

# How Unregulated Is the U.S. Labor Market? The Penal System as a Labor Market Institution<sup>1</sup>

Bruce Western  
*Princeton University*

Katherine Beckett  
*Indiana University*

Comparative research contrasts the corporatist welfare states of Europe with the unregulated U.S. labor market to explain low rates of U.S. unemployment in the 1980s and 1990s. In contrast, this article argues that the U.S. state made a large and coercive intervention into the labor market through the expansion of the penal system. The impact of incarceration on unemployment has two conflicting dynamics. In the short run, U.S. incarceration lowers conventional unemployment measures by removing able-bodied, working-age men from labor force counts. In the long run, social survey data show that incarceration raises unemployment by reducing the job prospects of ex-convicts. Strong U.S. employment performance in the 1980s and 1990s has thus depended in part on a high and increasing incarceration rate.

Institutional analysis of labor markets typically focuses on the effects of social policy and industrial relations (Crouch 1985; Colbjørnsen and Kalleberg 1988; Korpi 1990; Kolberg and Esping-Andersen 1990; Hicks 1994; Janoski, McGill, and Tinsley 1997). For this research, the United States provides a model of market deregulation. U.S. unions are weak, and the welfare state affects only those at the fringes of the job market.

<sup>1</sup> We gratefully acknowledge the helpful comments of Henry Farber, David Greenberg, Alexander Hicks, Mike Hout, Edmund McGarrell, Martina Morris, Joe Nevins, Robin Stryker, Theodore Sasson, Charles Tilly, *AJS* reviewers, and numerous participants of seminar presentations. We also thank Allan Beck and Darrell Gilliard at the Bureau of Justice Statistics for supplying unpublished BJS data. Elizabeth Pettit provided excellent research assistance. Western's research was partly supported by grant SBR95-11473 from the National Science Foundation. An earlier version of this paper was presented at the meetings of the American Sociological Association, Toronto, 1997. Direct correspondence to Bruce Western, Department of Sociology, Princeton University, 2-N-2 Green Hall, Princeton, New Jersey 08544-1010.

© 1999 by The University of Chicago. All rights reserved.  
0002-9602/99/10404-0002\$02.50

This contrasts with Europe, where employment relations are highly regulated. Unions set wages for entire economies, and welfare states significantly influence the supply and demand for labor. These institutional differences acquired special importance over the last two decades as European unemployment rose in comparison to U.S. unemployment. Recent trends are striking. While unemployment in the European Union averaged 9.5% between 1990 and 1993, the U.S. average was only 6.5% (OECD 1996). Currently, unemployment hovers around 10% in Germany, Italy, and France, while U.S. unemployment averaged less than 6% between 1994 and 1996.

These trends suggest unregulated labor markets yield strong employment performance. Of all the labor markets of the advanced economies, the United States best approximates the competitive model of neoclassical theory. In this model, job seeking is intensified by meager state support for the unemployed, and low unionization allows wages to adjust to market conditions. In Europe, institutions introduce inefficiency: large welfare states and strong unions stifle labor demand and reduce work incentives (Olson 1982; Lindbeck 1985; Giersch 1993; OECD 1994a).

We challenge this analysis by arguing that labor markets are embedded in a wide array of social arrangements that extend beyond the welfare state or industrial relations. In the United States, criminal justice policy provides a significant state intervention with profound effects on employment trends. The magnitude of state intervention is reflected in budget and incarceration figures. In the early 1990s, \$91 billion were spent on courts, police, and prisons, dwarfing the \$41 billion spent on all unemployment benefits and employment related services (*Statistical Abstract of the United States* 1995, table 585). By 1996, 1.63 million people were being detained in American prisons and jails—a threefold increase from 1980 (Gilliard and Beck 1997, p. 1). These figures suggest that incarceration generated a sizeable, nonmarket reallocation of labor, overshadowing state intervention through social policy.

This article studies the penal system as a labor market institution and provides evidence for its dynamic effects. Our central argument is that U.S. incarceration lowers conventional measures of unemployment in the short run by concealing joblessness among able-bodied, working-age men, but it raises unemployment in the long run by damaging the job prospects of ex-convicts after release. Incarceration, unlike social welfare policy, deepens inequality because its effects are increasingly detrimental for young black and unskilled men, whose incarceration rates are highest and whose market power is weak. This argument suggests that incarceration has lowered the U.S. unemployment rate, but it also implies that sustained low unemployment in the future will depend on continuing expansion of the penal system.

This dynamic argument differs from conventional analysis. Typically, covariation between institutional conditions and labor market outcomes provides evidence of institutional effects (e.g., Crouch 1985; Hicks 1994; Janoski et al. 1997). Incarceration resists this approach because of the conflicting direction of its short- and long-run effects. Focusing on just the short-run reduction in the labor supply through imprisonment or the long-run rise in unemployment risk among ex-convicts provides an incomplete picture of how incarceration effects unfold over time. The short-run analysis—highlighting low unemployment in the United States—neglects the significant threat of unemployment in the future. The long-run analysis—emphasizing the high unemployment risk of ex-convicts—appears anomalous in light of the low rate of U.S. unemployment in the mid-1990s. Understanding how incarceration shapes labor market outcomes thus requires consideration of both kinds of effects.

While speaking to the comparative analysis of labor markets, this argument also shares concerns with earlier research in stratification and criminology. Like stratification research on segmented labor markets, we also identify institutional bases of persistent inequality (cf. Doeringer and Piore 1971). While earlier work focused on the structure of firms and the job hierarchy, however, we underline the role of noneconomic institutions. We also view incarceration as a kind of hidden joblessness, similar to an old tradition in Marxist criminology (cf. Jancovic 1977). Unlike that work, hidden unemployment here is viewed as a consequence of incarceration, not a functional necessity of capitalism. Instead of recruiting replacement workers to the reserve army of labor, we also claim that incarceration tightens labor markets in the short run and makes workers more unemployable in the long run.

Our dynamic approach motivates a two-part analysis with two distinct research designs. Following a brief comparison of labor market institutions, we examine the short-run effect of incarceration by including the inmate population in estimates of U.S. and European labor inactivity. After showing that incarceration effects are negligible in Europe but large in the United States, we focus on U.S. social survey data to study the long-run effect of incarceration on the employment of ex-convicts. A discussion summarizes the results and compares the penal system to the welfare state as a labor market intervention.

## THE INSTITUTIONAL CONTEXT OF THE U.S. LABOR MARKET

### Industrial Relations and the Welfare State

It is often observed that the United States lags behind Western Europe in industrial relations and welfare state development (Goldfield 1987; Gourevitch 1986; Freeman 1995). The weakness of U.S. industrial rela-

TABLE 1  
 SELECTED INDUSTRIAL RELATIONS AND SOCIAL POLICY CHARACTERISTICS  
 OF 17 OECD COUNTRIES

Countries	Private-Sector Union Density	Collective Bargaining Coverage	Total Social Spending	Unemployment Benefit Coverage	Active Labor Market Spending
Australia .....	32	80	13	82	.34
Austria .....	41	98	25	132	.30
Belgium .....	...	90	25	148	1.04
Canada .....	28	38	19	129	.68
Denmark .....	72	...	28	113	1.56
Finland .....	65	95	27	112	1.76
France .....	8	92	27	98	.88
Germany .....	30	90	23	89	1.64
Italy .....	32	...	25	...	...
Japan .....	23	23	12	36	.13
The Netherlands .....	20	71	29	105	1.12
New Zealand .....	42	67	19	92	.74
Norway .....	41	75	29	61	1.14
Switzerland .....	22	53	...	53	.27
Sweden .....	81	83	33	93	3.21
United Kingdom .....	38	47	24	71	.59
United States .....	13	18	15	34	.25
Average excluding the United States .....	38	72	24	94	1.03

NOTE.—Union density is written as a percentage of all private-sector employees. Data are for 1988, except for Canada, the Netherlands, and Switzerland (measured in 1985), Finland and the United Kingdom (1989) and New Zealand (1990) (Visser 1991, p. 113). Collective bargaining coverage is written as a percentage of all employees. Data are 1990 except for France (1985), Germany (1992), and Japan (1989) (Traxler 1994, p. 173). Total social spending is measured as a percentage of GDP. All data are for 1990 (OECD 1994*b*, pp. 59–60). Unemployment benefit coverage measures unemployment beneficiaries as a percentage of unemployed recorded in labor force surveys. Data are for 1990–91 except for Denmark (1992) and Sweden (1992) (OECD 1994*a*, p. 188). Active labor market spending includes public spending on training, employment services, youth employment measures, and subsidized employment expressed as a percentage of GDP. Data are for 1990–92 (OECD 1993, pp. 73–78).

tions is illustrated by unionization and collective bargaining coverage statistics (table 1). Unionization is lower in the United States than in most other OECD countries. Although union density has recently fallen in Europe (Western 1997), the terms of collective agreements are often extended to nonunion workplaces (Traxler 1994). Consequently, most workers enjoy union wages and conditions. In the United States, collective bargaining covers only certified workplaces, and employment is mostly governed by individual contracts between workers and their employers.

Market relations are also strongly imprinted on social welfare institutions in the United States. U.S. welfare spending is much lower than wel-

fare spending in Europe. Approximately one-quarter of gross domestic product (GDP) is devoted to social welfare in the large European countries, while U.S. social spending accounts for only 15% of GDP (table 1, col. 3). U.S. unemployment insurance is also patterned by market conditions, and the coverage of unemployment insurance is low by comparative standards (table 1, col. 4). Beyond passive measures for income support, active labor market policies that mobilize workers into jobs are poorly funded in the United States (table 1, col. 5).

U.S. institutional exceptionalism supports the claim that extensive labor market regulation in Europe fueled unemployment in the 1980s and 1990s. The economic burden imposed by European unions and welfare states was a strong theme in theories of "Eurosclerosis." In this account, large unions prevent wage cuts in response to declining demand. Unions also limit employers' control over hiring and firing, which obstructs adjustment to shifting market conditions. Generous welfare benefits can raise unemployment by reducing incentives for work (Giersch 1993; p. 151; Lindbeck 1985; Layard, Nickell, and Jackman 1991, pp. 55–56). In the United States, Olson (1982) developed a similar argument that concluded that "there is no substitute for a more open and competitive environment" to achieve strong employment performance (p. 233). More recently, the OECD (1994*a*) has endorsed the importance of labor market flexibility and deregulation as a solution to Europe's persistent unemployment problem.

Sociologists who favor institutional rather than market explanations of unemployment often agree that the United States offers a model of labor market deregulation (Crouch 1985; Korpi 1990; Hicks 1994; although, cf. Janoski 1990). In these studies, the United States consistently scores low on measures of leftist party power, union centralization, and union organization. The U.S. place as an institutional laggard was formalized in the corporatist theory of unemployment. For this theory, highly centralized labor markets may produce low unemployment through union-bargained wage restraint, but the same outcome is delivered in the United States by the unregulated forces of supply and demand (Calmfors and Driffill 1988).

Although welfare and industrial relations statistics illustrate the weakness of social protection mechanisms in the United States, this does not justify the claim that market principles alone drive the superior U.S. employment record. We next consider state intervention in labor allocation through the criminal justice system.

### Criminal Justice and Incarceration

According to the Bureau of Justice Statistics (BJS), between 1980 and 1996, the number of people imprisoned in the United States grew by 300%,

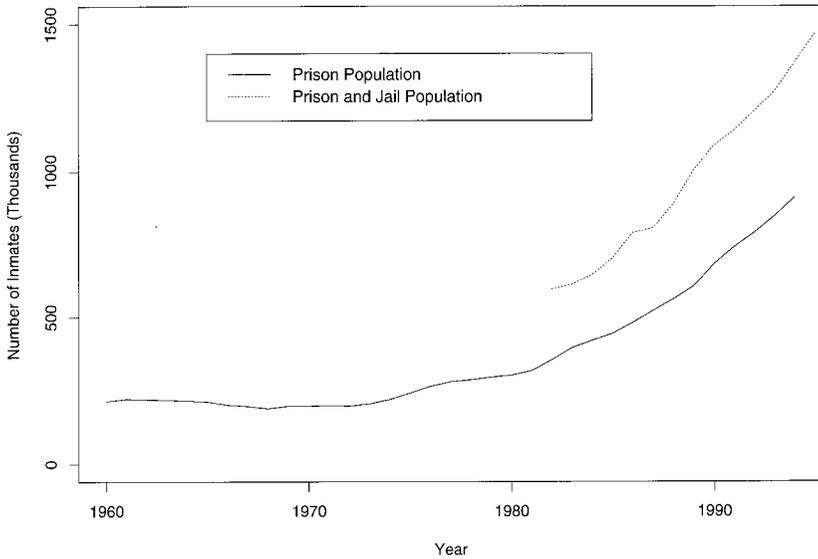


FIG. 1.—Growth in the U.S. prison and jail population, 1960–95

from 500,000 to over 1.6 million. Rates of incarceration began to increase in the early 1970s, but the most rapid growth took place in the 1980s and early 1990s. Federal and state prisons now house over 1 million prisoners, up from approximately 250,000 in 1970 and 266,000 in 1980; the jail population expanded from about 183,000 persons in 1980 to nearly 500,000 in 1994 (BJS 1997, p. 502). These trends are shown in figure 1, which reports a time series of the federal and state prison population and reports the total inmate population, which also includes those in local jails. The take-off of incarceration in the late 1970s is clearly indicated.

Incarceration is spread unevenly across the adult population. While increasing numbers of women were imprisoned in the 1980s and 1990s, men continue to make up more than 90% of all inmates. Incarceration is also concentrated among the young and the less educated. For example, 68% of all state prisoners in 1991 were under 35, and 65% did not complete high school (BJS 1992, p. 3). The dramatic expansion of the criminal justice system has also had a pronounced impact on young African-Americans. Blacks accounted for 22% of all of those admitted to prison in 1980. In 1992, 51% of the prison population was black. By 1995, one out of three black male youths was under some form of state supervision, and nearly 7% of all black male adults were incarcerated (BJS 1995a).

The allocative impact of incarceration on the U.S. labor market is clear

TABLE 2

NUMBERS OF INMATES AND INCARCERATION RATES PER 100,000 ADULT POPULATION FOR SELECTED OECD COUNTRIES, 1992–93

Countries	Incarceration Rate per 100,000	N of Inmates
Australia .....	91	15,895
Austria .....	88	6,913
Belgium .....	71	7,116
Canada .....	116	30,659
Denmark .....	66	3,406
France .....	84	51,457
Germany .....	80	64,029
Italy .....	80	46,152
Japan .....	36	45,183
The Netherlands .....	49	7,935
Sweden .....	69	5,668
Switzerland .....	85	5,751
United Kingdom .....	93	60,676
United States .....	519	1,339,695
U.S. blacks .....	1,947	626,207
U.S. whites .....	306	658,233
Average excluding the United States .....	78	26,988

SOURCE.—Mauer (1994) and Beck and Gilliard (1997).

in comparison to other industrialized democracies. The relative size of the prison population is typically measured by the incarceration rate—the number incarcerated on a single day per 100,000 of the adult population. In 1993, the U.S. incarceration rate was 5 to 10 times greater than the other OECD countries for which data were available (table 2). In Germany, for example, there are only 80 prisoners for every 100,000 adults, while in the United States there are over 500 inmates per 100,000. Cross-national differences in incarceration rates are even larger if we focus just on African-Americans. The incarceration rate among American blacks exceeds European figures by more than 20 times. These high rates correspond to large absolute numbers. (For total male U.S. incarceration counts by race, see appendix table A1.) Prison and jail inmates number in the millions in the United States, while the European prison population is measured in the hundreds of thousands.

It might be objected that the growth of the U.S. penal system is an inevitable response to high or rising crime rates rather than an active policy intervention. According to the National Crime Surveys, however, crime rates have fallen since 1980 (BJS 1996). Although the Uniform

Crime Reports, based on police reports to the FBI, indicate rising crime rates during some of this period, systematic analysis of these and other data suggests that the incidence of crime remained constant through the 1980s (Boggess and Bound 1993; Jencks 1991; O'Brien 1996). From a comparative viewpoint, the International Crime Surveys from 1988, 1991, and 1995 (cited in van Dijk and Mayhew [1992] and Tonry [1995, p. 198]) show that U.S. crime rates are only slightly above average among industrialized countries. As an exception, U.S. murder rates are very high, but homicide convictions account for less than 5% of all prison admissions. This evidence suggests that U.S. incarceration trends are only loosely connected to the level of criminal activity.

Instead, rising incarceration rates appear to result from more aggressive prosecutorial practices, tougher sentencing standards, and intensified criminalization of drug-related activity. As a result, the United States incarcerates proportionately more property and drug offenders, and does so for longer periods, than other industrialized countries (Lynch 1995). These differences are growing as a result of the increasing likelihood of incarceration after arrest (Boggess and Bound 1993; Langan 1991). The war on drugs also boosted the prison population (Beckett 1997; Donziger 1995; Tonry 1995). For example, the percentage of state prison inmates convicted of nonviolent drug offenses jumped from 6% in 1979 to nearly 30% in 1994. While explaining these policies is beyond the scope of this paper, research shows that the war on crime and drugs has involved legislators and court officials in a larger trend of redefining state responses to the symptoms of rising inequality (Beckett 1977; Gans 1995).

In sum, welfare and industrial relations institutions are weak in the United States compared to Europe, but the U.S. state plays a comparatively larger role in labor allocation through prisons and jails. The following section examines unemployment trends in light of recent incarceration figures.

#### THE SHORT-RUN EFFECT OF INCARCERATION

The performance of national labor markets is commonly summarized by the unemployment rate. This statistic is usually given by:

$$u = \frac{U}{U + E} \times 100,$$

where  $U$  is the number of unemployed and  $E$  is the number of civilian employees. The OECD provides standardized unemployment rates designed for cross-national comparison. These data are collected with national labor force surveys, where the unemployed are commonly defined as those without paid employment actively seeking work in the month

before the survey (OECD [1987] discusses the comparability of unemployment data).

We present two alternative measures that capture the short-run effect of incarceration. In the short run, incarceration influences the unemployment rate by keeping those with high unemployment risk out of the labor market. This can be understood as the causal effect of incarceration. The penal system also carries hidden unemployment because jobless inmates are not counted in standard labor force accounts. Hidden unemployment can be understood as the accounting effect of incarceration.

### The Causal Effect of Incarceration

Incarceration lowers unemployment by institutionalizing many who would otherwise be unemployed. Incarceration thus reduces the labor supply by removing able-bodied, working-age men from the workforce. If the number incarcerated is written,  $P$ , we can adjust the usual unemployment rate to estimate the causal effect:

$$u_1 = \frac{U + pP}{U + P + E} \times 100,$$

where  $p$  is the proportion of all inmates who would be unemployed if not incarcerated. The statistic  $u_1$  can be interpreted as *the unemployment rate that would be obtained if the incarceration rate was zero*. Although  $p$  is not observed, it can be estimated. National surveys of prisons and jails report the proportion of inmates unemployed at time of incarceration. Hypothetical unemployment among inmates at zero incarceration,  $p$ , can be estimated by this proportion.

To fix ideas, table 3 reports figures for  $u_1$  for U.S. men in 1995, the latest year for which data are available. To estimate  $p$ , the average proportion of unemployed inmates is calculated from the *Survey of Inmates of State Correctional Facilities* 1979, 1986, and 1991 (BJS February 1997c, May 1994, and October 1993), the *Survey of Inmates of Local Jails* 1983 and 1989 (BJS February 1997b and June 1997), and the *Survey of Jail Inmates* (BJS February 1997a). On average, more than a third of male inmates were unemployed at the time of incarceration in these data. Given  $p = .36$ , the 1995 estimate of  $u_1$  in the United States is 6.2% compared to the conventional rate of 5.6%. Through the incapacitation of unemployed workers from the labor force, incarceration is estimated to have lowered the American male unemployment rate by more than half a percentage point in 1995.

How accurate is this estimate of the causal effect of incarceration on unemployment? Accuracy is affected by the quality of estimates of  $p$ —the hypothetical proportion of unemployed inmates. One improvement

TABLE 3

ESTIMATING THE MALE UNEMPLOYMENT RATE AT AN INCARCERATION RATE OF ZERO FOR THE UNITED STATES, 1995

Symbol	Description	Estimate
$U$ .....	Number unemployed	3,983
$E$ .....	Number employed	67,377
$P$ .....	Number incarcerated	1,467
$p$ .....	Hypothetical proportion of inmates unemployed at zero incarceration	.36
$u$ .....	Actual unemployment rate (%)	5.6
$u_1$ .....	Hypothetical unemployment rate at zero incarceration (%)	6.2
$u_2$ .....	Unemployment rate including inmates among unemployed (%)	7.5

SOURCE.—Labor force statistics are from OECD (1997);  $p$  is estimated using data from BJS (October 1993, May 1994, October 1994, February 1997a, February 1997b, February 1997c, and June 1997).

NOTE.—All numbers are in thousands unless otherwise indicated.

might allow  $p$  to vary over time, perhaps as a function of the actual unemployment rate. Still, the estimate for  $p$  seems neither grossly too large nor too small. As a result,  $u_1$  probably provides an unbiased but noisy estimate of the hypothetical unemployment rate at zero incarceration. Although unbiased, measurement error in  $u_1$  motivates an alternative approach.

### The Accounting Effect of Incarceration

Measurement error can be minimized and the short-run effect of incarceration can still be assessed by introducing a broader unemployment concept. In this approach, labor market inactivity among able-bodied, working-age men is understated by the conventional unemployment rate. A more accurate measure of labor market inactivity includes inmates in the jobless count. This yields an alternative measure,

$$u_2 = \frac{U + P}{U + P + E} \times 100.$$

In this case,  $u_2$  describes the *unemployment rate that would be obtained if the definition of unemployed were extended to include those incarcerated*. Similar to other modifications of conventional unemployment statistics,  $u_2$  describes the level of labor underutilization (cf. Clogg 1974, pp. 4–10). From this perspective, incarceration creates hidden unemployment by reducing labor utilization in a way that is not captured by the usual labor market accounts. With a large prison and jail population, the labor market operates with substantially less than the full productive potential

of the whole able-bodied adult population. This loss of productive potential is more accurately captured by the adjusted unemployment statistic,  $u_2$ , than the unemployment rate,  $u$ .

Although statistically simpler than  $u_1$ ,  $u_2$  is also measured with error. By assuming that all inmates are without jobs,  $u_2$  is upwardly biased because some prisoners are engaged in paid employment. The number of inmates in paid employment is not known with certainty, so bias cannot be estimated accurately. In 1990, administrative records show that around 8% of prisoners worked in prison industries, mostly for public-sector employers. An additional 1%–2% worked in agriculture for consumption outside the penal system. A significantly smaller proportion worked in local jails (BJS 1995*b*, p. 14; Miller 1997). Upward bias in  $P$  due to employment in prison industries is thus likely to be no larger than 10%.

Other researchers have also noted this sort of short-run effect of incarceration on unemployment (Jancovic 1977; Rusche and Kirchheimer 1939). Jancovic (1977) studied the idea that prison removes part of the surplus labor pool from the labor market. His research for the period 1926–74 found that the size of the incarcerated population in the United States did not markedly affect the size of the unemployed population. Recent effects may be different, however, because of growth in prison and jail populations over the past 20 years.

## Results

The importance of incarceration as a source of hidden unemployment varies by sex and across countries. More than 90% of prison and jail inmates are male in the United States and abroad, so we focus on trends in the labor market conditions of men. From a comparative perspective, the short-run effect of incarceration is tiny in Europe because incarceration rates are low (table 4). In Europe, unemployed males outnumber male prison inmates by between 20:1 and 50:1. In the United States, the ratio of unemployed to incarcerated was less than 3:1 in 1995. The United States and Europe also differ in the relative sizes of the conventional unemployment rate,  $u$ , and the adjusted figures that count the incarcerated,  $u_1$  and  $u_2$ . Including prison inmates in the jobless count only changes the unemployment rate by a few tenths of a percentage point in Europe. These effects might be just large enough to register in the labor force surveys that measure unemployment. The small differences between conventional and adjusted figures in Europe contrast strikingly with U.S. data, where prison and jail inmates added 1.9 points to the usual unemployment rate in 1995.

Figure 2, part *a*, compares U.S. unemployment to average European unemployment between 1976 and 1994. In contrast to the stylized facts of

TABLE 4

MALE INCARCERATION AND UNEMPLOYMENT IN THE UNITED STATES AND WESTERN EUROPE, 1995

COUNTRIES	NUMBER UNEMPLOYED ( <i>U</i> )	NUMBER INCARCERATED ( <i>P</i> )	<i>U/P</i>	UNEMPLOY- MENT RATE ( <i>u</i> )	ADJUSTED UNEMPLOY- MENT RATE	
					( <i>u</i> <sub>1</sub> )	( <i>u</i> <sub>2</sub> )
Austria .....	72	6.5	11.1	3.3	3.3	3.5
Belgium .....	217	6.8	31.7	9.1	9.2	9.4
Denmark .....	93	3.3	28.4	6.2	6.3	6.4
Finland .....	231	2.9	79.0	17.7	17.8	17.9
France .....	1,370	50.8	26.9	10.1	10.2	10.4
Germany .....	1,594	63.3	25.2	7.1	7.2	7.4
Ireland .....	110	2.0	54.5	12.3	12.3	12.5
Italy .....	1,358	47.1	28.9	9.5	9.6	9.8
The Netherlands .....	254	8.2	30.9	5.9	6.0	6.1
Norway .....	61	2.3	26.8	5.3	5.3	5.5
Sweden .....	190	5.5	34.5	8.4	8.5	8.7
Switzerland .....	63	5.4	11.8	2.7	2.8	2.9
United Kingdom .....	1,607	49.5	32.5	10.1	10.2	10.4
United States .....	3,983	1,466.7	2.7	5.6	6.2	7.5

SOURCE.—Eurostat (1997), OECD (1997).

NOTE.—Data from all countries are for 1995, except Austria (1994), Belgium (1993), and the Netherlands (1994). The unemployed and incarcerated are measured in thousands.

Eurosclerosis, U.S. unemployment was higher than the European average through the late 1970s and early 1980s. At the peak of the recession in 1983, average male unemployment was about three points higher than unemployment in Europe. Consistent with claims of superior U.S. labor market performance, however, U.S. unemployment fell substantially from the mid-1980s, while European unemployment drifted upward from 1989. In every year from 1984 onward, U.S. male unemployment was lower than the European average.

U.S. employment performance looks weaker once the size of the prison population is taken into account. The  $u_1$  series suggests that prison and jail has lowered male unemployment by between a half and one percentage point since the late 1980s (fig. 2*b*). The  $u_2$  series that adds all inmates to the unemployment count shows that U.S. labor inactivity never falls below about 7% in the 1980s (fig. 2*c*). By the recession of the early 1990s, the adjusted unemployment rate approached its 1983 high. The modified estimate suggests that unemployment in the economically buoyant period of the mid-1990s is about 8%—higher than any conventional U.S. unemployment rate since the recession of the early 1980s.

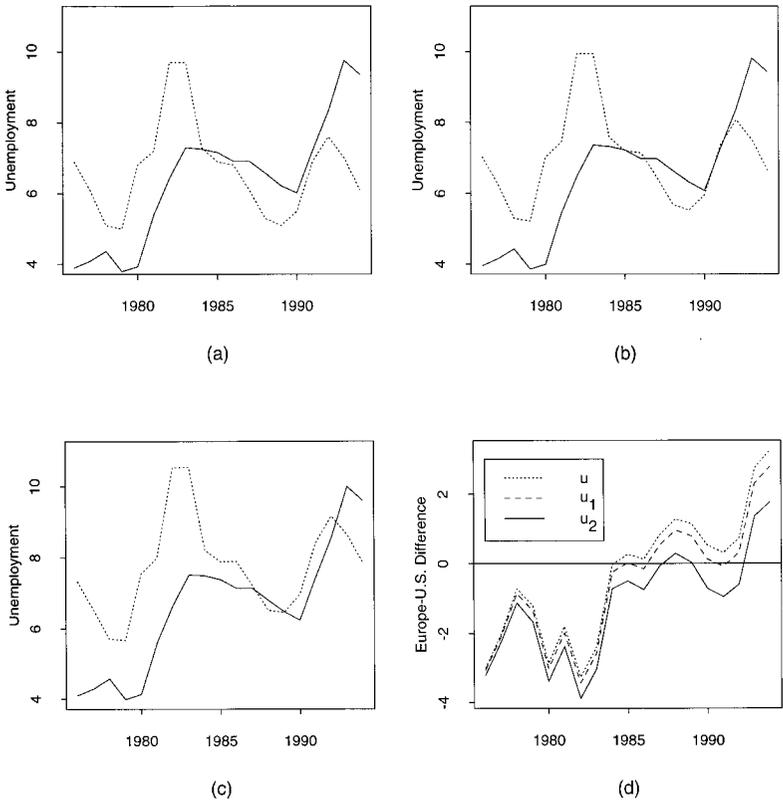


FIG. 2.—Male unemployment rates for the United States (broken line) and Europe (solid line), 1976–94: (a)  $u$ , (b)  $u_1$ , (c)  $u_2$ ; (d) the difference between European and U.S. series. The European average is based on the countries listed in table 4. European incarceration data are from Council of Europe (1992) and Eurostat (1997). Missing incarceration data for Switzerland and the Netherlands (1976–83) were imputed.

The relative performance of the U.S. and European economies is highlighted in figure 2*d*, which reports the difference between the European and U.S. series. Positive values indicate the superior performance of the U.S. labor market. According to the usual measure, the United States enjoyed consistently lower unemployment than Europe since the mid-1980s. However, with  $u_1$ , which counts a third of all inmates among the unemployed, less than a percentage point separates the United States and Europe for most of the 1976–94 period. If all inmates are included among the unemployed,  $u_2$ , labor utilization in Europe is higher for 15 of the 19 years from 1976. Adjusted unemployment,  $u_2$ , in the United States generally exceeds European figures, despite strong U.S. economic growth and

TABLE 5  
OBSERVED AND ADJUSTED UNEMPLOYMENT AND JOBLESS RATES  
FOR U.S. MEN, 1983-95

YEAR	UNEMPLOYMENT			JOBLESSNESS		
	$u$	$u_1$	$u_2$	$u$	$u_1$	$u_2$
All men:						
1983 .....	9.7	9.9	10.6	29.4	29.4	29.9
1985-89 .....	5.5	5.9	6.7	26.2	26.3	27.0
1990-94 .....	5.9	6.5	7.6	27.0	27.2	28.1
Black men:						
1983 .....	19.1	20.0	22.9	39.5	39.5	41.7
1985-89 .....	11.6	13.3	16.9	34.0	34.3	37.0
1990-94 .....	11.3	13.6	18.8	34.3	34.6	38.5
White men:						
1983 .....	8.6	8.8	9.2	28.3	28.3	28.6
1985-89 .....	4.7	5.0	5.5	25.3	25.3	25.7
1990-94 .....	5.2	5.5	6.2	26.2	26.2	26.8

SOURCE.—Labor force data are taken from series supplied by the Bureau of Labor Statistics; incarceration data are from unpublished series of the Bureau of Justice Statistics (see, table A1 below). Data described in table 3 above gave estimates of  $p = .36$  and  $p = .32$  for black and white men, used to calculate  $u_1$ .

job creation between 1985 and 1994. When taking account of incarceration, European unemployment significantly overtakes U.S. unemployment only from 1993.

A more detailed examination of U.S. data allows us to distinguish the short-run effect of incarceration for black and white men. The three unemployment measures are shown in table 5. These figures are given for 1983—the peak year for U.S. unemployment. Averages for the late 1980s and early 1990s are also reported to assess the effects of economic recovery. In 1983, when the prison population is added to the unemployment count, the adjusted unemployment rate for all men rises by just one point. However, estimates of unemployment among black men in 1983 increase by four points to 23%. The effect of prison on whites is much smaller, raising the unemployment rate by only about half a point. As the prison and jail population grows through the 1980s, the labor market effects of incarceration become much larger. While data for  $u_1$  show that the causal effect of incarceration in the 1990s equals about half a percentage point on the unemployment rate, the effect is five times greater for black men. Data for  $u_2$  show that nearly one African-American man in five is without a job throughout the 1990s when all those incarcerated are counted among the unemployed. For white men, the impact of incarceration on the overall unemployment rate is relatively small.

The current focus on unemployment neglects those of working age who have been discouraged from seeking work. Labor force participation rates may offer a more accurate picture of joblessness or the underutilization of labor. Table 5 also reports overall jobless rates. As before, the adjusted figure adds the incarcerated population to the jobless count. The results here are similar to those for unemployment. The incarcerated population raises the jobless rate, and this effect is largest for black men. Unadjusted participation rates for black men showed labor market conditions in the early 1990s had improved substantially from 1983, when nearly 40% of black men over 20 years old were without jobs. Once the size of the prison population is considered, however, the magnitude of the economic recovery appears considerably smaller. The adjusted measure,  $u_2$ , suggests that joblessness in the 1990s is just under 39% for black men, little improved from its 1983 level. The effect for white men is much smaller, with the incarcerated population adding less than one point to the level of total joblessness.

In sum, the growth of the U.S. penal system through the 1980s and 1990s conceals a high rate of persistent unemployment and joblessness. Adjusted figures that count the incarcerated population as unemployed suggest that the U.S. labor market has performed worse, not better, than Europe for most of the period between 1976 and 1994. These effects are especially large for African-Americans. Once prison inmates are added to the jobless statistics, total joblessness among black men has remained around 40% through recessions and economic recoveries.

#### THE LONG-RUN EFFECT OF INCARCERATION

While conventional labor force statistics understate joblessness when incarceration rates are high, other research suggests that rising incarceration increases unemployment in the long run. The long-run effect of incarceration highlights the employment experiences of convicts after they are released. Such experiences are difficult to observe in the aggregate statistics of labor market accounts. We thus shift research designs to an analysis of survey data to follow workers as they move from prison to the labor market.

Incarceration is a dramatic, life-changing event that creates a variety of challenges for those who experience it. Ex-convicts face what has been called the "reentry problem": the task of surmounting the psychological, social, and financial consequences of incarceration and reintegrating oneself into mainstream society (Irwin 1970; Eckland-Olson et al. 1983). The ability to find stable, legal work is a crucial component of the reintegration process. Experimental studies suggest that the prospects of job

applicants with no criminal record are far better than those of persons who were convicted and incarcerated (Boshier and Johnson 1974; Buikhuisen and Dijksterhuis 1971; Schwartz and Skolnick 1962). Even those convicted but sentenced to probation instead of prison appear to fare better on the job market (Petersilia and Turner 1986; Freeman 1991; Grogger 1995).

Job prospects for ex-convicts may be even worse in the current context. While convicts who acquire educational and vocational skills in prison are able to improve their chances for employment (Irwin and Austin 1994), resources for education and vocational training within prisons have declined in both absolute and relative terms. The recent decision to deny inmates Pell grants to pursue higher education suggests that this trend is likely to continue in the future. Furthermore, incarceration may erode the value of vocational skills. The increasingly violent and overcrowded state of prisons and jails is likely to produce certain attitudes, mannerisms, and behavioral practices that on “the inside” function to enhance survival but are not compatible with success in the conventional job market (Donziger 1996; Irwin and Austin 1994). Consequently, incarceration may raise unemployment in the long run by increasing joblessness among inmates after release.

### Data and Methods

We study the long-run negative effect of incarceration on employment using data from the National Longitudinal Survey of Youth (NLSY; Center for Human Resource Research 1995). The NLSY provides panel data from a national sample of American youth ages 14 to 21 in 1979. Respondents are reinterviewed annually providing information about their labor market experiences in the previous year. Following Freeman’s (1991) analysis of incarceration effects in the NLSY, the dependent variable, written  $E_{it}$  for respondent  $i$  at time  $t$ , is measured by the proportion of weeks worked in the past year. This dependent variable is constructed for each respondent, for every year from 1984 to 1993. The analysis is confined to males whose schooling was completed before 1984.

Two key independent variables provide information about the long-run effect of incarceration on employment. First, the 1980 NLSY includes a crime module with questions about involvement in crime and the criminal justice system. Incarceration status is measured by an item that records whether the respondent has ever spent time in a juvenile or adult correctional facility. We use this item to create a dummy variable for youth incarceration,  $Y_i$ , which scores “1” for respondents incarcerated in or before 1980 and “0” otherwise. Youth incarceration status was only

obtained in 1980, so  $Y_i$  varies across respondents but not over time. Freeman (1991) also studied this variable, finding large and enduring effects of youth incarceration on adult earnings and employment status. Despite these strong results, that study was essentially cross-sectional. The possibility of jail spells following youth incarceration was neglected as a rival explanation for current employment status.

We remedy this problem by introducing a second independent variable that measures adult incarceration. The NLSY offers annual data on adult incarceration by recording a correctional facility as a possible residence. Adult correctional residence, written  $C_{it}$ , is a dummy variable, scoring "1" if a respondent is currently resident in a correctional facility and "0" otherwise. Adult correctional residence is an imperfect measure of incarceration because time served between interviews is unobserved. Estimated effects are biased to zero with this measurement error. This downward bias is offset by the short-run effect of incarceration: Part of the estimated negative effect of adult incarceration is due to incapacitation from the labor market while incarcerated. As a result, the long-run effect of reduced job opportunities after release is confounded with the short-run effect of joblessness during confinement in prison. To distinguish the short-run and long-run effects, we should ideally control for weeks lost from the labor market while incarcerated. Unfortunately, this information is unavailable in the NLSY.

To help isolate the long-run—post-release—effect of incarceration on employment, we add the lagged variables,  $C_{it-1}$ ,  $C_{it-2}$ , and  $C_{it-3}$ . The contemporaneous effect of  $C_{it}$  is dominated by incapacitation during imprisonment, but the lagged effects increasingly reflect the postrelease employment experiences of ex-inmates. There are several alternatives to this specification. We could construct a postrelease variable that scored "1" if incarcerated in year  $t - 1$ , but not in year  $t$ . With some loss of information, the dependent variable could also be written as a dummy variable for unemployment at the time of the interview. We experimented with these models and obtained essentially identical results to those reported below. (Details of these analyses are available upon request.)

A final problem with earlier analyses is that unobserved characteristics that place men at risk of unemployment or low wages also raise their chances of criminal conviction. For many studies, causal inferences about conviction neglect the unobserved heterogeneity of offenders (Freeman 1991; Bound and Freeman 1992; cf. Waldfogel 1994). We address unobserved heterogeneity in two ways. Lagged values of the dependent variable adjust for work experience. This way, employment status before and after incarceration are used to assess the impact of jail time. Random effects are also added for each respondent to adjust for unobserved hetero-

geneity. The random effects model fits an additional parameter for every respondent. The model thus accounts for respondent-specific characteristics that are unobserved and not captured by the independent variables. (Random effects models for panel data are described by Hsiao [1986, pp. 32–41].)

Using a pooled cross-sectional time-series design, employment is written as a function of youth incarceration, correctional residence, and work experience. Dummy variables for time periods are introduced to allow for changes in the mean level of employment between 1984 and 1993. The period dummies,  $P88_{it}$  and  $P91_{it}$ , indicate the years 1988–90 and 1991–93. These periods were chosen to break the 10-year time series into three segments of roughly equal length. By interacting the period dummies with youth incarceration, we test whether the impact of juvenile imprisonment decays with time.

The core of the model is written

$$\begin{aligned} E_{it} = & \beta_0 + \rho_1 E_{it-1} + \rho_2 E_{it-2} \\ & + \beta_1 P88_{it} + \beta_2 P91_{it} + \beta_3 Y_i + \beta_4 Y_i P88_{it} + \beta_5 Y_i P91_{it} \\ & + \beta_6 C_{it} + \beta_7 C_{it-1} + \beta_8 C_{it-2} + \beta_9 C_{it-3} + \gamma_i + \epsilon_{it}, \end{aligned}$$

where  $\gamma_i$  is a normally distributed random effect to account for unobserved heterogeneity across respondents, and  $\epsilon_{it}$  is a normal error term. The core model is supplemented by a set of control variables used in other studies of the labor market effects of arrest and incarceration (Witte and Reid 1980; Freeman 1991; Waldfogel 1994; Sampson and Laub 1993). Control variables include age, education, marital status, urban residence, the local unemployment rate, region, and a number of variables measuring juvenile contact with the criminal justice system (see appendix tables A2 and A3). These variables help operationalize theories of human capital, social control, employment continuity, labor market conditions, and the impact of noncustodial contact with the criminal justice system. The random effects model can be estimated with maximum-likelihood methods. Maximum-likelihood estimates were obtained using the statistical software, S-Plus, version 3.4.

Table 6 reports sample sizes and descriptive statistics for the dependent variable and key independent variables. Like the analysis below, descriptive statistics are reported separately for white and black males. Time in paid employment rises over time as the NLSY cohort becomes older. Increased unemployment in the early 1990s is shown in the final period. The incidence of jail or prison residence also rises over time, especially for black respondents. Consistent with incarceration statistics, youth incarceration is also higher for black respondents than white.

TABLE 6

MEANS OF WORKING TIME, JAIL RESIDENCE, AND YOUTH INCARCERATION VARIABLES,  
NLSY MALES, 1984-93

	All Respondents	Blacks	Whites
1984-87:			
Working time ( <i>E</i> ) .....	.815 (.293)	.716 (.362)	.862 (.252)
Correctional residence ( <i>C</i> ) .....	.015 (.122)	.038 (.191)	.005 (.071)
1988-90:			
Working time ( <i>E</i> ) .....	.869 (.293)	.782 (.345)	.910 (.219)
Correctional residence ( <i>C</i> ) .....	.021 (.144)	.052 (.222)	.008 (.086)
1991-93:			
Working time ( <i>E</i> ) .....	.848 (.293)	.744 (.377)	.896 (.244)
Correctional residence ( <i>C</i> ) .....	.021 (.144)	.058 (.234)	.006 (.074)
1984-93:			
Youth incarceration ( <i>Y</i> ) .....	.035 (.182)	.045 (.206)	.028 (.166)
<i>N</i> of respondents .....	2,917	854	1,914
Total observations .....	27,142	7,904	17,855

NOTE.—The total number of observations is not an exact multiple of the total number of respondents because of missing data; SDs are in parentheses.

### Results

Table 7 reports estimates from the employment model. The negative youth incarceration effect indicates that respondents spending time in correctional facilities before 1980 spent less time in work four years later. On average, youth incarceration reduces employment by about five percentage points, or about three weeks per year. The effect is particularly large for blacks, whose employment is reduced by about nine percentage points (around five weeks in the year) by juvenile jail time. The size of this effect can be interpreted in light of other effects in the model (see appendix tables A2 and A3). Adult employment lost through youth incarceration exceeds the large negative effects of dropping out of high school or living in a high unemployment area.

Interaction effects trace the impact of youth incarceration over time. The effects are substantively small and insignificant, suggesting that the negative impact of imprisonment is extremely long lasting. Despite con-

TABLE 7  
EFFECTS OF YOUTH INCARCERATION,  $Y$ , CORRECTIONAL RESIDENCE,  
 $C$ , AND WORK EXPERIENCE,  $E$ , ON TIME EMPLOYED,  
NLSY MALES, 1984-93

	All Respondents	Blacks	Whites
Youth incarceration:			
$Y_t$ .....	-.050 (3.88)	-.087 (3.06)	-.040 (2.64)
$Y_t \times P88_t$ .....	-.010 (1.26)	-.014 (.88)	-.009 (.91)
$Y_t \times P91_t$ .....	-.004 (.56)	-.014 (.90)	-.001 (.07)
Correctional residence:			
$C_t$ .....	-.246 (22.12)	-.240 (15.10)	-.255 (12.77)
$C_{t-1}$ .....	-.189 (15.81)	-.170 (9.90)	-.215 (10.16)
$C_{t-2}$ .....	.066 (5.48)	.093 (5.29)	.001 (.05)
$C_{t-3}$ .....	.019 (1.63)	.012 (.68)	.021 (1.01)
Period dummies:			
1988-90 ( $P88_t$ ) .....	-.004 (1.94)	-.005 (1.08)	-.003 (1.44)
1991-93 ( $P91_t$ ) .....	-.013 (4.93)	-.014 (2.35)	-.012 (4.21)
Work experience:			
$E_{t-1}$ .....	.408 (70.76)	.430 (39.76)	.375 (53.58)
$E_{t-2}$ .....	.062 (11.37)	.067 (6.37)	.060 (9.10)
$R^2$ .....	.56	.59	.55

NOTE.—The  $R^2$  statistic is defined as the squared correlation of the predicted with the observed values. Absolute  $t$ -ratios are in parentheses. Results for control variables are reported in the appendix (tables A2 and A3).

trols for adult incarceration, there is barely any tendency for the negative impact of youth incarceration to decay over time. Even after 15 years, respondents incarcerated as juveniles worked between 5 and 10 percentage points less than their counterparts who experienced no youth incarceration. Although these effects are large and enduring, causal inferences about youth incarceration may be biased because of unobserved heterogeneity. A stronger test must control for preincarceration employment status.

This control is provided by estimates of the effects of correctional residence. The contemporaneous effect of correctional residence is large and negative. This coefficient is driven upward by time out of the labor market during detention, rather than the postrelease effect of incarceration. The lagged effects provide stronger evidence of how ex-inmates fare on the job market. The first-order lags are large and negative. While partly reflecting short-run incapacitation, these estimates indicate that respondents lose more than two months of employment in the year after correctional residence. The coefficient for  $C_{t-2}$  is small and positive, varying by race. The estimate in the full sample depends largely on the result for African-Americans. With several lagged effects, the positive coefficient for the second-order lag can be interpreted as the speed of readjustment to regular employment patterns two years after incarceration. These estimates indicate that the postrelease penalty of incarceration vanishes faster for blacks than for whites. Because of the high incarceration rate among young African-American men, black ex-inmates may be less stigmatized than their white counterparts. Employers may treat black noninmates and ex-inmates more similarly as a consequence. Three years after correctional residence, negative incarceration effects have largely decayed for all respondents.

Interpretation of the correctional residence effects is also affected by the lagged employment variables. With this dynamic specification, incarceration in 1984, say, may cause unemployment in 1985, which further raises unemployment in 1986. Figure 3 shows the dynamic impact of incarceration by plotting the pattern of unemployment produced by a single year of correctional residence in year 1. Other independent variables are set at fixed levels. This example illustrates the impact of a year of incarceration over a seven-year period for a white, urban high school dropout, age 21, with average employment in the time leading up to year 0. (All other independent variables were set to "0".) Predicted employment was calculated recursively using the estimates reported in the first column of table 7 (see Box, Jenkins, and Reinsel 1994, pp. 390–94). Each prediction is bounded by a 95% confidence interval, conditional on the predictions of earlier years (Draper and Smith 1981, p. 94). Correctional residence affects employment after year 1 through its lagged effects and the lagged dependent variable. In year 1 when correctional residence is reported, employment falls on average by one-third, from 42 weeks to 28. The year after reported incarceration, time in employment falls another three weeks. Like the effect for year 1, the negative impact of incarceration in year 2 partly expresses detention from the labor market during imprisonment. In year 3, however, there is no possibility of incapacitation, and we find a postrelease effect of five weeks' unemployment compared to the

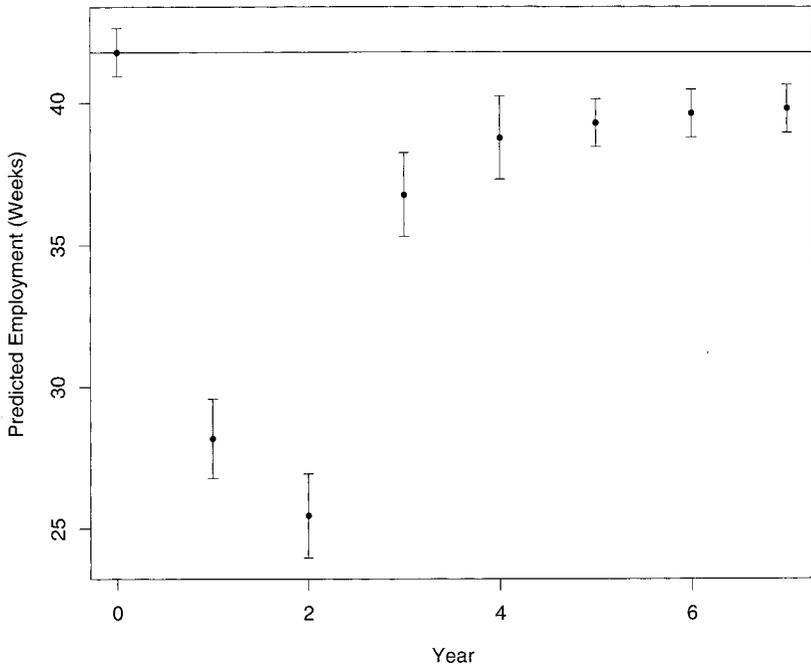


FIG. 3.—Predicted employment in weeks given correctional residence in year 1 (error bars show a conditional 95% confidence interval around predictions).

baseline year 0. Because the confidence interval for this prediction does not overlap the baseline level of employment in year 0 or the long-run level of employment in year 7, the data offer support for a negative long-run effect of incarceration on employment. This negative effect persists for several more years but becomes relatively small. Other prediction exercises yield substantively identical results.

In sum, the NLSY provides strong evidence of a small but persistent effect of juvenile incarceration. Respondents incarcerated in or before 1980 experienced high levels of unemployment some 15 years later, even controlling for later incarceration and work experience. Adult incarceration, on the other hand, has large negative effects on ex-inmates after release, but these effects decay within three or four years of release. In general, a variety of models show that incarceration has large and enduring effects on the job prospects of ex-convicts. Results were also robust to different subsets of control variables. The effects of control variables all conform to theoretical expectations.

DISCUSSION

U.S. prisons and jails grew threefold from 1979 to detain around 1.6 million people by 1995. This paper analyzes the short-run and long-run effects of this rapid growth in incarceration on the labor market. In the short run, large prison and jail populations conceal a high level of joblessness. If included in labor market statistics, the population of incarcerated men would contribute about two percentage points to the U.S. male unemployment rate by the mid-1990s. These effects are especially large for African-Americans: labor inactivity is understated by about one-third, or seven percentage points, by the conventional measure of black male unemployment. Challenging claims of "Eurosclerosis" and the successful deregulation of the U.S. labor market, our estimates of labor inactivity among U.S. men consistently exceed average European unemployment rates between 1975 and 1994. State intervention in the labor market through the penal system thus contributes to a falsely optimistic picture of U.S. labor market performance in comparison to Europe.

While incarceration conceals unemployment from conventional jobless statistics in the short run, it increases the chances of unemployment among ex-convicts in the long run. NLSY data indicate that the negative effect of youth incarceration on adult employment can last for over a decade and that adult incarceration lowers later participation in paid employment by 5 to 10 weeks a year. With over a million men now in prison or jail, the results suggest that the penal system annually generates the equivalent of a full year of unemployment for more than 200,000 American men. In the long run, incarceration thus significantly undermines the productivity and employment chances of the male workforce.

Viewing the U.S. penal system as a labor market institution likens it to the European welfare states. Just as European researchers argue that welfare states artificially reduce the labor supply (Neubourg 1983, pp. 25–27), we find significant hidden unemployment through incarceration. Despite this similarity, our analysis suggests two important differences between welfare states and penal systems as labor market institutions.

First, while European social policy is redistributive, the employment effects of U.S. incarceration exacerbate inequality. Comparative research shows that tax and transfer policies lifted about half the nonelderly poor out of poverty in European countries in the 1980s (McFate, Smeeding, and Rainwater 1995, p. 39). Incarceration has the reverse effect. Because incarceration rates are highest among young, unskilled, minority men, the negative employment effects of jail time are focused on those with the least power in the labor market. The penal system thus deepens existing market inequalities.

Second, welfare institutions and their economic effects appear stable

over time, but incarceration's short-run effect of lowering conventional unemployment is sustained by an ever-increasing incarceration rate. Recent research suggests that European welfare measures create few economic inefficiencies (Blank 1995). Indeed, sociologists argue that some welfare measures boost economic performance by improving labor mobility and productivity (Kolberg and Esping-Andersen 1990; Janoski 1990). In this context, the effects of welfare effort fluctuate with the business cycle. The dynamic analysis of this paper implies a fundamentally different logic for incarceration in which the short-run and long-run effects are closely interdependent. Low U.S. unemployment through the mid-1990s suggests that the short-run effect of incarceration currently dominates its long-run effect. The increased unemployment risk of ex-convicts is more than compensated by the escalating incarceration rate. High rates of recidivism help explain the predominance of the short-run effect. About two-thirds of young state prisoners are rearrested within three years, cycling many of those at risk of unemployment out of the labor market and back into custody. However, new entrants to the labor force also face a high incarceration rate, which ultimately raises their unemployment risk. Under these conditions, the appearance of strong employment performance is assisted by an ever-increasing correctional population. In striking contrast to the usual picture of the unregulated U.S. labor market, incarceration—as a labor market intervention—can thus be understood as “super-regulatory.” High incarceration rates lower conventional unemployment statistics by hiding joblessness but create pressure for rising unemployment once inmates are released. Sustained low unemployment depends, in part, not just on a large stage intervention through incarceration but on a continuous increase in the magnitude of this intervention.

This account of low U.S. unemployment sustained by an expansive and regressive state intervention contrasts sharply with earlier research. The economic analysis of Eurosclerosis that emphasizes the free play of market forces and sociological research focusing on industrial relations and the welfare state both treat the U.S. labor market as largely unregulated (Calmfors and Driffill 1988; Crouch 1985). The broader definition of labor market institutions used here shares with other economic sociology an interest in the influence of noneconomic social relations on economic outcomes (Polanyi 1944; Granovetter 1985). From this perspective, the economic model of competitive markets cannot even be approximated empirically because of the pervasive influence of the surrounding social context.

More generally, this analysis suggests that labor markets are embedded in a broad array of social arrangements that extend well beyond the employment relationship. Although these social arrangements may not directly regulate markets like labor unions or social policy, this broader in-

stitutional context still strongly influences labor market outcomes. Institutions are thus as fundamental to the operation of the ostensibly unregulated U.S. labor market as they are to the centralized industrial relations regimes of Western Europe. While some policy analysts celebrate the free market principles of the U.S. model, these same principles should be assessed in light of the significant and coercive reallocation of labor through the expansion of U.S. prisons and jails.

APPENDIX

TABLE A1  
 MALES IN THE CUSTODY OF STATE AND FEDERAL PRISONS  
 AND LOCAL JAILS, BY RACE, 1982-95

Year	Total	White	Black
1982 .....	596,000	325,100	263,100
1983 .....	611,800	331,800	272,000
1984 .....	644,800	351,700	284,400
1985 .....	701,400	382,700	309,800
1986 .....	789,700	417,600	342,400
1987 .....	805,200	439,000	356,300
1988 .....	887,300	469,200	407,400
1989 .....	1,001,200	518,000	472,800
1990 .....	1,087,900	545,000	508,800
1991 .....	1,139,500	566,700	551,000
1992 .....	1,204,700	598,000	580,300
1993 .....	1,269,800	627,100	624,000
1994 .....	1,367,600	669,100	677,500
1995 .....	1,466,700	728,700	713,500

SOURCE.—Unpublished data from Bureau of Justice Statistics, compiled by Allan Beck and Darrell Gilliard (1997).

TABLE A2

## DESCRIPTIVE STATISTICS FOR ALL CONTROL VARIABLES IN NLSY ANALYSIS

Variable	Description	Mean
Probation (youth) .....	On probation in or before 1980	.09
Charged (youth) .....	Charged with a crime in or before 1980	.07
Convicted (youth) .....	Convicted of a crime in or before 1980	.09
Stopped by police (youth) .....	Stopped by police in or before 1980	.28
Age .....	Age of respondent in years	27.28
Black .....	A dummy variable for black respondents	.29
Was married .....	Not married at time of interview, but was married at some time	.10
Currently married .....	Married at time of interview	.45
Less than high school .....	Dropped out of high school at time of in- terview	.18
Some college .....	Graduated from high school and com- pleted at least some college at time of in- terview	.32
Low unemployment locality .....	Lived in an area with unemployment un- der 4.5% at time of interview	.38
High unemployment locality .....	Lived in an area with unemployment over 10.5% at time of interview	.08
South .....	Lived in the South at time of interview	.37
West .....	Lived in the West at time of interview	.20
Midwest .....	Lived in the Midwest at time of interview	.25
Urban residence .....	Lived in an urban area at time of in- terview	.79

TABLE A3  
REGRESSION RESULTS FOR CONTROL VARIABLES IN NLSY ANALYSIS

Variable	All Respondents	Blacks	Whites
Constant .....	.375 (19.16)	.372 (8.64)	.388 (18.05)
Probation (youth) .....	-.039 (5.16)	-.051 (3.17)	-.032 (3.87)
Charged (youth) .....	.007 (.89)	.036 (1.89)	.001 (.14)
Convicted (youth) .....	.008 (1.08)	.025 (1.28)	.000 (.03)
Stopped by police (youth) .....	-.009 (2.28)	-.020 (2.32)	-.005 (1.12)
Age .....	.001 (.98)	-.002 (1.30)	.002 (2.58)
Black .....	-.042 (10.55)	...	...
Working at last interview .....	.221 (56.04)	.256 (31.96)	.199 (43.79)
Working at second last interview .....	.008 (1.86)	.010 (1.25)	.007 (1.43)
Was married .....	-.002 (.43)	.010 (.90)	-.013 (2.30)
Currently married .....	.031 (9.31)	.044 (5.66)	.022 (6.20)
Less than high school .....	-.042 (9.27)	-.037 (4.10)	-.041 (7.87)
Some college .....	.022 (5.83)	.039 (4.50)	.016 (4.13)
Low unemployment locality .....	.013 (4.37)	.013 (2.04)	.010 (3.21)
High unemployment locality .....	-.021 (4.14)	-.072 (4.81)	-.012 (2.17)
South .....	.007 (1.52)	.007 (.68)	-.001 (.27)
West .....	.000 (.05)	-.022 (1.46)	.000 (.04)
Midwest .....	-.004 (.81)	-.019 (1.49)	-.007 (1.24)
Urban residence .....	.004 (1.40)	.005 (.64)	.005 (1.62)

NOTE.—Absolute *t*-ratios are given in parentheses.

## REFERENCES

- Beck, Allan, and Darrell Gilliard. 1997. "Males in the Custody of State and Federal Prisons and Local Jails, by Race." Unpublished tables. Bureau of Justice Statistics, Washington, D.C.
- Beckett, Katherine. 1997. *Making Crime Pay: The Politics of Law and Order in the Contemporary United States*. New York: Oxford University Press.
- Blank, Rebecca, ed. 1995. *Social Protection versus Economic Flexibility: Is There a Trade-Off?* Chicago: University of Chicago Press.
- Boggess, Scott, and John Bound. 1993. "Did Criminal Activity Increase during the 1980s? Comparisons across Data Sources." Working Paper no. 4431. National Bureau of Economic Research, Cambridge, Mass.
- Boshier, Roger, and Derek Johnson. 1974. "Does Conviction Affect Employment Opportunities?" *British Journal of Criminology* 14:264–68.
- Bound, John, and Richard B. Freeman. 1992. "What Went Wrong? The Erosion of Relative Earnings and Employment among Young Black Men in the 1980s." *Quarterly Journal of Economics* 107:201–32.
- Box, George E. P., Gwilym M. Jenkins, and Gregory C. Reinsel. 1994. *Time Series Analysis: Forecasting and Control*, 3d ed. Englewood Cliffs, N.J.: Prentice Hall.
- Buikhuisen, Wouter, and Fokke P. H. Dijksterhuis. 1971. "Delinquency and Stigmatization." *British Journal of Criminology* 11:185–88.
- BJS (Bureau of Justice Statistics). 1992. *Survey of State Prison Inmates, 1991*. Washington, D.C.: Department of Justice.
- . October 1993. *Survey of Inmates of State Correctional Facilities, 1991*. ICPSR. Ann Arbor, Mich.: Inter-University Consortium for Political and Social Research.
- . May 1994. *Survey of Inmates of State Correctional Facilities, 1986*. ICPSR. Ann Arbor, Mich.: Inter-University Consortium for Political and Social Research.
- . October 1994. *Survey of Inmates of Federal Correctional Facilities, 1991*. ICPSR. Ann Arbor, Mich.: Inter-University Consortium for Political and Social Research.
- . 1995a. *Sourcebook of Criminal Justice Statistics*. Washington, D.C.: Bureau of Justice Statistics.
- . 1995b. *Census of State and Federal Correctional Facilities, 1995*. Washington, D.C.: Bureau of Justice Statistics.
- . 1996. *Sourcebook of Criminal Justice Statistics*. Washington, D.C.: Bureau of Justice Statistics.
- . 1997. *Sourcebook of Criminal Justice Statistics*. Washington, D.C.: Bureau of Justice Statistics.
- . February 1997a. *Survey of Jail Inmates, 1978*. ICPSR. Ann Arbor, Mich.: Inter-University Consortium for Political and Social Research.
- . February 1997b. *Survey of Inmates of Local Jails, 1983*. ICPSR. Ann Arbor, Mich.: Inter-University Consortium for Political and Social Research.
- . February 1997c. *Survey of Inmates of State Correctional Facilities, 1979*. ICPSR. Ann Arbor, Mich.: Inter-University Consortium for Political and Social Research.
- . June 1997. *Survey of Inmates of Local Jails, 1989*. ICPSR. Ann Arbor, Mich.: Inter-University Consortium for Political and Social Research.
- Calmfors, Lars, and Driffill, John. 1988. "Centralisation of Wage Bargaining and Macroeconomic Performance." *Economic Policy* 6:13–62.
- Center for Human Resource Research. 1995. *National Longitudinal Survey of Youth, 1979–1993*. (MRDF) Columbus: Center for Human Resource Research, Ohio State University.

- Clogg, Clifford C. 1974. *Measuring Underemployment: Demographic Indicators for the United States*. New York: Academic Press.
- Colbjørnsen, Tom, and Arne L. Kalleberg. 1988. "Spillover, Standardization, and Stratification: Earnings Determination in the United States and Norway." *European Sociological Review* 4:20-31.
- Council of Europe. 1992. Prison Information Bulletin no. 16, June.
- Crouch, Colin. 1985. "Conditions for Trade Union Wage Restraint." Pp. 105-39 in *The Politics of Inflation and Economic Stagnation: Theoretical Approaches and International Case Studies*, edited by Leon Lindberg and Charles Maier. Washington, D.C.: Brookings.
- Doeringer, Peter B., and Michael Piore. 1971. *Internal Labor Markets and Manpower Analysis*. Lexington, Mass.: Heath.
- Donziger, Steven R., ed. 1996. *The Real War on Crime: The Report of the National Criminal Justice Commission*. New York: Harper Collins.
- Draper, Norman, and Harry Smith. 1981. *Applied Regression Analysis*, 2d ed. New York: Wiley.
- Eckland-Olson, Sheldon, Michael Supanic, James Campbell, and Kenneth J. Lenihan. 1983. "Postrelease Depressions and the Importance of Familial Support." *Criminology* 21:253-75.
- Eurostat. 1997. *Eurostat Yearbook '97: A Statistical Eye on Europe 1986-1996*. Luxembourg: Office for Official Publications of the European Communities.
- Freeman, Richard B. 1991. "Crime and the Employment of Disadvantaged Youths." Working Paper no. 3875, National Bureau of Economic Research.
- . 1995. "The Limits of Wage Flexibility to Curing Unemployment." *Oxford Review of Economic Policy* 11:63-72.
- Gans, Herbert J. 1995. *The War against the Poor*. New York: Basic.
- Giersch, Herbert. 1993. *Openness for Prosperity: Essays in World Economics*. Cambridge, Mass.: MIT Press.
- Gilliard, Darrell K., and Allen J. Beck. 1997. "Prison and Jail Inmates at Midyear 1996." *Bureau of Justice Statistics Bulletin*. Washington, D.C.: Bureau of Justice Statistics.
- Goldfield, Michael. 1987. *The Decline of Organized Labor in the United States*. Chicago: University of Chicago Press.
- Gourevitch, Peter. 1986. *Politics in Hard Times: Comparative Responses to International Economic Crises*. Ithaca, N.Y.: Cornell University Press.
- Granovetter, Mark. 1985. "Economic Action and Social Structure: The Problem of Embeddedness." *American Journal of Sociology* 91:481-510.
- Grogger, Jeffrey. 1995. "The Effect of Arrests on the Employment and Earnings of Young Men." *Quarterly Journal of Economics* 110:51-71.
- Hicks, Alexander M. 1994. "The Social Democratic Corporatist Model of Economic Performance in the Short- and Medium-Run Perspective." Pp. 189-217 in *The Comparative Political Economy of the Welfare State*, edited by Thomas Janoski and Alexander Hicks. New York: Cambridge University Press.
- Hsiao, Cheng. 1986. *Analysis of Panel Data*. New York: Cambridge University Press.
- Irwin, John. 1970. *The Felon*. Englewood Cliffs, N.J.: Prentice Hall.
- Irwin, John, and James Austin. 1994. *It's about Time: America's Imprisonment Binge*. Belmont, Calif.: Wadsworth.
- Jancovic, Ivan. 1977. "Labor Markets and Imprisonment." *Crime and Social Justice* 8:17-31.
- Janoski, Thomas. 1990. *The Political Economy of Unemployment: Active Labor Market Policy in West Germany and the United States*. Berkeley and Los Angeles: University of California Press.
- Janoski, Thomas, Christa McGill, and Vanessa Tinsley. 1997. "Making Institutions

- Dynamic in Cross-National Research: Time-Space Distancing in Explaining Unemployment." *Comparative Social Research* 16:227–68.
- Jencks, Christopher. 1991. "Is Violent Crime Increasing?" *American Prospect* 4:98–109.
- Kolberg, Jon Eivind, and Gøsta Esping-Andersen. 1990. "Welfare States and Employment Regimes." *International Journal of Sociology* 20 (3): 3–36.
- Korpi, Walter. 1990. "Political and Economic Explanations for Unemployment: A Cross-National and Long-Term Analysis." *British Journal of Political Science* 21: 315–48.
- Langan, Patrick A. 1991. "America's Soaring Prison Population." *Science* 251:1568–73.
- Layard, Richard, Stephen Nickell, and Richard Jackman. 1991. *Unemployment: Macroeconomic Performance and the Labour Market*. Oxford: Oxford University Press.
- Lindbeck, Assar. 1985. "What Is Wrong with the West European Economies?" *World Economy* 8:153–70.
- Lynch, James. 1995. "Crime in International Perspective." Pp. 11–38 in *Crime*, edited by James Q. Wilson and Joan Petersilia. San Francisco: Institute for Contemporary Studies.
- Mauer, Marc. 1994. *Americans behind Bars: The International Use of Incarceration*. Washington, D.C.: Sentencing Project.
- McFate, Katherine, Timothy Smeeding, and Lee Rainwater. 1995. "Markets and States: Poverty Trends and Transfer System Effectiveness in the 1980s." Pp. 29–108 in *Poverty Inequality and the Future of Social Policy: Western States in the New World Order*, edited by Katherine McFate, Roger Lawson, and William Julius Wilson. New York: Russell Sage Foundation.
- Miller, Rod. 1997. Personal communication. National Institute of Justice.
- Neubourg, Chris. 1983. *Labour Market Accounting and Labour Utilization*. Groningen: University of Groningen, Department of Economics.
- O'Brien, Robert M. 1996. "Police Productivity and Crime Rates: 1973–1992." *Criminology* 34:183–207.
- OECD. 1987, 1993. *Employment Outlook*. Paris: OECD.
- . 1994a. *The OECD Jobs Study: Part II—the Adjustment Potential of the Labour Market*. Paris: OECD.
- . 1994b. *New Orientations for Social Policy*. Paris: OECD.
- . 1996. *Historical Statistics, 1960–1994, on Diskette*. Paris: OECD.
- . 1997. *Labour Force Statistics, 1976–1996*. Paris: OECD.
- Olson, Mancur. 1982. *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities*. New Haven, Conn.: Yale University Press.
- Petersilia, Joan, and Susan Turner, with Joyce Peterson. 1986. *Prison versus Probation in California: Implications for Crime and Offender Recidivism*. Santa Monica, Calif.: Rand.
- Polanyi, Karl. 1944. *The Great Transformation: The Political and Economic Origins of Our Time*. Boston: Beacon.
- Rusche, Georg, and Otto Kirchheimer. 1939. *Punishment and Social Structure*. New York: Russell & Russell.
- Sampson, Robert J., and John H. Laub. 1993. *Crime in the Making: Pathways and Turning Points through Life*. Cambridge, Mass.: Harvard University Press.
- Schwartz, Richard D., and J. H. Skolnick. 1962. "Two Studies of Legal Stigma." *Social Problems* 10:133–42.
- Statistical Abstract of the United States*. 1995. Washington, D.C.: Government Printing Office.
- Tonry, Michael. 1995. *Malign Neglect: Race, Crime and Punishment*. New York: Oxford University Press.

American Journal of Sociology

- Traxler, Franz. 1994. "Collective Bargaining Levels and Coverage." *OECD Employment Outlook*. Paris: OECD.
- van Dijk, Jan J. M., and Pat Mayhew. 1992. *Criminal Victimization in the Industrialized World*. The Hague: Dutch Ministry of Justice.
- Visser, Jelle. 1991. "Trends in Trade Union Membership." *OECD Employment Outlook* July:97-134.
- Waldfoegel, Joel. 1994. "Does Conviction Have a Persistent Effect on Income and Employment?" *International Review of Law and Economics* 14:103-19.
- Western, Bruce. 1997. *Between Class and Market: Postwar Unionization in the Capitalist Democracies*. Princeton, N.J.: Princeton University Press.
- Witte, Ann D., and Pamela Reid. 1980. "An Exploration of Labor Market Performance for Prison Releases." *Journal of Urban Economics* 8:313-39.