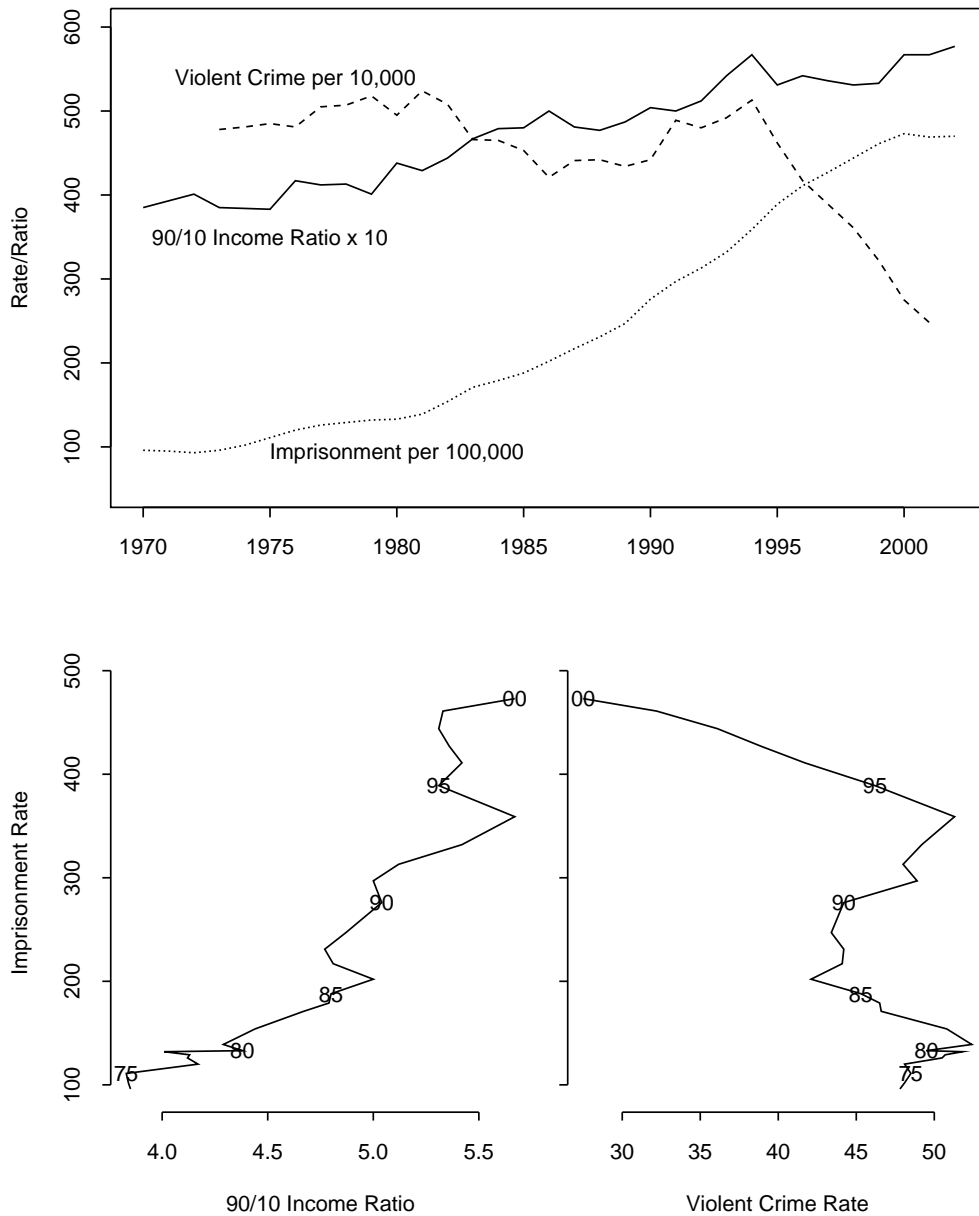


Figure 1. Upper panel: Imprisonment rates, violent crime victimization rates, and 90/10 income ratios for male full-time year-round workers, 1973–2000. Lower left: the change in 90/10 ratios and imprisonment rates, 1973–2000. Lower right: the movement in violent crime victimization rates and imprisonment rates, 1973–2000. Source: *Sourcebook of Justice Statics* (2002); Bureau of Justice Statistics (2002), “National Crime Victimization Survey Violent Crime Trends, 1973-2001.” Washington DC; Bureau of the Census, “Table IE-2 Measures of Individual Earnings Inequality for Full-Time, Year-Round Workers by Sex: 1967 to 2000.”

few reversals, the imprisonment rate climbed steadily with rising inequality. The crime-imprisonment relationship is less clear cut. Between 1973 and 1995, imprisonment rates rose through small increases and declines in violent crime. From 1995 to 2000, incarceration increased steeply as the violent crime rate plummeted. These simple aggregate trends lend at least superficial plausibility to the idea that inequality, not crime, is behind the prison boom.

The weak aggregate relationship between crime and imprisonment suggests that criminal offenders were treated more harshly in the late 1990s than twenty years earlier (Blumstein and Beck 1999; Bogess and Bound 1997). Indeed, the prison population was most directly fed by an increase in court commitments to prison among those arrested and an increase in time served among those admitted. Although the probability of incarceration grew for all categories of arrestees, the imprisonment risk grew most for drug offenders. Growth in time served however was largest for violent offenders. While murderers served only five years on average in 1980, they spent more than eleven years in prison by the mid-1990s (Blumstein and Beck 1999, 36). The criminal justice system has certainly become more punitive, but the role of inequality and the intervening role of crime remains unclear without more detailed information about how incarceration is distributed across the population.

Evidence for the inequality-incarceration connection would be stronger if the risks of incarceration grew most among those who suffered the largest declines in earnings. Because earnings for low-education men deteriorated most (Bernhardt, Morris, Handcock, and Scott 2001), we examine changes in incarceration rates for men at different levels of education. Official correctional statistics are not reported by education, so we formed estimates by combining survey data on prison and jail inmates, counts of the noninstitu-

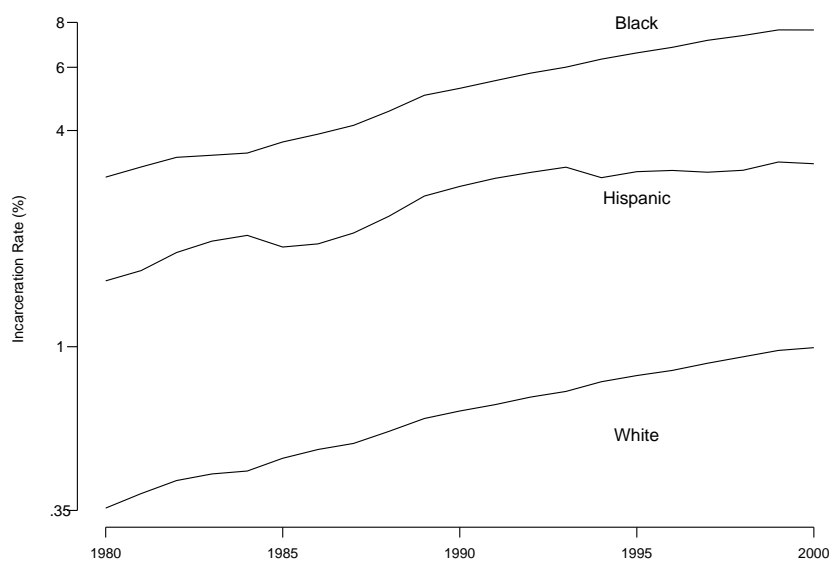


Figure 2. Incarceration rates for white, Hispanic, and black men, aged 18–65, 1980–2000.

tional civilian population from the Current Population Survey, and counts of those in the military (see Appendix). About 93 percent of prison and jail inmates are male, so we focus just on male incarceration rates. Figure 2, shows incarceration trends for white, Hispanic, and black men from 1980 to 2000. The risk of going to prison or jail grew strongly for all three groups over the last two decades and by 2000 the incarceration rate among black men reached nearly 8 percent. Because the incarceration rate is drawn on the log scale, the parallel rise in white and black rates indicates that the white-black ratio in incarceration rates remained roughly constant. Over the most of the time series, black men were about 7 to 8 times more likely to be in prison or jail than white men.

Figure 3 reports incarceration rates for young men at three levels of

schooling: those who have failed to complete high school, those that have finished high school or a GED, and those that have obtained at least some college education. For blacks, whites, and Hispanics, the risk of incarceration falls quickly with rising education. Young high school dropouts are 5 to 20 times more likely to be in prison or jail than young men who have been to college. For all three race and ethnic groups, incarceration rates increased most among high school dropouts. By 2000, white and Hispanic incarceration rates for young male dropouts had reached 5 percent. Although educational stratification in incarceration is similar across ethno-racial groups, differences in the scales of Figure 3 underscore very high rates of incarceration among black men. Incredibly, 29 percent of black male dropouts under age 40 were behind bars on an average day in 2000.

Skeptics may charge that increased incarceration among low-education men is simply an artifact of a selection effect. High school dropouts in 2000 may be a more select group—less able and more crime prone—than in 1980 when drop out rates were higher. Table 1 addresses selection by reporting incarceration rates for college and noncollege men. Noncollege men include dropouts and high school graduates who have received no higher education. Selection effects will be much weaker for noncollege men because their share of the population remained more stable than the proportion of dropouts. For example, the high school dropout rate among black men aged 20 to 40 fell from 27 to 15.7 percent, from 1980 to 2000, while the share of non-college men in this same group fell from 67 to 58 percent. Table 1 shows that between 1980 and 2000 incarceration rates increased at all levels of education. The increases were largest, however, for noncollege men. Indeed, after 1990, virtually all the increase in incarceration has been concentrated among men without college education.

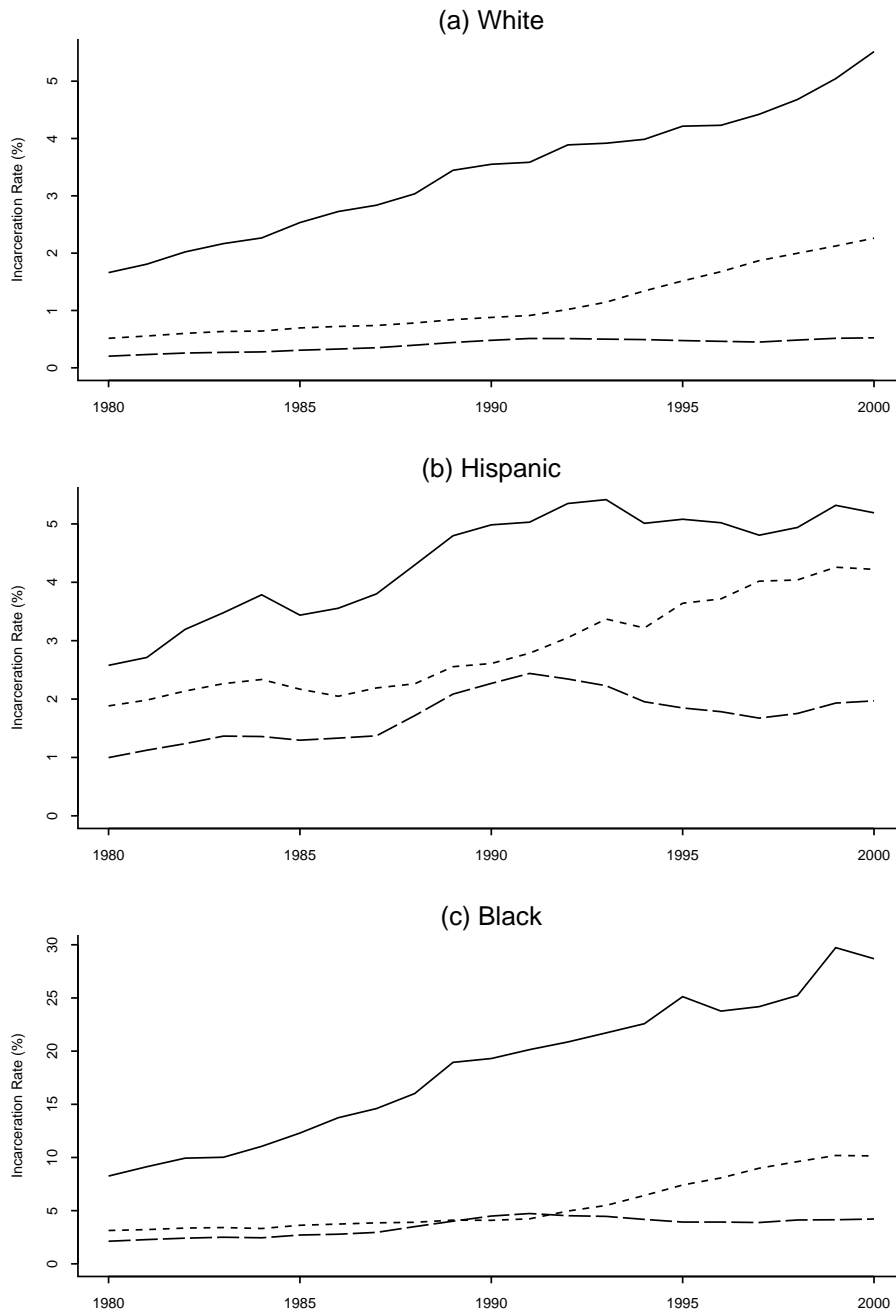


Figure 3. Incarceration rates for men, aged 20–40, with less than high school (solid line), high school/GED (dotted line), and at least some college (broken line), by race and ethnicity, 1980–2000.

Table 1. Growth in percentage incarcerated among noncollege-educated and college-educated men, aged 20–40, by race and ethnicity, 1980 and 2000.

	All	White	Black	Hispanic
<i>Noncollege-educated men</i>				
1980	1.6	0.8	5.2	2.3
1990	2.9	1.4	8.6	4.0
2000	5.4	2.9	15.2	4.8
<i>College-educated men</i>				
1980	0.4	0.2	2.1	1.0
1990	0.9	0.5	4.5	2.3
2000	1.0	0.5	4.2	2.0

Like the increase in inequality then, the growth in incarceration was concentrated among low-skill men. By the 1990s, a college education appears to prevent any increase in the risk of serving time in prison or jail. For black men at the very bottom of the education distribution, the penal system has become a pervasive presence. Other figures that focus on men just in their twenties indicate that incarceration rates for black dropouts exceeded 40 percent in 1999, making time in prison or jail more common than employment for this very low-skill group (Western and Pettit 2002).

Although aggregate crime rates are not consistently correlated with the overall incarceration rate, rising incarceration among low-education males suggests crime may play some role in the prison boom. Many researchers associate the declining economic condition of poor urban areas to rising crime rates, particularly among young black and Hispanic males (e.g., Freeman 1996; Anderson 1990; Wilson 1987; Sullivan 1989; Bourgois 1995). If growing income inequality increased crime rates among some groups, but decreased crime rates among others, the pool of severe offenders in the population might have grown despite little change in overall levels of crime. Under

conditions of rising inequality, the absence of a stable aggregate relationship between crime rates and incarceration rates is thus not sufficient to eliminate crime as a cause of the prison boom. To further investigate the link between inequality and incarceration we next look at the connection between economic disadvantage and crime.

### **Economic Inequality and Crime**

That poverty increases criminal involvement is a longstanding hypothesis in economics and sociology. A large number of empirical studies have examined the relationships between criminal offending, poverty and inequality. While some of this research suggests that the growth in imprisonment is linked to rising crime in poor urban neighborhoods, the burgeoning inner-city crime problem and social control efforts by police and the courts are closely intertwined.

#### *How Economic Conditions Influence Crime*

Two main theories link economic conditions to crime rates. Economists and sociologists have argued in different ways that those with few economic opportunities turn to crime to supplement their legitimate incomes. Criminologists, on the other hand, have examined the informal controls on behavior imposed by the social contexts of employment, family, and neighborhood. For these two perspectives, economic inequality is implicated indirectly; low economic status is seen as the chief cause of crime. In the current context of declining earnings among low skill workers, however, the growth in inequality emerges as an important possible cause of rising crime in poor areas.

The dominant explanation of lower class criminality observes that all people share similar goals of material success, but opportunities to legitimately

attain those goals are unequally distributed. Robert Merton (1968, 223) makes the seminal argument in *Social Theory and Social Structure*: “The moral mandate to achieve success . . . exerts pressure to succeed by fair means if possible and by foul means if necessary.” Frustration at blocked opportunities drives the poor to crime so they might access the material success enjoyed legally by the middle class. Blau and Blau (1982) go further, arguing that ascriptive inequality (like racial inequality), more than inequality based on achievement, appears particularly illegitimate. High levels of racial inequality, rather than economic disadvantage, may fan the frustrations that trigger crime.

While Gary Becker (1968) eschews the language of norms, blocked opportunities and ascription, his explicitly utilitarian account of crime is similar to Merton’s. For Becker, an individual’s choice to engage in crime is produced by calculations of relative cost and benefit. Crime’s cost is given by the severity and certainty of punishment, and by legitimate economic opportunities that are foregone if crime is chosen. Although most economic research focuses on the capacity of punishment to deter crime, Freeman (1996) argues that people increasingly engage in crime as their position in the legitimate labor market deteriorates. In Freeman’s (1996) analysis, the high rate of involvement in the penal system among low-education black men is closely linked to their growing involvement in crime and the steep decline in their economic opportunities through the 1980s.

While strain theory and its utilitarian variant highlight the economic forces that push people into crime, social control theories emphasize constraints that prevent offending. The routines of steady employment, independent of its economic attractions, reduce opportunities for offending. Adopting the language of segmented labor markets, researchers find that men in

primary sector jobs—where work is consistent, routinized and monitored—commit less crime than men in the secondary labor market where employment is irregular (Sullivan 1989; Crutchfield and Pitchford 1997). Research on criminal desistance similarly shows that continuity of employment provides a pathway out of crime for men with criminal histories (Sampson and Laub 1993; Uggen 1999).

Economic disadvantage may also erode informal social control indirectly, through its association with family disruption and neighborhood poverty. Stable families with two parents present in the household can monitor children's activities and divert them from the peer networks that provide a familiar context for delinquency (Sampson 1987). Poor families—that are more likely to be headed by a single parent—have fewer resources to restrain crime (Hagan 1993). Although juvenile crime is often seen to result from family disruption, stable marriages, like steady jobs, are found to be a key source of criminal desistance among adult men with a history of offending (Sampson and Laub 1993; Laub, Nagin, and Sampson 1998). Given that marriage rates are lower among poor (particularly minority) men (Ellwood and Jencks 2001), economic disadvantage may also work indirectly to foster crime among adults.

Like family ties, the social relationships of neighborhood may also constrain or enable criminal behavior. Analysis of the criminogenic character of poor neighborhoods can be traced at least to the classic account of Shaw and McKay (1942). In their analysis, low economic status, ethnic heterogeneity, and residential turnover were destabilizing influences on local communities. Delinquency would flourish under these conditions of social disorganization. Modern criminology has adapted these ideas to argue that communities are densely woven webs of social networks that offer both economic opportunities

and informal social control. Communities lacking these social connections—in which families are weakly tied to employers, voluntary organizations, and friends—risk high rates of violence and other crime (Wilson 1987; Sullivan 1989; Hagan 1993; Sampson 1987). Here, the effect is distinctly contextual. Even middle class citizens are more likely to be involved in crime in poor neighborhoods lacking social capital.

Theories of strain, rational action and informal social control suggest several hypotheses. Strain may be produced when the poor compare themselves unfavorably to the rich. In this case, relative deprivation (measured by inequality) influences criminal behavior. If people commit crime to fulfil basic needs or because social ties are inadequate to constrain criminal behavior, absolute deprivation (measured by economic level) drives crime. The causal force of relative or absolute deprivation ties an individual's economic status to individual offending, but economic conditions may also have contextual effects. Neighborhood poverty may the risk of offending, regardless of an individuals class background.

#### *Empirical Evidence for the Inequality-Crime Relationship*

Three main research designs have been used to study the empirical links between economic conditions and crime. Studies of survey data and official criminal justice data find high rates of criminal offending among lower class men. Aggregate studies examine national time series and panels of states and cities. Finally, ethnographers provide detailed field reports of criminal activity in poor neighborhoods.

Consistent with the economic account of crime, many empirical studies find high rates of offending at the bottom of the social ladder. Braithwaite's (1979) review of 131 studies finds near-unanimous support for individual-

level and contextual effects in research prior to 1980. Official records from police and courts indicate lower class men and male youth are more involved in crime and delinquency than those with middle class backgrounds. Studies of self-reported crime using survey data are more equivocal (Tittle et al. 1978). Still, Crutchfield and Pitchford's (1997) study of the National Longitudinal Survey of Youth offers strong support for the link between crime and economic disadvantage in a national-level survey. Similarly, survey data on criminal victimization shows that the poor are at increasing risk of property crime as inequality increased from the mid-1970s to the mid-1990s (Levitt 1999). There is also strong evidence of contextual effects in which individuals in poor and minority neighborhoods commit crime at relatively high rates, regardless of their social class. Consistent with this earlier research on contextual effects, recent studies using detailed data on finely-defined neighborhoods also find high rates of homicide in areas of concentrated poverty, controlling for past levels of violence, population turnover, density, and measures of social capital (Sampson and Raudenbush 1999; Morenoff, Sampson, and Raudenbush 2001). The micro-level building block of the inequality hypothesis—high levels of crime among the poor—thus obtains strong empirical support.

Given these micro-level findings, is there evidence that changes in economic inequality affect crime rates in the aggregate? A few time series analyses claim that rising inequality since the 1970s increased U.S. crime rates. LaFree and Drass (1996) report that measures of both absolute deprivation (measured by median incomes and unemployment rates) and relative deprivation (measured by family income inequality) are positively associated with black and white arrest rates for robbery, burglary, and homicide in the period 1957 to 1990. Messner and his colleagues (2001) perform a similar

analysis of black and white youth arrest rates for 1967–1998 using a wide array of inequality measures, including the Gini index, the interquartile range, and income shares of the top five percent. Although the consistent effect of child poverty rates indicated the influence of absolute deprivation on crime, conclusions about relative deprivation were highly sensitive to the choice of inequality measure. For example, lagged Gini indexes and income shares for the black income distribution were significantly associated with black youth homicide arrests rates, but contemporaneous effects of these variables and the effects of the interquartile range were insignificant. Messner’s results illustrate the fragility of estimates from short time series. When 20 or 30 time points are analyzed, results can depend strongly on the choice of measures and the time period. Freeman draws a similar conclusion in his review of time series research on crime and unemployment. “The safest conclusion is that the time series are not a robust way to determine the job market-crime link” (Freeman 1995, 180).

Studies of states or metropolitan areas are more promising, enlisting relatively large data sets to estimate the economic sources of crime. In an influential paper, Blau and Blau (1982) analyze a sample of 125 metropolitan areas finding that black-white inequality in socio-economic status was positively associated with violent crime rates, controlling for racial composition, the level of divorce and population size. Areas with high levels of economic inequality in general also tended to have higher levels of violence. A number of researchers subsequently revisited the problem of explaining high rates of violence among African Americans in urban areas. Both absolute deprivation (measured by average income) and relative deprivation (measured by income inequality) were found to influence black homicide rates, though often through the intervening agency of family structure (Sampson

1987; Shihadeh and Steffensmeier 1994). Although these results are suggestive, the cross-sectional design reveals little about the effects of rising income inequality since the 1970s. The research design is also vulnerable to biases due to unmeasured characteristics of localities that may be correlated with crime and economic conditions.

A few studies extended the cross-sectional design by observing cities or states at several points in time. With this panel design, a number of researchers follow the time series analysts in claiming that rising inequality propelled U.S. crime rates. Fowles and Merva (1996) study a large number of statistical models in an analysis of violent and property crime rates in large metropolitan areas, 1975–1990. These panel data yield consistently signed effects for wage inequality and poverty rates on violent crime rates. They conclude that “increases in the level of wage inequality that have been characteristic of the U.S. economy since the 1970s have significantly increased the violent crimes of murder/nonnegligent manslaughter and aggravated assault.” Despite this conclusion and a relative large sample size ( $N = 728$ ), estimated inequality effects are often insignificant at conventional levels. We would also expect inequality measures capturing the lower tail of the income distribution to best describe variation in crime. However, inequality measures that give greatest weight to the bottom of the distribution are found to have the weakest effects (Fowles and Merva 1996, 173). In short, the consistency of coefficient signs across models provides only modest support for the inequality hypothesis.

Other analyses of panel data have not provided strong evidence for the effects of absolute or relative deprivation. A study of violent and property crime rates in 48 states, 1984–1993 found insignificant effects of a Gini index on wages in all of 28 models reported. Slightly stronger results were found for

the effects of absolute deprivation (average wages) on property crime rates. Land, McCall, and Cohen (1990) studied homicide rates for states, cities, and Standard Metropolitan Statistical Areas (SMSA) between 1960 and 1980. They find no consistent effect of inequality at these three levels of aggregation. Still, an omnibus measure of economic deprivation that combines information about absolute and relative deprivation is significantly associated with higher rates of homicide at the state, city and SMSA level.

Although quantitative evidence provides only uneven support for the effects of economic conditions on aggregate crime rates, the connection is strongly drawn by urban ethnographers (see the review of Hagan 1993). Several ethnographers report that the inner-city drug trade provides a key source of economic opportunity for young men in poor neighborhoods with by high rates of joblessness. Phillipe Bourgois's (1996) ethnographic research on Hispanic drug gangs views fuses the effects of relative and absolute and relative deprivation as "the insult of working for entry-level wages amidst extraordinary opulence is especially painful for Spanish Harlem youths." This inequality drives young Puerto Rican men "deeper into the confines of their segregated neighborhood and the underground economy " (Bourgois 1997, 73). The economic significance of drug dealing is also studied by Venkatesh and Levitt (2000) whose research on Chicago's "outlaw capitalism" shows that drug gangs have a well-defined organizational hierarchy in which incomes are graduated from the street sellers at the bottom to the managers at the top. Outside of the context of drug gangs, Sullivan's (1989) account of three New York neighborhoods shows that young black men, unlike their white counterparts, remain involved in crime after leaving school because African American communities offer fewer local employment opportunities and fewer social connections to entry-level jobs. Much more than the quanti-

tative research, urban ethnographers draw a strong connection between unemployment in the legitimate economy and criminal activity among young minority men.

*Discussion of Research on Crime*

While ethnographic research studies just a slice in time, urban crime is often linked to long-term structural changes in urban economies. Sullivan (1989, 230) observes that “the concentration of poverty increased during the 1970s, along with persisting high crime rates. . . the link between un- and under-employment and high rates of street crime in inner-city neighborhoods is pervasive.” The drug trade too replaces the economic opportunity formerly provided by urban manufacturing industry: “Faced with fewer regular jobs, some inner-city black youth find work in the underground economy—notably in street-level drug sales” (Duster 1997, 261). “As the wider economy fails them, many young people, particularly men, seek the underground and adopt its ways” (Anderson 1993, 244). This in turn increases the supply of poor urban minority youth to the penal system. Richard Freeman (1996, 25) makes the case most clearly: “participation in crime and involvement with the criminal justice system has reached such levels as to become part of normal economic life for many young men.” Can we square this account of declining public safety in inner-cities with quantitative research on the economic sources of crime?

The best evidence for the crime-inequality relationship is found in micro-level quantitative studies and ethnographic research. This research shows that economically disadvantaged youth and men are more involved in delinquency and crime than the affluent. High crime rates are also found in poor neighborhoods, even controlling for local patterns of population turnover,

density, and racial composition. There is much weaker evidence that aggregate trends in the economy influence aggregate crime rates. Absolute measures of economic status like average incomes and poverty rates provide somewhat stronger results than relative measures like Gini indexes or wage gaps. Because measures of absolute and relative deprivation tend to be highly correlated, however, we cannot distinguish their effects with confidence (Land et al. 1990; Levitt 1999). Weak results in the macro-level research and the cross-sectional character of the micro-level research thus leave important questions unanswered. We simply do not have good quantitative indications that poor young men are more involved in crime than in the past.

How can we reconcile the modest quantitative findings with claims that crime is increasing in poor urban areas? Freeman's account of rising crime among the ghetto poor provides one possible answer. Freeman (1995, 1996) finds that the criminal propensity of the population increased in the 1980s despite declining rates of criminal victimization. Criminal propensity increased because crime rates fell by less than we would expect given the rise in imprisonment. Most studies reviewed here do not account for increased policing and incarceration, so people's tendency to commit crime may be increasingly under-estimated as social control efforts expand. Steven Levitt (1996, 1997) also reports that criminal activity depends on efforts of the criminal justice system. Levitt reports two analyses in which crime rates are reduced by formal social control—imprisonment in one study, policing in another. These analyses suggest that the absence of a clear aggregate relationship between crime and the economy may be obscured by the criminal justice system which reduced crime over a period when economic conditions deteriorated. Against this possibility, however, evidence for economic effects is not strong even

when we account for the relationship between criminal processing and crime rates. Levitt (1996, 1997) estimates the effects of unemployment and median incomes on violent and property crime rates in a panel study of states and only finds consistent effects for unemployment on property crime. Unusually for research on the effects of inequality, Kelly (2000) and Doyle et al. (1999) also allow for the mutual dependence of policing and crime. Their results, however, offer little evidence for the effects of economic inequality on offending.

The influence of policing and incarceration on crime rates is not just a technical issue for statistical estimation. It highlights the difficulty of conceptualizing and measuring crime in a way that is independent of its official recognition by criminal justice authorities. While statistical analysis focused on how the expanding criminal system might suppress the crime rate, a reverse effect may also operate. The appearance of increased criminality in the population may be due to broader definitions of crime and more punitive approaches to criminals. Trends in criminal processing can illuminate how the official stamp of criminality is dispensed by police, the courts, and corrections. Further analysis of the link between economic inequality and the growth of the penal system thus leads us to look at trends in the system of punishment.

### **Economic Inequality and the Severity of Punishment**

In contrast to claims that the new inequality fed the prison boom by increasing crime among the poor, inequality may directly affect the scale of punishment, without the intervening influence of rising crime. From this perspective, institutions of criminal punishment have their own logic that is distinct from criminal behavior in the population. A direct association

between inequality and punishment is suggested by aggregate trends. Why, though, would the scale of punishment increase with inequality, independent of the level of crime?

*Explaining the Effect of Inequality on Punishment*

Frankfurt School social scientist, Georg Rusche (1978 [1933]; Rusche and Kirchheimer 1939) famously pioneered an account of the relationship between criminal punishment and the labor market. Rusche viewed crime as a product of economic necessity, deterred only when the severity punishment exceeded the ravages of poverty. Quoting Shaw, Rusche ([1933] 1980, 12) observed that “if the prison does not underbid the slum in human misery, the slum will empty and the prison will fill.” Historic forms of punishment—fines, torture, imprisonment—were thus shaped by historic variation in the economic situation of the dispossessed. The unemployed, representing the most desperate and crime-prone workers, occupy a special place in this theory. Elites would stem the threat of rising crime by intensifying punishment as the surplus population expanded; the level of punishment would contract under conditions of labor scarcity.

For the contemporary descendants of Rusche, the criminal justice system embodies a social conflict between authorities and marginal populations. While Rusche viewed punishment chiefly as means to deter crime, modern proponents see punishment as controlling a broad array of threats to social order posed by troublesome populations. The level of punishment is expected vary with the size of the troublesome group. In empirical studies, threatening populations have been defined in terms of their employment status, (e.g., Box and Hale 1982), race or ethnicity (Hall 1978), or some combination of the two (Melossi 1989; Spohn and Holleran 2000). If not crime, what threat

is posed by these marginal groups? Some claimed that authorities viewed troublesome populations as endangering, not just public safety, but the economic order in general (Quinney 1974; Spitzer 1975). Those at the bottom of the social hierarchy may refuse to work, they may steal from the rich, reject the dominant values of hard work and achievement, and advocate revolutionary change (Spitzer 1975). The destabilizing potential of young men at the bottom of the social structure is well-captured by Spitzer's (1975, 645) term, "social dynamite," evoking volatility more than chronic disadvantage. While the economic distance between rich and poor drives one conflict theory of punishment, another claims that cultural distance intensifies the punishment of the disadvantaged. Tittle (1994) argues that authorities are often unable to identify with disadvantaged populations; they may also be fearful that those populations are generally dangerous. Under these conditions, marginal populations will attract the full force of the social control apparatus.

Framed in the abstract, social threat accounts of punishment sound conspiratorial. By what concrete process do dominant groups actively use the state's legitimate violence against those who are relatively powerless? Three specific mechanisms might join social and economic disadvantage to criminal justice supervision. First, legislators perceiving poor and marginal populations as dangerous or unruly may write criminal law to contain the threat. Second, police may surveil and arrest the poor more frequently than the affluent. Third, once in the court system, poor defendants may receive harsh treatment from judges.

Criminal law embodies a class bias in the sense that it regulates activities of the poor more than the rich. If criminal sentences are increased, the scale of punishment will increase, even if the level of offending is unchanged. In addition to the severity of sentences, the extent of class bias also varies with

the kinds of class-related behaviors that are criminalized. Historically, the criminalization of poverty was most transparent in laws against vagrancy. The class bias of vagrancy statutes has been widely observed, not least by Anatole France who archly questioned the “majestic equality” of a law that “forbids the rich as well as the poor to sleep under bridges.” Dubber (2001) suggests that criminal possession has replaced vagrancy as the main statutory control on the poor. Like vagrancy, possession offenses—covering not just drugs, but drug paraphernalia, weapons, stolen property and a host of other items—punish just the possibility of, rather than actual, criminal victimization. The abstract notion of social threat is thus concretely expressed in laws of possession.

Although possession offenses listed in the state penal codes proliferated over the last twenty-five years, drug possession and related drug control policy are most widely associated with the growth in U.S. imprisonment rates. In the current period, sentencing enhancements for drug offenses and the expansion of laws of possession appear to have disproportionately affected the poor African Americans in urban areas (Tonry 1995; Dubber 2001). Over the past three decades, Congress and most state legislatures adopted mandatory prison sentences for drug possession or trafficking (Bureau of Justice Assistance 1998, 7). Mandatory minimum sentences provide a plausible explanation for the increased risk of incarceration, given arrest, among drug offenders (Blumstein and Beck 1999). The proportion of drug offenders in state prison increased fivefold between 1974 and 1997; drug offenders now account for about 30 percent of all state prisoners. Growth in federal imprisonment of drug offenders has been even more dramatic. In the early 1970s, there were virtually no drug offenders under federal supervision, but today around 60 percent of federal prison inmates are serving time for drug convictions.

In addition to stiffer penalties for drug crime, state legislatures supported a variety of sentencing innovations that toughened laws for other offense categories. This statutory front in the war on crime has expanded the use of mandatory minimum prison sentences, habitual offender laws, and truth-in-sentencing provisions, while reducing the possibility of early release through parole. By 1996, all 50 states had some kind of mandatory minimum sentence, most commonly for repeat offenders or crimes involving firearms (Bureau of Justice Assistance 1998; Tonry 1994). Mandatory minimums seem most likely to influence prison admission rates while time served in prison may be lengthened by habitual offender laws that enhance sentences for offenders with prior records. Time served may also be extended by truth-in-sentencing laws that mandate incarceration for 70 percent or more of a given sentence. The truth-in-sentencing movement was given additional impetus in 1994 when the Federal government provided financial incentives for legislation requiring incarceration for 85 percent of a sentence. By 2000, 40 states had adopted truth in sentencing measures (Ditton and Wilson 1999). Historically, states provided for early release through parole hearings. By 1996, the discretionary authority of parole boards was replaced in 14 states by determinate sentencing schemes imposing fixed terms reduced by “good time” on regulated schedule. Although some sentencing reforms were intended to limit the arbitrary treatment of offenders, reduced discretion was often purchased at the price of presumptive imprisonment and longer sentences. A few studies attempt to assess the effects of sentencing policy on prison admissions, although a strong empirical test still awaits the use of longitudinal data for a large number of states (cf. Marvell and Moody 1996; Sorensen and Stemen 2002). In short, a variety of specific changes in the law of criminal sentencing may explain the increase in admission rates and time served that

characterize the prison boom, but so far there are few systematic empirical tests.

Formal social control efforts are not just reflected in the criminal law, but also in policing which may disproportionately burden poor and minority communities. In part police may intensively monitor poor communities, given their levels of crime, because more of daily life, and illegal activity, transpires in public space. Ethnographic research suggests that the purchase and consumption of drugs, drunkenness, and domestic disturbances are more likely to take place in public in urban areas, but in private homes in the suburbs. Consequently, poor urban residents are exposed to police scrutiny to a greater degree, and run a greater risk of arrest, than their suburban counterparts. (e.g., Duneier 2000; Anderson 1999; Bourgois 1996). In addition, the police often view poor minorities as more involved in crime. Consequently ghetto residents are treated with greater suspicion and as threatening to public order (Wilson 1968, ch. 2; Chambliss 1999). The threat of crime often inheres not just in individuals, but in poor neighborhoods as a whole; thus police will often proactively maintain order in well-defined dangerous areas where poor residents are highly concentrated (Herbert 1997; Bass 1999). Just as the police are distrustful of ghetto residents, the residents often doubt the legitimacy of the police. In these cases, the poor will not only be policed more intensively, they will also be more likely to disobey police directives (Huo and Tyler 2000), increasing their risk of arrest. The association of policing effort with the threat perceived from troublesome populations explains research finding that the size of the police force and police expenditures increase with the size of a city's black population, even controlling for urban crime rates (Liska, Lawrence, and Benson 1980; Jackson 1989). Closer to our focus on inequality effects, cross-sectional data from 170 cities shows that—

controlling for the size of the police force and the homicide rate—the use of deadly force by police is more common where the black-white income gap is large (Jacobs and O'Brien 1998). In short, urban ecology and relations of mutual suspicion arouse the social control efforts of police. As a result, poor urban populations are exposed to relatively high risks of police arrest, even given their relatively high rate of criminal involvement.

Finally, judges and prosecutors may treat poor and minority defendants more harshly than others. Research on the sentencing behavior of judges can be traced back at least to Sellin (1935, 213) who observed:

The prisoner who stands before [the judge] is not merely an offender who must be dealt with according to the rules laid down by lawmakers, but he is a person who represents a class or a group in society toward which the judge may have certain feelings, perhaps of disapproval or approval.

In the modern context, researchers argue that nonlegal factors affect sentencing through judges' assessments of a defendant's culpability and potential for reform. Low status defendants may be viewed as more blameworthy than high status defendants. Although counter-intuitive in light of economic theories of crime, judges may follow public opinion in viewing an individual's checkered job history as the product of a lack of effort, particularly if the individual is black (Kluegel 1990; see also Gilens 1999). Such judgments may also affect assessments of defendant culpability (Steffensmeier, Ulmer, and Kramer 1998, 770). Thus a study of presentence investigation reports in New Haven found that unemployed defendants were considered more blameworthy and less open to rehabilitation (Daly 1994, 230). Researchers also argue that judges view low-status defendants, especially the unemployed, as more likely

to return to crime (Greenberg 1977; Albonetti 1991). Steffensmeier and his colleagues (1998, 767) suggest that the employment and education status of a defendant may be used by judges to predict dangerousness. Albonetti (1991) argues that predictions of recidivism are especially likely where crime is attributed to the defendant's enduring dispositions, rather than the product of temporary circumstance. Consistent with this idea, sentencing research finds that, controlling for offense characteristics and criminal history, particularly severe risks of incarceration are imposed on low-status unemployed defendants—either minorities or those living in high unemployment areas (Spohn and Holleran 2000; D'Alessio and Stolzenberg 2002).

In sum, theories of formal social control suggest that rising economic inequality may drive an increase in penal severity, independent of trends in crime. Rising inequality expands problem populations and increases their distance from the mainstream. Lawmakers may respond by writing tough-on-crime penal codes. We would expect to see the effects of tougher sentences reflected in state incarceration rates. Police may respond with aggressive law enforcement aimed at preventing crime among groups that appear threatening. The effects of policing might be evident at lower levels of aggregation, closer to police jurisdictions within cities and counties. Finally, judges may respond to rising inequality by increasing penal severity for the disadvantaged. In this case, increased punitiveness in the criminal justice system could be in sentencing outcomes in the county courts.

#### *Empirical Evidence for the Inequality-Incarceration Relationship*

Far less research estimates the effects of economic inequality on punishment than on crime. Quantitative studies of incarceration rely on one of three kinds of research designs. First, some researchers analyze time series of in-

carceration rates or prison admission rates for a single country, usually the United States. The second variety of macro-level studies examines variation across states or counties, or a few waves of observations on these aggregates. Common dependent variables for this cross-sectional research include state or county prison admission rates or state imprisonment rates. Finally, researchers also study how local economic conditions, generally in counties, influence the sentencing of individual defendants. Sentencing studies have predicted sentence length and the probability a convicted defendant will receive a prison sentence (the “in/out decision”). In trying to assess the social control effects of economic conditions, all three research designs also introduce statistical controls for criminal offending.

Most research on the economic determinants of incarceration follow Rusche and Kirchheimer, by estimating the effects of unemployment and other measures of surplus population. Chiricos and Delone (1992) review results from 44 published studies, finding that analyses of prison admission rates in national time-series provide strong and consistent evidence for the hypothesis that higher levels of incarceration are found under conditions of high unemployment. Macro-level studies of prison populations also support the labor surplus theory of punishment. Results are weaker for individual-level studies of sentencing, in which the defendant’s employment status is a key predictor. In sentencing research, employment status coefficients are typically signed consistently with theory, but statistically significant results are only found a quarter of the time. Chiricos and Delone (1992) conclude that there is stronger and more consistent evidence for the labor surplus hypothesis than was previously acknowledged.

Despite this conclusion, Chiricos and Delone (1992) likely over-estimate support for the effects of unemployment on incarceration. Although the

aggregate times-series studies provide the strongest evidence for unemployment effects, such studies often analyze overlapping or highly correlated time series of U.S. incarceration figures. Consequently, different studies yield similar results because similar data is analyzed, not because the labor surplus hypothesis survives multiple independent tests. The individual level studies are collectively more informative because sentencing data come from a variety of jurisdictions. Each individual-level sentencing analysis independently updates evidence for the hypothesis. The individual-level design is also more powerful because sample sizes are relatively large; evidence against the unemployment effects are more compelling as a result. Because sentencing studies yield positive and significant employment effects in just one-fourth of all analyses, other contextual factors may be driving variability in results across jurisdictions. Indeed a second generation of research has found that adverse sentencing outcomes are most likely for offenders with several deficits. For example, recent research finds that a defendant who is young and black, unemployed and black, or unemployed and living in a poor area is more likely to be incarcerated, controlling for criminal history and offense characteristics (D'Alessio and Stolzenberg 2002; Steffensmeier et al. 1998; Spohn and Holleran 2000; Nobiling, Spohn, and Delone 1998).

Although sentencing research provides a stronger test of the social control effects of unemployment than macro-level studies, the sentencing studies are conservative in at least one important respect. In most cases, sentencing research focuses on the disposition of convicted defendants. (A few studies analyze pre-trial incarceration, but most examine the in/out decision or sentence length.) By the time a defendant is convicted, most of the social control process has already transpired. All the defendants in the sentencing sample—whether they receive probation or prison—have been policed, ar-

rested, charged, and convicted. The economic status of the offender pool at this stage may be very low compared to the offender pool in the population. Relatively modest results for economic effects in sentencing decisions should be interpreted as applying to this highly select population, and not general evidence for the weakness of the economic sources of punishment.

Although employment status is the main focus of research on criminal justice outcomes, several studies investigated the effects of economic inequality. Like research on unemployment effects, analyses of the links between inequality and incarceration have examined national time series, cross-sectional data on states and counties, and individual-level sentencing data. In many cases, researchers were not chiefly interested in the effects of inequality. Such studies, however, give us a usefully disinterested picture of the sensitivity of inequality effects to different model specifications. Dye (1969) provides one of the first quantitative studies. In a cross-section of 50 states, using data from 1959, he reports a correlation of .35 between the Gini index on family incomes and the rate of imprisonment. Interestingly, the black-white difference in educational attainment correlates with imprisonment at .43 (Dye 1969, 1091). Measurement strategies are quite similar in current research. Inequality is usually measured with a Gini index or a black-white difference in incomes.

Table 2 summarizes the results of eleven studies published between 1978 and 2001 analyzing U.S. data. In general, evidence for the effects of inequality on imprisonment is quite weak. Across the three main research designs, the strongest results are reported in two time series analyses of Jacobs and Helms (1996; 2001). When an annual measure of income inequality is used, the authors report several positive and significant effects of inequality on both the prison incarceration rate and the prison admission rate. Stronger results are

reported for the effects of the variance of incomes than for Gini coefficients. This result may have a substantive basis. The variance is far more sensitive than the Gini index to the spread of a distribution. The variance may better capture the nonlinear functional form of the inequality-incarceration relationship. Alternatively, the variance is more volatile and the observed results may be driven by a few extreme observations. More generally, short time series such as these provide little information about the effects of inequality. The empirical base of the time series research could be enlarged by disaggregating the measures of inequality. Modest evidence for the impact of inequality on imprisonment in time series analysis may also be due to the highly aggregated dependent variables. We would expect the effects of rising inequality to fall on those in the lower tail of the income distribution. The time series design might usefully distinguish between imprisonment rates of those at different levels of income or education. Sharper measurement may yield stronger results.

Inequality effects are much weaker in macro-level studies of states or counties. In these studies, where cross-sectional variation predominates, Gini indexes on family income are only weakly related to prison incarceration rates. U.S. states with high levels of inequality do not generally have the highest incarceration rates, once adjustments are made for crime rates and the racial composition of the population. The panel study reported by Jacobs and Carmichael (2001) goes furthest, showing that states with the largest increases in inequality between 1970 and 1990, did not experience the largest increases in incarceration rates. The design of the cross-sectional studies is rather weak. Relatively little data is brought to bear on the problem and specification errors may well be large. Analysis of panel data provides a more encouraging approach, but so far research has relied on just two or

Table 2. Summary of published research on the effects of economic inequality on incarceration and sentencing.

Study	Data	Dep. Variable	Results
<i>Macro-Level Time Series Analysis</i>			
1. JH (2001)	U.S. series, 1946–97	PIR	Gini positive and significant in 3 of 3 models, controlling for 1992–97 period; positive and significant in 2 of 6 other models.
2. JH (1996)	U.S. series, 1950–90	State PAR	Gini (Census) insignificant; variance of incomes (CPS) positive and significant in 5 of 5 models,
<i>Macro-Level Cross-Sectional or Pooled Cross-Sectional Analysis</i>			
3. JC (2001)	50 states, 1970, 1980, 1990	Log PIR	Gini insignificant in 6 of 6 models.
4. GW (2001)	49 states, 1971, 1981, 1991	PIR	Gini insignificant in 5 of 5 models.
5. AA (1998)	50 states + DC, 1993	PIR, JIR, PIR+JIR	Gini positive and significant for JIR and JIR+PIR, not significant for 4 other models.
6. HS (1997)	269 urban counties, 1980, 1990	Change in PAR	County Poverty rate and mean income insignificant in one model.
7. BC (1988)	48 states, 1982	Black, white PIR	Black-white relative risk of poverty negative and significant for white PIR, insignificant for black PIR.
8. J (1978)	47 states, 1960	Imprisonments per arrest, burglary and larceny	Gini coefficient has pos. signif. effect on burglary and larceny imprisonment ratios, in 4 out of 4 models.
<i>Micro-Level Cross-Sectional Analysis</i>			
9. B (2000)	PA felony sentences 1991–94	Imprisonment, sentence length	County black-white income diff. significant and positive for white imprisonment, not significant for black imprisonment and sentence length.
10. CCK (1998)	FL felony sentences, 1992-1993	Habitual offender sentence	County white-black income diff. insignificant in 3 of 3 models.
11. M (1987)	GA felony sentences, 1976–82	Imprisonment, split sentence, sentence length	County income s.d. negative and significant for sentence length; county black-white income positive and significant for split sentences, negative and significant for sentence length. Significant interactions indicate defendant's punished more severely within demographic and offense categories in high inequality counties.

*Note:* PIR=prison incarceration rate, PAR=prison admission rate, JIR=jail incarceration rate. Citation key is reported in the appendix. Study abbreviations: (1) Jacobs and Helms (2001), (2) Jacobs and Helms (1996), (3) Jacobs and Carmichael (2001), (4) Greenberg and West (2001), (5) Arvanites and Asher (1998), (6) Hochstetler and Shover (1997), (7) Bridges and Crutchfield (1988), (8) Jacobs (1978), (9) Britt (2000), (10) Crawford et al. (1998), Myers (1987).

three waves of data. As for the time series analysis, virtually all studies use highly aggregated measures of incarceration, like state-level imprisonment. This level of aggregation ignores perhaps the main implication of theories of inequality effects—that the risks of punishment will be highest for those at the edges of the income distribution.

Sentencing studies represent the most disaggregated approach to the analysis of incarceration. Most research on inequality in sentencing has focused on racial, rather than economic, inequality. Summarizing research up to the early 1980s, Hagan and Bumiller (1983) and Kleck (1981) conclude that there is little evidence for broad race differences in sentencing once a defendant's prior record and offense are accounted for. However, analyses of large jurisdictions, like states, may conceal discrimination in local areas (Crutchfield, Bridges, and Pitchford 1994). Race may also have indirect effects, for example, on the accumulation of a criminal history.

A few studies examine the effects of local patterns of inequality on sentencing outcomes. The effects of inequality on individual sentencing decisions are typically estimated in a contextual analysis where local levels of inequality are related to a defendant's sentence length or probability of imprisonment. As for the macro-level research, the results are modest or mixed. There is evidence that blacks are punished relatively harshly in counties with high levels of black-white income inequality (Britt 2000; Myers 1987). Against these results, the standard deviation of the county income distribution negatively affected sentence length among felony defendants in Georgia (Myers 1987), and black-white income differentials were unassociated with sentencing under a habitual offender statute in Florida (Crawford, Chiricos, and Kleck 1998).

*Discussion of Research on Punishment*

Research in the sociology of punishment sheds some light on the direct link between economic inequality and criminal justice punishment, but theory and empirical research could both be strengthened. The weakest versions of the inequality-incarceration theory explains the modern penal system in terms of its functionality for capitalism by maintaining a reserve army of labor. Jankovic (1977, 20) appears to take this position, arguing that “imprisonment can be used to regulate the size of the surplus labor force.” More commonly, the penal system is viewed as functional for capitalism by eliminating threats to social order posed by problem populations (Quinney 1974; Spitzer 1975; Box and Hale 1982). Few researchers today would explain incarceration in terms of its possible effects; instead a stronger theory emphasizes the association made by lawmakers, police, and court officials between criminality and poverty or other kinds of social marginality.

The empirical evidence linking economic disadvantage to criminal punishment is uneven. There is reasonable evidence that the scale of punishment in the United States over the last 50 years has increased in periods of rising unemployment. The incarceration-unemployment relation is unstable, however, and over the last 10 years, imprisonment rates increased as joblessness declined (Michalowski and Carlson 1999). Microlevel data also provide little support of a consistent relationship between the sentence received by a convicted and his employment status. Evidence for the effects of economic inequality is weaker than for the effects of unemployment. Still, some analyses of aggregate times series yield positive results and a few sentencing studies find harsher punishment in counties with high levels of inequality.

## **Conclusions and Future Directions**

What, then, do we know about the relationship between the parallel increases in American economic inequality and imprisonment? Supporting the inequality explanation of the prison boom, incarceration rates increased most among those whose economic losses were largest—among men without college education. By 2000, about 3 percent of young noncollege white men and 15 percent of noncollege black men were in prison or jail. Roughly double these fractions had acquired prison records at some point by their mid-thirties (Pettit and Western 2002). Sociological and economic theory helps explain why increased economic inequality would raise the level of crime among the disadvantaged, and why formal social control efforts would intensify against the poor. Empirical evidence for these theories is, so far, not compelling. At any given point in time in the recent past, we can be quite sure that poor men and residents of poor neighborhoods were more involved in street crime than the affluent, but we are much less certain that criminal activity increased among the poor as inequality rose over the last twenty years. Similarly, there is evidence that police patrol poor and minority neighborhoods more intensively than crime rates would lead us to expect; judges in some jurisdictions can treat young, jobless, and minority defendants relatively harshly. There is much less evidence that these efforts expanded with the sliding economic position of those with little education. Trends in the law of criminal sentencing are strongly suggestive of an increasingly punitive attitude to the poor, but even in this case we lack a large-scale empirical test.

Our review suggests that understanding of the link between economic inequality and punishment might be extended in two main ways. First, a sharper empirical test enlisting much more data could be obtained by dis-

aggregating the key dependent and independent variables. Right now, our confidence in the inequality-incarceration relationship is mostly sustained by a time series regression on 40 or 50 data points. The main empirical insight of social control theories—that punishment risks are concentrated on marginal groups—is largely ignored with this highly aggregated design. By combining macro and microlevel data, incarceration risks for specific birth cohorts, race and education groups could be calculated. Measurement could thus be focused on those groups contemplated by social control theory. An example of this approach is provided by the detailed incarceration rates reported in Figure 2 at the beginning of the paper.

This disaggregated research design also leads us to reconsider how our key predictors are measured. Unemployment rates or population Gini indexes are blunt instruments for measuring the size or the economic status of marginal populations. Consider unemployment first. Unemployment is generally interpreted to measure the size of a problem population triggering punitive treatment by the courts or police. With rising unemployment however, newly laid-off workers who are joining the ranks of the unemployed will tend to be more able and at relatively low risk of crime. In contrast to modern version of the Rusche-Kirchheimer hypothesis, we might expect that attributions of criminality to the unemployed will weaken in times when unemployment is relatively common. Sentencing research and work by Wacquant (2000), Tonry (1995), and Duster (1996) similarly suggest it is not cyclical unemployment, but more permanent forms of economic disadvantage which elicit social control efforts. Because spells of joblessness tend to be longer for minorities and those with little schooling, disaggregated measures may capture social control processes better than the usual unemployment rate. From this perspective, joblessness among specific race-education groups would provide

a better measure of persistent disadvantage.

A similar approach could be taken to studying the effects of inequality. Instead of associating Gini coefficients with aggregate incarceration rates, attributions of criminality might be better measured by the distance between a group and some reference point. This approach tries to capture the intuition that the incarceration rate of low-skill blacks, for example, has increased because their economic position has declined relative to other groups. From this perspective, attributions of criminality stem from marginality or the relative position of troublesome populations. Deaton and Paxson (2001) take this approach to studying the effects of inequality on mortality. In the study of criminal punishment, Bridges and Crutchfield (1988) move in this direction by examining the effects of black-white income differentials on state imprisonment rates for blacks and whites. The analysis could go further by focusing just on men at different levels of education.

These suggestions for the utility of disaggregation are motivated to achieve a tighter mapping between a group's place in the social hierarchy and its risk of incarceration. Although this link between economic status and punishment is the engine of social control theories, macro-level research rests on the hopeful assumption that sub-group variation dominates the data at the aggregate level.

The second main extension to research on inequality and punishment involves elaborating the intervening role of crime. Research on social control typically treats crime as a confounding source of variation. Crime rates must be controlled to identify the uncontaminated effect of economically-motivated social control. Thus, virtually all the studies estimating the effects of unemployment or inequality include some adjustment for the level of criminal offending. Although this approach is standard, there are several

difficulties. If the measured crime rate is based on police reports, the observed level of crime will also be a product of social control efforts. These social control efforts will affect some offenses (drugs, assault, and public order offenses) more than others (homicide). Estimating the effects of inequality controlling for the Uniform Crime Reports rate of index crimes, will lead us to under-estimate the impact of social control processes. Crime rates based on victimization data may thus be more useful when estimating the effects of economic conditions on incarceration.

The link between crime and incarceration may also be a source of bias when estimating the social control effects of inequality on imprisonment. While studies of deterrence and incapacitation find that increased policing and imprisonment reduce crime (Levitt 1996, 1998; Nagin 1998), this research is largely ignored in studies of formal social control. Indeed, our review found no study that took account of this dependence (or endogeneity) in estimating the effects of unemployment or inequality on imprisonment. The endogeneity bias, at least in the recent period, may be of reasonable size as several researchers argue that the crime drop of the 1990s is partly due to the rising rate of imprisonment (Rosenfeld 2000; Spelman 2000). If the deterrence research is correct, and incarceration nontrivially reduces crime, this endogeneity may also bias our estimate of the effects of inequality. If unemployment or inequality is positively related to crime, we will tend to over-estimate the effect of economic conditions on incarceration.

Because formal social control processes affect official crime rates and the dependence of crime rates on incarceration rates may bias estimates of economic effects, it is useful to estimate the effects of economic conditions on incarceration, without controlling for crime. Models of this kind are rarely estimated. A reduced form specification that includes only exogenous vari-

ables as predictors would estimate the total effect of incarceration through crime and formal social control processes. From our perspective this total effect is intrinsically interesting. If rising inequality sends large numbers of men to prison, this remains an important social fact whether the causal pathway is through crime, or state responses to the threat of crime. The total effect estimate also provides a benchmark that can be compared to the social control effect obtained by controlling for crime. Such an analysis would offer an approximate assessment of the relative importance of formal social control, in linking inequality to incarceration.

These methodological challenges should not obscure the main point, that imprisonment trends and theory are highly suggestive of a close link between the growth in American income inequality and the growth of the penal population. Prior empirical research is intermittently supportive, but a strong empirical test has not yet been conducted. Such a test must compare the relative risks of incarceration among those that lost ground economically in the 1980s and 1990s, to those who advanced. A compelling test must also take crime more seriously. More than just a confounding source of variation that biases estimates of the social control effect, the level and distribution of crime suffuses the social control process. Crime and social control are mutually determining, and economic conditions may boost prison populations through their effects on the level of criminal offending. A detailed analysis of imprisonment with a richer model of crime thus promises valuable new knowledge about the links between the inequality and American punishment.

### Appendix. Calculating the Incarceration Rates

The disaggregated incarceration rate for age-education-race group  $i$  in year  $t$  ( $t = 1980, \dots, 2000$ ) is estimated by:

$$\hat{r}_{it} = \frac{\hat{I}_{it}}{\hat{I}_{it} + \hat{N}_{it} + M_{it}},$$

where  $\hat{I}_{it}$  is the estimated prison and jail inmate count,  $\hat{N}_{it}$  is the estimated count for the civilian noninstitutional population, and  $M_{it}$  is the observed count of active duty military personnel. This approach follows Western and Pettit (2000), although the current estimates provide incarceration rates for Hispanics, and include military personnel in estimates of the total population. The inmate count is estimated from the Survey of Inmates of State and Federal Correctional Facilities (1979–1997) and the Survey of Local Jails (1978–1996). Because the surveys are only conducted approximately every five years, they are used to calculate proportions of annual aggregate counts published by the Bureau of Justice Statistics. Proportions for inter-survey years are interpolated. Separate series of inmates counts are calculated for jail, state prison and federalprison. The civilian noninstitutional population is estimated using annual data from the merged outgoing rotation group files of the Current Population Survey (1980–2000). The military counts are directly observed and reported in the Defence Manpower Data Center’s Officer and Master Files, maintained by the Department of Defence.

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