The Supply of Youths to Crime

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Crime is a major problem for the United States, creating misery for its victims, costing the country substantial resources on the criminal justice system and private crime-prevention activities, and turning many inner-city neighborhoods into social disasters for residents and the rest of the society. Young men, usually out of school young men with limited skills and employment or earnings prospects, commit a disproportionate number of crimes. Inner-city black youths are the most crime-prone group in the society, with other inner-city blacks as victims.

From the 1980s through the early 1990s, the number of persons incarcerated increased massively, incapacitating many criminals and increasing the risks of being caught and penalized for crimes. These factors should have greatly reduced the crime rate. Yet the standard administrative measure of crime, the FBI's Uniform Crime Reports (UCR), stabilized in the 1980s. It fell from 1980 to 1984, then rose through 1991, then fell modestly through 1993. The standard survey measure of victimizations, the National Crime Victimization Survey, which typically shows two to four times as much crime as the UCR due to crimes not reported to the police, recorded a sizable drop in crime, but the declines was far below what could be expected on the basis of the incapacitation of so many criminals and the increased risk of apprehension and incarceration. Crimes that are best measured—murder and auto thefts—showed no sign of falling: murders stabilized, while auto thefts increased.

Why has crime remained high? If, in 1976, a political leader had announced a tough anti-crime program that would triple the number incarcerated and increase the risk of imprisonment for crime, we would all have expected drastic reductions in crime rates. But no such drastic reductions occurred. The economist naturally seeks an explanation in
terms of the labor market determinants of the supply of young men to crime. For crime to persist at high levels despite massive incarcerations, there must be offsetting increases in the returns to crime or an outward shift in the supply schedule of young men due to other factors, such as increased drug use, family breakdown, social disorder, etc.

In this paper I explore whether changes in labor market factors may explain some of the persistence of high crime in the United States. First, I show that participation in crime among American men has become so large that crime is an integral part of the lives of many men. Then I examine the argument that the 1980s-1990s job market was an important factor maintaining the crime rate. I present evidence that youths often combine crime and legitimate work and sketch out a "foraging" model of the supply of youth to crime that helps explain this pattern of behavior. There is a brief conclusion.

**Dimensions of Criminal Participation**

How many Americans are involved in serious crime?

A useful identity for examining criminal involvement decomposes the number of crimes per capita as follows:

\[
# \text{crimes/population} = \left( \frac{# \text{ in crime-prone group/population}}{# \text{ who commit crimes/# in crime-prone group}} \right) \times \left( \frac{# \text{ crimes/# who commit crimes}}{# \text{ who commit crimes}} \right).
\]

The first term on the right-hand side of (1) measures the share of the population typically involved in crime. For simplicity, I take the crime-prone group as consisting of men, disproportionately those aged between 18 and 34 years. Despite considerable attention given to the effect of the age distribution on crime, changes in this share have had only modest effects on the crime rate (Phillips and Votey 1990), so I will not focus on demographic developments in this paper.

The remaining terms in (1) reflect the behavior of the crime-prone group. The second term is the criminal participation rate—the proportion of the group who commit crimes. The third term is the average intensity of criminal activity—the number of crimes committed per criminal.
There are four ways to estimate the criminal participation rate. First, administrative records on the number apprehended and convicted of crime (and thus "under the supervision of the criminal justice system") provide one estimate of the number involved in crime in the recent past. The number is a lower bound because it excludes criminals who have not been apprehended or who have "beaten the rap." In 1993 roughly 1 man was incarcerated in the United States for every 50 men in the workforce. For every person incarcerated, an additional 2.1 were on probation and 0.5 were on parole. This gives a figure of 1 man "under the supervision of the criminal justice system" per 15 men in the workforce. One in 15 involved in such serious crime as to be under supervision? My immediate reaction when I did this calculation was to say, I must have made a numerical mistake. The number seems outlandishly large. But here are the estimates for 1993:

859,400 men in state or federal prison
428,800 in jail
1,288,200 total incarcerated

2,690,400 probated after conviction for crime
600,700 on parole
3,291,100 probated or paroled
4,579,300 under supervision of criminal-justice system
69,600,000 male workforce

Since most crimes are committed by younger men (aged 18-34), the estimate of the criminal participation rate of young men is even larger: 1 out of every 9 men aged 18-34 in the United States is under supervision of the criminal justice system. The figures for blacks are: 1 black man in prison for every 11 men in the workforce; 1 black man under supervision of the criminal justice system for every 4 men in the workforce. Combine race and age, and you find the remarkable fact that 37 percent as many black men aged 18-34 are under supervision of the criminal justice system as in the labor force.

These numbers are a decimal place beyond comparable statistics in other advanced countries. Since many of the incarcerated are recidivists in crime—studies show percentage re-arrested are on the order of 50 percent to 70 percent depending on the number of years covered (Needels 1993) and have poor employment records years into the
future (Freeman 1992)—this population can be viewed as a relatively permanent part of U.S. society—our equivalent of Europe’s long-term unemployed. Leaving prison is not like leaving long-term unemployment—a step back toward a relatively permanent legitimate job. It is often simply a return to criminal life until the police apprehend the ex-offender again.

The second source of data on criminal behavior is the self-reported criminal activity of individuals. These data are possible contaminated by reporting bias. If people don’t admit to criminal activity, self-reported crime would understate criminal participation. If, on the other hand, young men think it “cool” to claim to commit crimes, self-reported numbers would overstate criminal participation. Criminologists have explored these biases through studies that ask people whether they had been arrested and then comparing their responses to police records. The evidence shows that young white males report criminal activity roughly accurately, but that young black males underreport criminal participation (Hindelang and Hirschi 1981), possibly because criminal involvement among blacks extends beyond “hard core” youths. The proportion of young men who admit to committing crimes on major surveys ranges from 20 percent to 40 percent (Freeman 1992).

The third source of data is the number of arrests. To be sure, not everyone arrested is guilty of crime, but the number of arrestees does indicate the number of persons whom police believe have committed crimes—X might be wrongfully arrested but somewhere there is Y who in fact committed that crime. The number of arrests in the United States is immense. In 1992 there were 9.9 million arrests of men (including those under 18) and 2.2 million arrests of men for the crimes judged most serious by the FBI index of crimes (U.S. Department of Justice, Sourcebook, 1994, table 33). Most of those arrested were between the ages of 16 and 44 (85 percent), but a surprising 13.3 percent of those arrested for serious crimes were aged 13-15. Taking as the base population the male civilian labor force in 1992 (69.2 million) gives a ratio of arrests per man in the labor force of .14 overall and of arrests for index crimes of .032 per man. Since 30 percent of the male workforce is 45 or over, the ratio of arrests per labor force participant below that age is substantially higher. Using the crime module of the National Longitudinal Survey, I calculate that there are 2.3 arrests per
young man arrested in a given year. Dividing the ratio of arrests per man by 2.3 suggests that the number arrested was about 6 percent of the male workforce in 1992, and the number arrested for index crimes was 1.4 percent of the male workforce.

The fourth source of data on criminal behavior is number of crimes committed. From (1), it is apparent that given an estimate of the average number of crimes per criminal, we could use the number of crimes on the UCR or victimization surveys to determine the criminal participation rate. There are two sources of data on the number of crimes per criminal. Some surveys of prisoners ask inmates for detailed histories of crimes, arrests, and so on—which can be used to estimate crimes per period of time. These surveys yield estimates on the order of 12 to 15 crimes per year (Piehl and DiIulio 1995). Some surveys of youths, including the National Longitudinal Survey of Youth (NLSY), ask similar questions of those who are not incarcerated. Using the NLSY, I calculate that the average number of crimes per young man who admitted to crime was 6.6. Given the number of crimes presumptively committed by men, this implies that 2.6 percent as many men committed crimes as were in the workforce in 1992.2

Whichever of these estimates one prefers, it is clear that a large proportion of American men, particularly young men, are involved in criminal activity.

The Trend in Incarceration and Criminal Propensity

Exhibit 1 shows that from the mid-1970s or so through 1993 the number of persons in prison or jail in the United States increased massively. The rate of increase in the 1980s averaged 8.5 percent per year, so that in 1993 there were over three times as many persons in prison or jail as in 1976! The combination of an increasing number of criminals incarcerated and unable to commit crimes and a roughly constant UCR crime rate implies that the number of crimes committed by the noninstitutional population rose; either criminal participation among nonincarcerated men went up, or the number of crimes per criminal went up to compensate for the incarceration of so many criminals. The falling rate of victimization in the victimization survey could yield a
contrary conclusion, but in fact the predicted drop in victimizations due to incapacitation exceeds the actual drop by so much as to imply a large increase in the rate of criminal participation (Freeman 1994).


![Graph showing prison and jail population from 1950 to 1990.](image)


**NOTE:** Estimates of jail population before 1983 based on prison population.

For the period 1977 (prior to the large increase in the jail and prison population) to 1992, I have estimated the trend in criminal activity by the noninstitutional population. I calculated the reduction in the number of crimes that the increased number of prisoners should have produced under hypotheses about the number of crimes the newly incarcerated would have committed on the street. Then I compared this expected number of crimes to the actual number of crimes in the UCR or victimization survey. The ratio of crimes committed to the predicted number gives an index of the *Propensity to Commit Crime*—a mixture of criminal participation and intensity of criminal activity that reflects the overall involvement in crime by the noninstitutionalized population.
The following example shows precisely how I calculated the index. Assume a population of 100, in which there are 40 crimes committed per year, giving a crime per person of .40. If each criminal commits 10 crimes, there are 4 criminals in the population. When the government apprehends and imprisons 2 criminals, the number of crimes should, all else the same, fall to 20, and crimes per person would fall roughly in half, to .204 (= 20/98). Any crime rate beyond .204 implies an increase in the index of crime propensity. If 30 crimes were committed, the propensity would have risen 50 percent; if 40 crimes were committed, the propensity would have risen 100 percent. If the number of crimes committed per criminal was constant, the criminal participation rate must have risen by those amounts. Incapacitation "created opportunity" for new entrants into crime.

Exhibit 2 gives my estimates of criminal propensity from 1977 to 1992. Based on UCR data, I assume 10 crimes committed per person incarcerated. The calculations indicate that the increase in the prison/jail population should have more than halved the crimes committed per male. But between 1977 and 1992 crimes per male rose, albeit modestly. Reconciling these trends, I estimate that the propensity for criminal activity by noninstitutionalized men increased by 163 percent! My suspicion is that most of this rise is due to an increase in the criminal participation rate. Also reported in exhibit 2 are similar calculations using the victimization data. Because there are more victimizations than UCR crimes, I assume the number of victimizations per criminal to be 30. In this case, I estimate that criminal propensity increased by 80 percent from 1977 to 1992. Alternative estimates of crimes per incarcerated person would affect the extent of the rise in propensity but not its direction.

Exhibit 3 uses supply-demand schedules to show alternative ways to account for the upward trend in criminal propensity. The "demand curve" in the diagram is not citizens' demand for being mugged, robbed, or murdered (though for some crimes, such as drug purchases, it could be so interpreted) but a schedule of criminal earnings opportunities. The schedule slopes downward because more criminals presumably reduce the potential rewards from an additional criminal act. The supply curve is depicted as a response to criminal earnings; it will shift outward if legitimate earnings fall and inward if they increase. In panel A, the supply curve of crime is upward sloping. When more criminals
are imprisoned, the supply shifts inward, which raises the wages of criminals. Assuming unchanged criminal opportunities, the only way to maintain a given number of crimes is for the noninstitutionalized to commit more crimes, shifting the curve back to its original position. Panel B shows that an increase in the criminal opportunities curve—due, say, to an increased consumer demand for drugs, for instance—could have a similar effect, maintaining the number of crimes at higher rewards, despite huge incarceration. Panel C gives a qualitatively different picture: the elasticity of supply to crime in this case is infinite (presumably because crime pays off much more than legitimate work). This means that there is no incapacitation effect on crime: the police arrest Joe for dealing drugs on main street and presto! Harry takes Joe's old place on the street. Given that economists rarely find infinite elasticities, I regard this as an unlikely situation, but it highlights the point that the more elastic the labor supply curve the less effect will incarceration have on the crime rate.


SOURCE: Calculated by dividing the actual number of crimes by the expected number of crimes, where the expected number is estimated by taking the 1977 number of crimes minus the increased number of male inmates from 1977 to the given year times the postulated number of crimes that inmates would have committed: 10 in the UCR and 30 in the victimisation survey. The graph in Freeman (1994) using these data divides the crimes by the male population 16 and over.
Exhibit 3. Supply of Crime, Criminal Opportunities, and Incapacitation

A. Upward sloping supply with incapacitation

B. Increased criminal opportunities

C. Infinite elasticity; no incapacitation effect
In short, economics suggests that we look for an explanation of the persistent high level of crime despite mass incarceration in potential increases in the rewards to crime and a highly elastic supply curve of youths to crime.

Changes in Relative Rewards to Crime

As a first approximation, consider the crime decision as a dichotomous choice between legitimate and criminal work. The person considering crime compares the present value of earnings from crime, net the loss of earnings due to being apprehended and imprisoned, with the present value of earnings from legitimate work; weighs the riskiness of crime; and makes his decision. Assuming that the marginal criminal is risk-averse, there will be a compensating differential premium from crime. The three factors that enter the calculus are legal earnings, risks and extent of penalties, and illegal earnings.

From 1973 through the 1990s, the real earnings of the less-skilled young men who constitute the bulk of the crime-prone population fell sharply. In the 1980s, the position of these men in the earnings distribution also fell as overall income inequality skyrocketed. Moreover, despite the putative job-creating effects of pay reductions, their hours worked also fell and their employment/population rate fell relative to that of the more skilled. The magnitude of the worsened job market opportunities for less-skilled young men was sufficiently large—drops in real earnings of 20-30 percent, accelerating in the 1990s (Mishel and Bernstein 1994)—to have at least potentially raised their propensity to choose crime.3

Working in the opposite direction is the increased likelihood that an individual involved in crime would be incarcerated in the 1980s. Justice Department data suggest that the clearance rate for crimes known to the police has been relatively constant at about 20 percent (U.S. Department of Justice, Sourcebook, 1994, table 4.24). The combination of a rising rate of imprisonment, constant clearance rate, and stable crime rate implies that those apprehended for crimes were incarcerated more frequently or longer. As time in prison has trended downward, the data imply a greater probability of incarceration upon apprehension for
crime. Indeed, Langan (1991) estimates that the chance that someone who commits a crime would be imprisoned rose for individual crimes from 1974 to 1986: for robbery, it increased by 47 percent (from .19 in 1974 to .28 in 1986); for burglary, by 61 percent (.095 to .153); for larceny, by 59 percent (.017 to .027); for drugs by 108 percent (table 4). Mendel (1995) reports that between 1975 and 1989 the expected prison time for a violent crime nearly tripled (p. ii). The increased probability of incarceration should, all else the same, lower the present value of crime.

What is the net effect on the returns to crime versus legitimate work from the increased probability of incarceration upon arrest and the reduction in legitimate earnings for crime-prone youths? This is a difficult question, whose answer depends on the crime, whether or not it involves violence as well as property crime, and so on. My back-of-the-envelope calculations suggest that the 30 or so percent drop in legitimate earnings dominates the increased probability of incarceration. The largest increase in imprisonment rates shown by Langan is .091 for robbery. If the person imprisoned is locked up for 1.25 years (median time served before release from prison in 1986 was 15 months according to Langan 1991, table 1), the loss in lifetime earnings from increased chance of incarceration for robbery would be, roughly, 11 percent (1.25 x .091). This falls short of the 30 percent drop in real earnings from legitimate work. Since time locked up will differ depending on repeat offenses, however, and since imprisonment reduces future legal employment opportunities and possibly increases future illegal opportunities, this is an exceedingly crude calculation. At the minimum, however, it suggests that the increased chance of incarceration did not “dominate” the reduction in legitimate earnings in the returns to crime calculation.

Although criminal earnings are—for various reasons—difficult to estimate, it is difficult to argue that they have fallen in real terms since the 1970s. The limited evidence that I have examined suggests the opposite, at least for youth. This information consists of responses to survey questions on perceived criminal and legitimate earnings and employment opportunities at the outset of the 1980s and at the end of the decade. In 1980 the NBER Inner City Youth Survey asked youths in Boston, Chicago, and Philadelphia whether they thought they could make more “on the street” than in a legitimate job. It also asked them
about their perceptions of the availability of criminal opportunities. The 1989 Boston Youth Survey, conducted at the peak of the booming "Massachusetts Miracle" job market, asked the same questions. Between these dates, the proportion of youths who reported that they could earn more on the street went up, from 31 percent in the three cities and 41 percent in Boston in 1980 to 63 percent in Boston in 1989. Similarly, the proportion who said they had "chances to make illegal income several times a day" roughly doubles over the period, to reach nearly 50 percent in 1989 (Freeman 1992).

Consistent with this, youths who made money from crime in the 1980 NBER Survey of Inner City Youth reported average annual criminal earnings of $1,807 per year, whereas in the 1989 Boston Youth Survey youths reported average criminal earnings of $3,008—which, deflated, implies a real increase of some 5 percent. These annual criminal earnings are, the reader will note, hardly large numbers. Even those who said they committed crimes weekly in 1989 reported earnings of $5,376 over the year—hardly the stuff of riches. Still, transformed into "hourly pay," these figures imply hourly earnings from crime of around $10.00 for criminal activity in Boston in 1989. This exceeds the $7.50 youths reported from legitimate work and substantially exceeds take-home pay from legitimate work, after social security and tax deductions. Estimates of earnings for adult criminals tell a similar story. Reuter surveyed drug dealers in Washington, D.C. and found that they earned $2,000 per month net of expenses, which he translated into $30.00 per hour, making drug selling "much more profitable on an hourly basis than are legitimate jobs available to the same person" (Reuter, MacCoun, and Murphy 1990, p. viii). He further estimated that the illegitimate earnings of drug dealers exceeded their legitimate earnings by enough to make it financially worth their while to spend one year in jail for every two years they sold drugs. In the 1986 Inmate Survey I found that criminals who said all of their earnings came from crime made $24,775 per year (Freeman 1993), a figure comparable to Reuter's $2,000 a month; but so few criminals reported that all their earnings were from crime, this is an unrepresentative statistic. Wilson and Abrahamse (1992) stress that criminal earnings from burglary/theft, robbery, and swindling are not that high and may fall short of the legitimate earnings available to those criminals (though not necessarily on an hourly basis).
My bottom-line assessment is that the returns to crime increased relative to those from the job market for crime-prone less skilled men in the 1980s, and that the hourly rewards to crime exceeded the hourly rewards from work. Assuming this to be the case, the next question is whether the magnitude of supply response to the change in returns is large enough to have contributed significantly to the observed trends.

Supply Responses

There are five pieces of evidence that suggest that supply responses may be sufficiently large to play a role in the rise in criminal propensity.

1. *The demographics of the criminal population*
   Those who commit crimes consist disproportionately of persons with low legitimate earnings prospects—the young, the less-educated, persons with low test scores, etc. As long as these people do not have commensurately lower criminal earnings prospects and as long as they respond to differential legal/illegal incentives, this distribution is qualitatively what virtually any labor supply model would predict. In fact, evidence from the NLSY suggests that greater schooling, age, and test scores pay off more in the normal job market than in crime, so that the observed demographics of the criminal population is consistent with differing rewards for characteristics and responses by individuals to those characteristics.6

2. *The estimated effect of joblessness on crime*
   Literature reviews (Chiricos 1987; Freeman 1983, 1994) find that higher unemployment is associated with greater crime. Most studies comparing crime rates and unemployment rates across areas find that high unemployment areas have high crime rates, though coefficients of response are not large, and an occasional study finds little relation. Most time series studies also find that unemployment or related measures of aggregate labor market activity are associated with rises in crime, but cyclical changes in labor market tightness cannot explain secular changes in criminal propensity. Perhaps most striking, comparisons of individuals show that those who commit crimes are more likely to do so when they are unemployed. This is consistent with a
joblessness effect on crime though it could simply reflect the timing of criminal behavior. Finally, longitudinal evidence on the correlates of violent criminal behavior over time shows that persons who have engaged in "serious violent behavior" are more likely to terminate this if they are employed than if they are unemployed (Elliot 1994, table 1).

3. Estimates of the effect of inequality on crime

Some studies have explored the relation between inequality in a geographic area and the rate of crime. Given that criminals are low-skilled, greater inequality is a plausible indicator of the rewards to crime (robbing the wealthier) compared to low-skill work. Most studies find that more inequality is associated with more crime (see the reviews by Chiricos 1987; Freeman 1983, 1994). Land, McCall and Cohen (1990) even report that homicide rates are correlated with measures of inequality across cities. In the most comprehensive work to date, Lee (1993) found a substantive positive relation between inequality and crime rates across SMSAs in 1970 and 1980. His estimated effect of inequality on crime suggests that the increased inequality in the 1980s induced a 10 percent increase in the UCR, which falls far short of the observed rise in the propensity to commit crime in figure 2. When Lee compared changes in inequality and crime among SMSAs, however, he found no relation, possibly because of the decreased signal-to-noise ratio in changes in inequality, but also possibly because the cross-area relation reflects an omitted area variable rather than a true inequality-crime link.

4. Estimates of the crime behavior of individuals

Studies that examine the effects of incentives on the criminal behavior of individuals are potentially the most compelling. In the first such major study in economics, using the NBER Inner City Youth Survey, Viscusi (1986) found that perceptions of risk combined with earnings opportunities influence the supply of young blacks to crime. Using the same data, I found a significant positive relation between criminal participation and whether individuals perceived that they could earn more on the street than in the job market (1987). More recently, Grogger (1994) estimated an econometric model of the crime behavior of young men in the NLSY that makes extensive use of the fact (to be examined shortly) that many youths who engage in crime also work. His estimated supply elasticity to crime is roughly unity: a 10 percent decrease in the real wages of youths would increase their crime rate by nearly 10
percent. Applying this elasticity to the observed drop in real earnings of less-skilled young men, he predicts a 23 percent increase in crimes committed by these youths from the mid-1970s to the late 1980s, which he points out is of comparable magnitude to the 18 percent increase in the index arrest rate for the young over the period.

These studies, particularly Grogger's, should move priors toward the job market explanation of the rise in criminal propensity. But none of the studies are smoking guns. Viscusi and Grogger used sophisticated structural models—economists' lenses as it were—for viewing the evidence. My analysis used self-reported incentives and could simply be a consistency check: yes, people involved in crime thought it paid off better than those who did not. Is it possible to provide something more?

The NLSY asked one question in its 1980 crime module that can be used to examine supply responsiveness to the relative rewards to crime. The question asked respondents the proportion of their income that came from illegal activity. Holding fixed time worked at legitimate jobs, and the number of crimes committed, persons whose income consists disproportionately of illegal earnings will have higher criminal pay relative to legitimate pay. They should thus be more deeply involved in crime than others, and all else the same, end up incarcerated in the future.7

In the NLSY the proportion of income from illegal sources in 1980 does in fact help explain incarceration years into the future. Exhibit 4 documents this claim with a simple linear probability analysis in which the dependent variable is being interviewed in jail in 1983, 1986, and 1989 for a sample of young men who reported some criminal earnings in 1980. For simplicity of presentation, I include only two regression controls: the numbers of crimes committed and weeks worked in the past year. Calculations that include persons who report no criminal income or that add additional controls tell the same basic story: the higher the relative pay from crime in 1980, the greater the chance a young man is incarcerated in ensuing years. The magnitude of the relative criminal earnings effect varies among the years, seeming to rise over time: it averages around 0.10, which given the proportion who go to jail (.03) and the mean proportion of income from crime (.20), implies an elasticity of supply to relative rewards on the order of 1.5. This is in the same ballpark as Grogger's estimate, and implies that the
decline in the legitimate wages of youths might account for roughly one-third of the increased criminal propensity

Exhibit 4. Linear Probability Estimates of the Effect of Illegal Income on Future Incarceration

<table>
<thead>
<tr>
<th></th>
<th>Jail 1983</th>
<th>Jail 1986</th>
<th>Jail 1989</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean of dependent variable</td>
<td>.03</td>
<td>.04</td>
<td>.04</td>
</tr>
<tr>
<td>Percentage of income that is illegal, 1980</td>
<td>.05 (.03)</td>
<td>.10 (.03)</td>
<td>.14 (.03)</td>
</tr>
</tbody>
</table>

Control variables

<table>
<thead>
<tr>
<th></th>
<th>Jail 1983</th>
<th>Jail 1986</th>
<th>Jail 1989</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of crimes committed (/100)</td>
<td>.02 (.10)</td>
<td>.04 (.01)</td>
<td>.07 (.01)</td>
</tr>
<tr>
<td>Weeks worked 1980 (/100)</td>
<td>-.03 (.03)</td>
<td>-.01 (.03)</td>
<td>.03 (.04)</td>
</tr>
<tr>
<td>R²</td>
<td>.01</td>
<td>.04</td>
<td>.10</td>
</tr>
<tr>
<td>F</td>
<td>4.64</td>
<td>11.30</td>
<td>29.50</td>
</tr>
<tr>
<td>Number of observations</td>
<td>938</td>
<td>790</td>
<td>772</td>
</tr>
</tbody>
</table>

SOURCE: Calculated for sample of out of school youths in NLSY who reported some illegal income in 1980.

5. The labor supply behavior of men with falling real earnings Topel (1993) and Juhn, Murphy, and Topel (1991) have shown that time worked by men in the lower deciles of the earnings distribution fell in the 1980s as their real earnings fell. This relation has the flavor of a labor supply response to falling real earnings. Interpreted in this way, they estimate that the elasticity of labor supply on young men in the lower deciles of the earnings distribution is on the order of 0.20 to 0.30 (table 9). While, as I shall shortly document, many youths commit crimes while working, and while the supply of time to crime is not the simple complement of the supply of time to work, the finding that low-paid men worked less as their real wages fell is consistent with the claim that as real wages fell these men were more involved in crime.
Work and Crime: A Foraging Model

Treating the decision to engage in crime as a dichotomous choice between legal and illegal work misses an important aspect of criminal activity. Because most criminals are self-employed, and because the U.S. job market is characterized by considerable mobility and flexibility, it is easy to combine work with crime at a point in time or to move between the two activities over time. Joe holds a job, and mugs and robs someone he meets on a dark empty street, sells some drugs on the weekend, or steals from his employer. Maybe he sells drugs for a while, decides the street is too dangerous, gets a legitimate job for a while, loses that job, and goes back to selling drugs. Ethnographic research by Reuter, MacCoun, and Murphy (1990), Fagan (1991), and Hageborn (1994) shows that legal and illegal work often overlap among young drug sellers.8

To see how much overlap exists between legal and illegal work, I have examined the work activity of persons involved in property crime in the NLSY. My analysis supports the view that crime and work are not exclusive activities, save possibly for those sufficiently involved in crime that they end up in jail or prison in the near future. Exhibit 5 records the employment status of young men according to four measures of criminal activity: admitted committing a crime, earning illegal income, being charged with a crime, and ending up incarcerated in the following year. The sample is limited to out-of-school youths not involved in military service. There are differences in employment between those involved in crime and those not involved in crime: a 3-point difference between those who committed and those who did not commit crime; a 7-point difference between those with positive incomes from crime and those without such income; a 13-point difference between those charged with crime and those not charged. But these differences are far below the magnitudes that would support a crime-employment dichotomy. The only grouping that yields something close to that is between youths who end up incarcerated a year later and the rest of the sample—a 35-point difference in employment.

Ecology models of foraging behavior (Stephens and Krebs 1986) offer an insightful way to analyze the tendency for youths to engage in both illegal and legal work activities, either simultaneously or by moving back and forth between them. These models apply economic opti-
mizing analysis to the problems faced by animals that forage for food. The animal must make several decisions in a short period of time: whether to "prey" on a particular food source it encounters or turn that prey down to search for better prey; whether to exploit opportunities in a given patch or search for new opportunities; and so forth. The parallels with youths "foraging" for earnings, legal or illegal, are striking. Youths must decide whether to mug someone they meet on the street; take a short-term job when they encounter an offer; burglarize in the local community or try some adjoining area; sell drugs to employees, if working, or to customers in a street market.

Exhibit 5. Employment in Survey Week by Criminal Behavior of Out of School Non-Military Youth

<table>
<thead>
<tr>
<th>Criminal group (#of observations)</th>
<th>Employed at survey week 1980</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admitted committing property crime in 1980 survey</td>
<td></td>
</tr>
<tr>
<td>Yes (2,369)</td>
<td>70.3</td>
</tr>
<tr>
<td>No (1,847)</td>
<td>73.3</td>
</tr>
<tr>
<td>Reported positive illegal income</td>
<td></td>
</tr>
<tr>
<td>Yes (952)</td>
<td>66.0</td>
</tr>
<tr>
<td>No (3,265)</td>
<td>73.2</td>
</tr>
<tr>
<td>Charged with crime</td>
<td></td>
</tr>
<tr>
<td>Yes (744)</td>
<td>58.6</td>
</tr>
<tr>
<td>No (3,279)</td>
<td>71.5</td>
</tr>
<tr>
<td>Jail in following year</td>
<td></td>
</tr>
<tr>
<td>Yes (46)</td>
<td>30.4</td>
</tr>
<tr>
<td>No (4,223)</td>
<td>65.5</td>
</tr>
</tbody>
</table>

SOURCE: Tabulated from NLSY, with youths in school coded as missing. In these tabulations I have also excluded those in the military. Inclusion of youths in the military reduces the employment difference between those who reported crime and those who did not (strengthening the argument in the text) but does not noticeably affect the difference in employment rates for those in jail the following year. The admitted crimes figures are based on people who said they committed any of the following crimes in the past year: shoplifting, stealing, using force to obtain things, selling drugs, conning someone, stealing automobile, breaking into building, aiding gambling operation. This leaves out some violent nonproperty crimes. Their inclusion increases the numbers committing crime without changing the results.
The foraging models direct attention to differing "reservation wages" to various money-making activities and the determinants thereof. When returns fall below the reservation wage, the youth will reject an opportunity and go on to something different. According to the NBER Inner City and Boston Youth surveys, young men in inner-city poverty areas encounter many illegal and legal opportunities in a relevant time period: McDonald's may be hiring this week; Jones Construction may need a laborer; robbers may need someone to fence stolen goods; an elderly woman may wander along the wrong street; a car with an expensive stereo system may be parked in an alley. In a world where short-run legal and illegal earnings opportunities arrive more or less randomly, it is natural for individuals to move between them, commit crimes while working, or take a legitimate job if one happens to be available even when engaged in criminal activities. If this hypothesis is correct, and the behavior of crime-prone youths is similar to that of foraging animals as opposed to that of adults with permanent careers, the supply of youths to crime will be quite elastic, consistent with the observed failure of incapacitation to reduce crime.

Conclusion

In this paper I have shown that increased incarceration of criminals has failed to arrest the nation's massive crime problem because of an offsetting increase in the crime propensity of noninstitutionalized men. I presented evidence that part of the problem seems to lie with the deterioration of the job market for less-skilled young men. It would be fitting to conclude by offering a program or policy that would improve the job prospect of the less skilled, and thus deter crime. While some programs for reducing juvenile delinquency have modest beneficial effects and some crime prevention programs may work (Mendel 1995), I do not believe at this time we have a blueprint for successful job-creating or job-enhancing programs that would offset the fall in the market for the less-skilled and thus reduce crime. What we do have is evidence that incarceration, which is highly costly (a year in prison costs as much as a year at Harvard, as they say), has not reduced the rate of crime (UCR) or has reduced it less than we would have
expected (victimization survey). The expense of incarceration is such that it behooves the nation to experiment with, and study carefully, programs to enhance the legal earnings opportunities of crime-prone young men and to try other modes of crime prevention. Even a modestly successful employment program that induced some to forego crime is likely to meet any plausible benefit-cost test, from the savings in the cost of incarceration as well as in the lower crime rate.

NOTES

1. The 1993 jail figures are estimated from 1992 data; the numbers probated and paroled are estimated from 1990 data. The estimates simply assume that the ratios of the missing data to the number in prisons remained constant over time.

2. I assume that 80 percent of crimes are committed by men, since approximately 80 percent of arrests are of males. The number of crimes in 1992 was roughly 15 million. Dividing 15 million by 69 million men in the labor force and multiplying by 80 percent yields an estimated crime per man in the workforce of 0.17. Dividing this by 6.6 gives the figure in the text.

3. The exact magnitude of the decline in real/relative earnings depends on the specific measure of earnings chosen, the deflator, years picked, the age and skill group chosen, etc., but it is invariably large.

4. One reason is that most criminals are self-employed, and thus do not face a market wage but rather an earnings opportunity schedule in which hourly pay depends on the hours of work they choose. In the Boston Youth Survey, those who committed a single crime in the past year earned $752, whereas those who reported committing crimes once a week or more earned $5,376, or $100 or so per week—considerably less per crime. A second reason is that self-reported criminal earnings may be inaccurately reported: Wilson and Abrahamse (1992) suggest that the incomes that inmates claim to have earned from various crimes are far higher than those crimes could plausibly yield.

5. Here, I take an average of the 1979 and 1980 deflators for the earnings in the Inner City Survey, since the survey covered both years. Using the 1979 deflator gives an estimated 3 percent drop in earnings, which is far short of the drop in legitimate earnings.

6. Since criminal earnings are poorly measured, it is not easy to document this claim. In the NLSY I regressed the share of income from illegal sources on number of crimes reported, weeks worked in the year and three human capital measures: years of schooling, age, and AFQT score. The coefficients on all three human capital measures were negative and significant, implying that schooling, age, and AFQT lowered illegal income relative to legal income.

7. Because the NLSY has never repeated the crime module, evidence on future crime behavior is limited to whether or not the respondent was interviewed in jail or prison.

8. The "doubling up" of legal work and cocaine sales in the Fagan and Reuter, MacCoun and Murphy studies indicates that for many young men, illegal work may be temporary or transitional work that supplements difficult low-wage or otherwise unsatisfactory work. For others, legal work provides options to riskier illegal work, or perhaps broadens markets for sellers of illegal goods or services.
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