

**IMPRISONMENT AND LABOR MARKET OUTCOMES: EVIDENCE FROM 15 AFFLUENT
WESTERN DEMOCRACIES***

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Abstract

Most research on the relationship between prisons and labor markets treats imprisonment as an instrumental response to labor surplus. This paper explores the opposite causal association: the impact of imprisonment trends on employment. The analysis uses data from 15 countries, observed over the period 1960 to 1990, to test whether growth in imprisonment rates affects rates of unemployment and male labor force participation in subsequent years. Multivariate models control for standard macroeconomic variables, relevant demographic trends, and institutional aspects of labor markets that are likely to affect both imprisonment rates and employment. Results show statistically significant and substantively strong imprisonment effects on both dependent variables. The implication of these findings is that prisons are an important part not only of labor markets, but also of stratification processes more generally in modern western societies.

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Introduction

This paper argues that prisons, and the criminal justice systems of which they are a part, are integral parts of the stratification systems in modern western societies. In these societies, aggregate patterns of inequality are produced by an array of institutional orders that govern the movement of individuals along alternative life course paths. Status attainment is influenced not only by individual attributes, but by the organization of opportunities within a given society and the distribution of individuals across opportunity space. Research along these lines has tended to focus exclusively on legitimate institutions that are chartered to produce positive life course outcomes, especially schools and labor markets, and to treat as residual those processes that produce negative outcomes, such as ignorance, poverty, criminality, and social marginality in general. The implicit assumption seems to be that marginality is the result of poorly developed (legitimate) institutions and invidiously distributed (positive) opportunities, and that life on the margin of society is naturally disorganized and disconnected from the institutional mainstays of modern life.

This is a one-sided view. Ethnographic accounts have revealed surprisingly organized career patterns in a variety of socially marginal settings, from Goffman's (1961) asylum inmates and Becker's (1973) drug users and jazz musicians to Duneier's (1999) homeless street merchants. While ethnographic research has tended to emphasize patterns of organization as they emerge through face-to-face interaction, there is abundant evidence that illegitimate careers are also institutional productions, often structured in decisive ways by highly rationalized ideological schemas. Thus, just as "education" is constituted by the organization of schools around age-graded theories of cognitive

development, “insane” and “delinquent” careers are constituted by networks of treatment organizations that embody elaborate professional etiologies (Castel 1988; Foucault 1973; Sutton 1988). Rationalized “master statuses” (Becker 1973), whether legitimate or illegitimate, have broad and often complex life-course implications. The status of “disability” is a good example, because in contemporary society it lies on the borderline between legitimacy and illegitimacy: on the one hand, disability is likely to generate stigma in face-to-face interaction (Goffman 1963), but it is also a public status that confers specific immunities and entitlements, from preferential parking to civil rights protection. Criminality is an unambiguously illegitimate status, and because it is constituted primarily in legal terms it may be the most organized and rationalized illegitimate status of all. This paper explores the aggregate life-course implications of criminality, focusing specifically on the impact of imprisonment on labor markets.

In taking his approach, this paper cuts against the grain of most work on the social role of imprisonment. The tendency in a vast body of empirical research has been to treat imprisonment either as a functional response to labor surplus (Chiricos and DeLone 1992; Rusche and Kirchheimer 1968), or, in a more sophisticated version, as an ideological reflection of the disciplinary logic of capitalist labor markets (Foucault 1979; Melossi and Pavarini 1981). Both versions are empirically suspect and theoretically impoverished. In empirical terms, recent research casts serious doubt on the long-accepted finding that labor market dynamics drive imprisonment rates (D'Alessio and Stolzenberg 1995; Sutton 2000; 2001). While the literature seems to have dramatically overstated the impact of labor markets on imprisonment, recent evidence suggests a powerful causal influence in the opposite direction. Work by Sampson and Laub (1993) has shown that early experience with criminality has negative long-term effects on individuals' chances for family stability, educational attainment, and occupational mobility. Research by Western and Beckett (1999) and Western and Pettit (2000) has shown at the aggregate level that mass imprisonment in the

U.S. removes a substantial proportion of young black males from the legitimate labor market—not only while they are incarcerated, but also after they return to the civilian population and for the rest of their lives.

Two theoretical questions are at stake in this paper. First, Western and his colleagues make the bold claim that prisons are labor market institutions. Their evidence is strong for the U.S. case, but the question remains whether this is an empirical observation relevant only to the U.S., or a broader insight about the role of prisons across capitalist societies. American imprisonment rates are higher than those of any democratic society, but the American labor market is also the most decentralized, fragmented, and unregulated of any in the democratic capitalist world. Since the 18th century, there has been an obvious elective affinity between the moral logic of imprisonment and the liberal ideology of formally free labor markets (Foucault 1979). It is important to ask whether imprisonment has similar effects on employment in countries where labor markets are more centralized, unions are stronger, and governments support more interventionist macroeconomic policies. The second question has to do with the structure and operation of labor markets themselves. Since the 1980s there has been an intense debate about the effects of different kinds of labor market structures on economic performance, especially employment. The debate focuses on labor market rigidity: the existence and extent of institutional constraints on open bidding for jobs, wages, and working conditions between firms and individual workers. From a neoclassical economic perspective, labor market regulation is likely to erode economic performance by increasing the costs of hiring and firing employees, causing wages to rise above market-clearing rates. On the other side of the debate, a stream of literature running from Calmfors and Driffil (Calmfors and Driffill 1988; Calmfors 1993) and Esping-Andersen (1990; 1999) to Garrett (1998) has argued that U.S.-style market liberalism is not the only road to economic health. This work suggests that highly centralized social-democratic regimes can achieve high levels of productivity, keep inflation in check, *and* reduce

inequality by encouraging wage restraint across the entire economy.¹ If prisons are indeed labor market institutions, then important evidence in this debate has so far been ignored.

This paper addresses these issues by examining the effects of imprisonment rates on employment trends across 15 advanced capitalist democracies, observed over the period 1960-1990. The cross-national dimension of this study allows me to test whether this effect is present across a range of structurally differentiated labor markets. The longitudinal dimension captures important shifts in the capitalist world economy that might have influenced how imprisonment and labor market institutions are related to employment outcomes—specifically, the oil shocks of 1973 and 1981 and the associated episodes of stagflation in the 1970s and recession in the 1980s. In subsequent sections of this paper I delineate specific hypotheses, describe the data and estimation techniques to be used, and present the results of the analysis.

Variables and Hypotheses

The dependent variables for this study are two standard indicators of employment trends: unemployment and labor force participation. Official unemployment rates are the most widely used measure, but their well-known limitation is that they count only people who are active in the labor force—usually people who are either working or out of work but collecting unemployment benefits. Unemployment rates ignore people who have never participated in the labor force, as well as “discouraged workers”—those who have dropped out because of a perceived lack of opportunities. Labor force participation rates provide a useful (inverse) measure of the relative size of the population that is excluded from work. But there is another problem here. Among the countries in this sample, measures of aggregate labor force participation confound two opposite trends: male rates declined in all countries between 1960 and 1990, and female rates rose in all countries but one

¹ For a brief summary of the debate on the effects of labor markets on performance, compare Siebert (1997) and Nickell

(Austria). Since the overwhelming majority of prison inmates are young men, we would expect imprisonment rates to be directly related to male labor force participation. That is the measure used here.

Box plots of the dependent variables are shown in Figures 1 and 2. For each year, the boxes are bounded at the 25th and 75th percentiles, and the line at the middle of the box denotes the median. The whiskers extend to the 10th and 90th percentiles, and dots signify the remotest outliers at either end of the distributions. Figure 1 clearly shows the impacts of global economic shocks that occurred in the early 1970s and again in the 1980s: unemployment rates were fairly stable from 1960 to 1973, then rose steadily and reached a brief plateau late in the decade; unemployment again rose sharply beginning in 1981, followed by an uneven decline. By 1990 the median rate of unemployment was four times as high as in 1960. Male labor force participation rates, displayed in Figure 2, show almost no effects of economic shocks. Median rates declined steadily from 1960 to about 1980, and during this time the distributions around the medians were quite consistent. Variance increased after that: Male participation rates continued to decline in a few countries, but the upper half of the distribution remained roughly stable from about 1981 on.

—Figures 1 and 2 about here—

The primary independent variable is imprisonment rates, measured here in the standard way as the number of inmates per 100,000 population. For the purposes of this analysis I use aggregate imprisonment rates, combining sentenced and remand inmates, and inmates in local jails as well as those in penitentiaries. Imprisonment data were drawn from a number of different sources. For most countries, statistical yearbooks provided baseline figures that were in some cases supplemented or replaced by other sources. Government statistical agencies in Canada, Germany, and the Netherlands provided data directly, and Australian yearbook data were supplemented with data

published by the Australian Institute of Criminology (Mukherjee et al. 1989) and in Biles (1982). The definitive source for Scandinavian criminal justice systems is von Hofer (1997); Austrian data are from Hanak and Pilgram (1991); and Belgian data are from Snacken (1991). For European countries from 1970 on, data have been cross-checked with figures published by the Council of Europe (1990). The expectation is that imprisonment rates will show a positive effect on unemployment and a negative effect on male labor force participation.

The analysis also uses two sets of control variables. The first set of controls incorporates basic macroeconomic expectations. It is axiomatic in business cycle theory that productivity growth and inflation are negatively associated with unemployment growth (Dornbusch, Startz and Fischer 1998). Models represent these effects using measures of per capita GDP growth and change in the GDP deflator. Macroeconomic theory also suggests that social benefits such as unemployment compensation influence rates of unemployment by raising the “reservation wage,” and a substantial amount of research has shown that the more generous the benefit and the longer it persists, the higher the rate of unemployment (Scarpetta 1996, pp. 51-2). Models will control for this effect using a measure of spending on unemployment benefits as a percentage of GDP. There is likely to be a positive effect on unemployment rates, but probably no effect on labor force participation. I also adjust for the relative size of the young male population. Young people are more likely than their elders to be unemployed or labor-force nonparticipants; young men are also more likely to be involved in criminality, and to be imprisoned. Thus, net of other effects, rates of unemployment, nonparticipation, and imprisonment are all likely to be higher when young males make up a relatively large proportion of the population.

I introduce additional variables to represent the broader institutional context of labor markets. One consideration is the availability of life-course paths other than work and criminality. Two obvious alternatives are education and military service: for a given population of young men,

growth in school enrollment or military enlistment rates will shrink the pool of individuals who are available for employment, or at risk of imprisonment. The variables to be used here are (1) age-adjusted male secondary and tertiary enrollment rates, and (2) military enlistments as a percentage of the population.² Two additional variables—union strength and the centralization of wage bargaining—capture important dimensions of labor market structure. Stronger union organization enhances the collective power of workers to influence a wide range of social and economic policies. In the post-World War II period, one of the most important macroeconomic policy issues facing western governments has been how to balance inflation and unemployment, and workers and their unions obviously prefer to trade off higher inflation in return for lower unemployment. Centralization of wage-bargaining is a major indicator of labor market regulation. Most macroeconomic theory argues that centralization reduces employers' flexibility to respond to changing economic conditions and encourages employed workers to push for excessive wage increases, thus ultimately pushing unemployment rates up and labor force participation rates down (e.g., Lindbeck and Snower 1989). Other work suggests that the relationship is “hump-shaped”—that is, that both centralized and decentralized labor markets can perform efficiently; the worst possible situation is bargaining at an intermediate (industry) level, where unions are powerful enough to distort market forces and competition among unions and industries discourages wage restraint (Calmfors and Driffill 1988; Calmfors 1993; Scarpetta 1996). I will test both linear and curvilinear effects using a four-point centralization scale from Golden et al. (Golden, Lange and Wallerstein 1997). Finally, it will be important to examine the effects of partisan politics on macroeconomic policy and performance. In the literatures on political economy and social policy, the role of left (social democratic and labor) parties in has drawn the most attention. Comparative research shows that left parties encourage more redistributive social policies (Hicks and Misra 1993; Hicks and

² Military enlistment data, from Faber (1989) and IISS (1983-91), cannot be disaggregated by age and sex.

Swank 1992; Korpi 1989), tighter regulation of labor markets (Garrett 1998; Hicks 1988), and a preference for inflation over unemployment (Hibbs 1997). On these grounds I anticipate negative effects of left party dominance on unemployment rates, and positive effects on male labor force participation.

Data and Methods

The data for this study comprise time-series for 15 countries observed, for the most part, from 1960 to 1990. The sample includes five Anglo-American liberal democracies (Australia, Canada, New Zealand, the United Kingdom, and the United States), four Scandinavian social democracies (Denmark, Finland, Norway, and Sweden), and six European corporatist democracies (Austria, Belgium, France, Germany [F.R.G.], and the Netherlands). The sample was stratified in this way to maximize variation on key economic and labor-market variables while still maintaining a focus on the most developed economic systems. Panels are unbalanced due to missing data from some countries in the sample—most significantly, German imprisonment data are unavailable before 1961, and Belgian data on unemployment benefits end in 1986—but these imbalances are irrelevant for the estimation procedures used here. The resulting data set contains 428 observations.

Data for the dependent variables, unemployment and male labor force participation rates, are from OECD sources (OECD 1992; OECD Various years). Imprisonment data were drawn from a number of different sources. For most countries, statistical yearbooks provided baseline figures that were in some cases supplemented or replaced by other sources. Government statistical agencies in Canada, Germany, and the Netherlands provided data directly, and Australian yearbook data were supplemented with data published by the Australian Institute of Criminology (Mukherjee et al. 1989) and in Biles (1982). The definitive source for Scandinavian criminal justice systems is von Hofer (1997); Austrian data are from Hanak and Pilgram (1991); and Belgian data are from Snacken (1991).

For European countries from 1970 on, data have been cross-checked with figures published by the Council of Europe (1990). Detailed definitions of other independent variables and sources of data are listed in an appendix table.

Models of cross-sectional and over-time variation are estimated in partial adjustment form, meaning that a lagged dependent variable is included among the regressors. This has the salutary statistical effect of correcting for serially correlated error; more substantively it controls for the routine expectation that prison growth during any interval will be inversely dependent on its size at the beginning of the interval (Beck and Katz 1996). Most time-trending continuous variables (including the dependent variable) are rendered stationary by first differencing. Differences are expressed in proportional change form, so that $\Delta Y = \log(Y_t/Y_{t-1})$, and likewise for the ΔX variables. Exceptions to this are the lag dependent variables and the young males variable, the last of which showed either no effects or negative effects when it was used in first-difference form. For this study these variables are measured in (log) level form. Wage bargaining and left party dominance variables are also measured in levels form, smoothed using three-year running averages. The wage bargaining variable required smoothing to moderate the influence of transient spikes that appear in the data series for some countries. My treatment of the partisan dominance variables follows common practice in the comparative literature on social welfare effort (e.g., Hicks and Swank 1992). The usual correction for heterogeneity bias is to estimate fixed effects models using binary variables for (N-1) countries in the sample. In this analysis I have used the equivalent technique of centering the variables—that is, I recalculated each value as the deviation from the mean of that variable within a given (country) time series. With these adjustments, models are amenable to estimation using OLS with panel-corrected standard errors (Beck and Katz 1995).

Results

Tables 1 and 2 show first-round results from models of unemployment growth and labor force participation. An important issue that these tables address is the lag structure of any possible effect of imprisonment. Most of the variables in these models appear commonly in the macroeconomics literature with lags of a year or less, but we know almost nothing about possible delays in the impact of imprisonment trends. Indeed, the work of Western and Beckett (1999) suggests that the impact of imprisonment may vary over the short and long term: a rise in imprisonment rates might reduce unemployment (or raise labor force participation) in the short run by shrinking the civilian population base, and it is likely to have the opposite effects over the longer term when inmates are returned to the population with few chances for productive work. I use finite distributed lag models (Greene 1993, pp. 543-558) to test for variable lagged effects. Since most spells of imprisonment last less than a year (even in the U.S.), it seems reasonable to test for lags of one to three years—specifically, $\Delta X = \log(X_t/X_{t-1})$; $L\Delta X = \log(X_{t-1}/X_{t-2})$; and $L2\Delta X = \log(X_{t-2}/X_{t-3})$.³

—Tables 1 and 2 about here—

Table 1 shows two models of growth in unemployment rates. The first is the full distributed lag model. The imprisonment coefficients do not show a curvilinear effect, rather a positive linear effect that appears after a two-year delay and then disappears again. This allows a more parsimonious representation by dropping the first and third imprisonment variables and retaining the second. This model appears in the second column, where the imprisonment coefficient shows that on average a one percent rise in imprisonment rates (from t-2 to t-1) corresponds to nearly a half percent increase in unemployment rates. This is a substantial effect, all the more remarkable given that almost all of the control variables perform as expected. Effects of GDP growth are in the right direction, and massive: on average, growth of one percent in GDP corresponds to nearly a six

percent decline in unemployment rates. The coefficient for unemployment benefits is positive and significant, confirming the expectation that more generous spending on benefits encourages workers to be more choosy about which jobs they will accept. Inflation has no apparent effects.⁴

Models of change in male labor force participation, shown in Table 2, are overall much weaker. Still, they show the same pattern of imprisonment effects as in the previous table. In the distributed lag model in the first column, again the only significant imprisonment coefficient is that associated with the second lag. A simplified model appears in the second column, where the first coefficient shows that a one percent increase in imprisonment rates leads, two years later, to a decline in labor force participation rates of about two hundredths of a percent. Some other effects are worth noting. The GDP coefficient is positive and significant (using a one-tailed test), showing as we would expect that male participation rates decline during recessions and rise during recoveries. The coefficient for young males is negative and significant, showing that participation rates tend to be lower when the pool of entry-level workers is larger. Participation rates, like unemployment rates, are unresponsive to inflation. As expected, spending on unemployment benefits is also irrelevant.

Models in Table 3 move beyond the baseline equation to incorporate additional demographic and institutional factors that might be associated with imprisonment rates and employment trends. Two models are shown for each outcome: in the first model (columns 1 and 3), indicators of school enrollment and enlistment rates are added; the second model (columns 2 and 4) also includes union growth, centralization of wage bargaining, and left party dominance. Results are simple to describe. First, previous findings for the most part persist. Most importantly, prison growth continues to show strong positive impacts on unemployment rates and negative impacts on participation rates. The effects of GDP growth, unemployment benefits, and the young male

³ Because the imprisonment variable is first-differenced, multicollinearity among its lagged values is not a problem. The highest zero-order correlation among the three is -.10.

population on unemployment rates are not changed in any substantive way by the inclusion of additional control variables. In the models for labor force participation, the effect of GDP growth disappears; but the relative size of the young male cohort continues to show a significant association. Second, and quite obviously, none of the added variables shows any appreciable impact on employment trends.

—Table 3 about here—

Conclusion

The empirical goal of this paper has been to generalize and test Western and Beckett's (1999) argument that prisons are labor market institutions, using data from a sample of affluent democracies observed over time. My theoretical goals are more ambitious: I sought, first, to treat crime and punishment as an institutional field that contributes to the organization of the life course, much like schools and labor markets—albeit with different substantive results. Second, I sought to address important debates about structural differences in labor market institutions in the capitalist world.

Empirical goals were met. Analyses showed consistently that prison growth has a strong depressive effect on labor markets—raising imprisonment rates and lowering levels of labor market participation—across the present sample. These effects appeared, moreover, in models that controlled for macroeconomic and demographic influences that have well established effects on employment. They persist also in more complex models that control for a wide range of structural and political factors that shape life-course institutions—not just labor markets—across the modern west. These models undoubtedly understate the impact of imprisonment on some communities and groups. Just as prisons take a higher toll on African-Americans and Latinos than on whites in the

⁴ Constant terms are not shown in these tables since, due to centering, they are usually close to zero, and never

U.S., their impact on immigrants and native minorities is disproportionately large throughout the capitalist world.

These findings have important theoretical implications. Prisons not only have a statistically significant effect on unemployment and participation, according to the present data they have a *stronger* impact than social welfare, schooling, labor market structure, and the power of the left as expressed through unions and partisan politics. This suggests that theoretical models of the life-course and labor markets that exclude stigmatized and stigmatizing institutions are seriously misspecified. Thus, this analysis is only a first step in a larger empirical and theoretical program that seeks to integrate crime and punishment into a more comprehensive account of allocation processes in modern societies.

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Figure 1. Box Plot of Unemployment Rates Among 15 Affluent Democracies, 1960-90

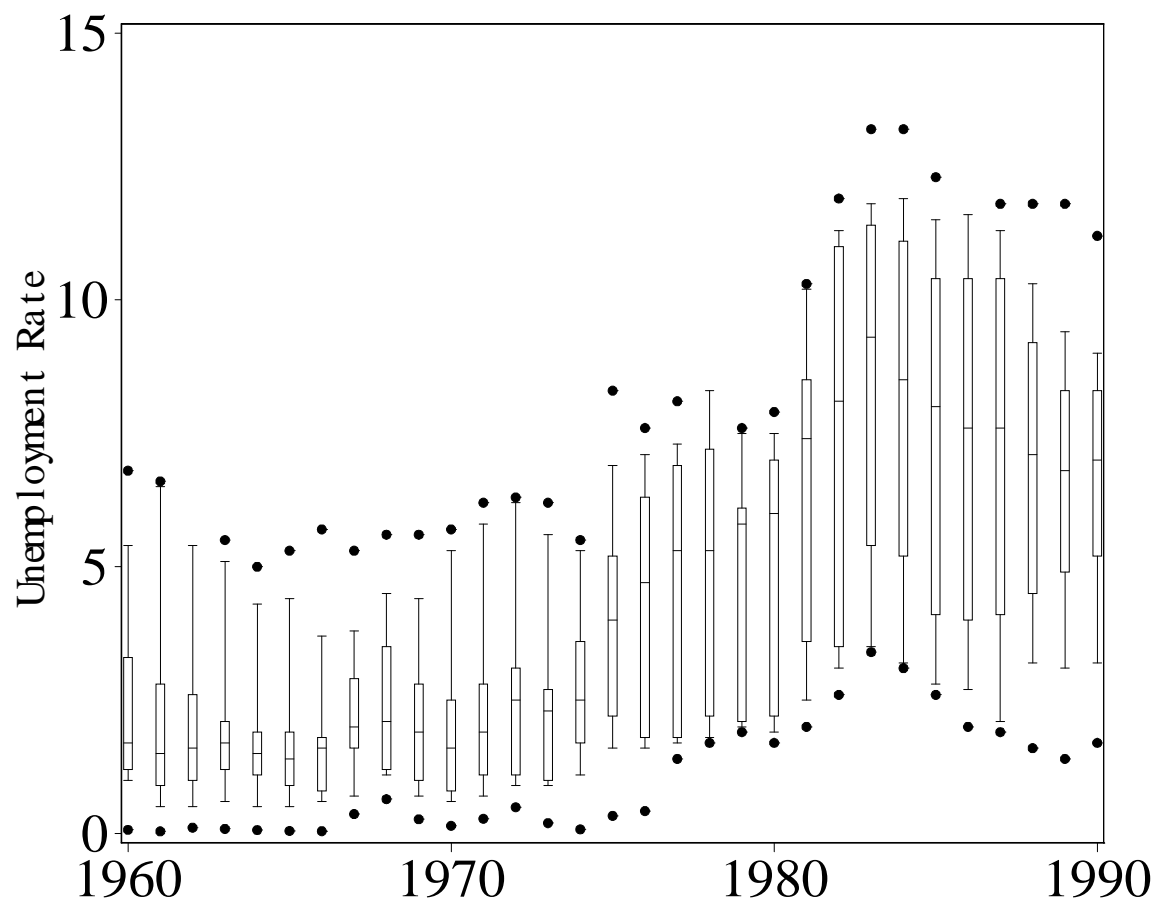


Figure 2. Box Plot of Male Labor Force Participation Rates Among 15 Affluent Democracies, 1960-90

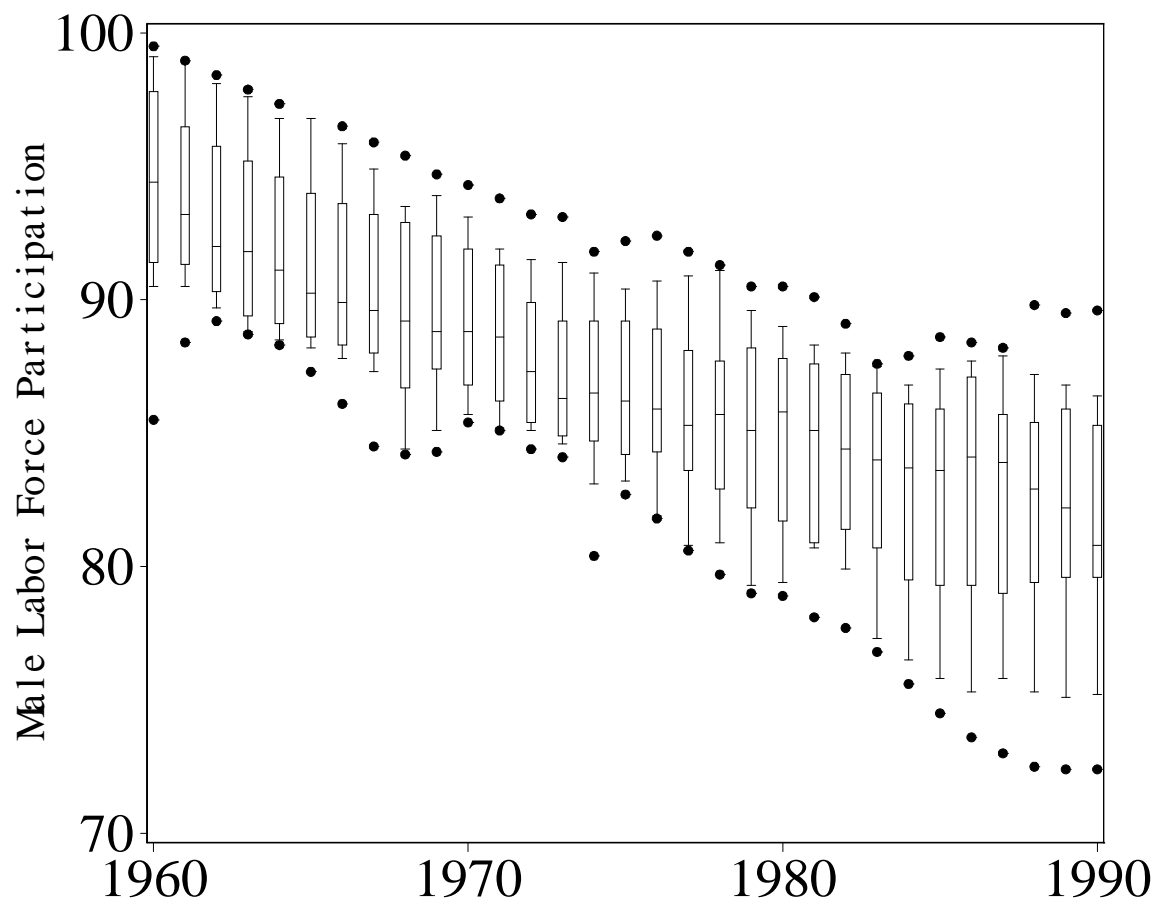


Table 1. Effects of Imprisonment Rates and Selected Variables on Unemployment Growth, 1960-90 (OLS estimates with panel-corrected SEs in parentheses)

	1.	2.
Δ Imprisonment rates (t-1 to t)	.193 (.142)	
Δ Imprisonment rates (t-2 to t-1)	.470** (.146)	.488*** (.143)
Δ Imprisonment rates (t-3 to t-2)	.00961 (.146)	
Δ GDP	-5.72*** (.696)	-5.62*** (.665)
Δ GDP deflator	.0964 (.616)	.0874 (.555)
Δ Unemployment benefits	.650*** (.137)	.227*** (.0509)
(log) Young males	.334* (.153)	.335* (.136)
(log) Lag unemployment rate	-.103** (.0308)	-.0894** (.0290)
R^2	.435	.455

Table 2. Effects of Imprisonment Rates and Selected Variables on Growth in Male Labor Force Participation, 1960-90 (OLS estimates with panel-corrected SEs in parentheses)

	1.	2.
Δ Imprisonment rates (t-1 to t)	-.00573 (.00695)	
Δ Imprisonment rates (t-2 to t-1)	-.0183** (.00679)	-.0173** (.00677)
Δ Imprisonment rates (t-3 to t-2)	-.0105 (.00694)	
Δ GDP	.0477* (.0251)	.0465 (.0245)
Δ GDP deflator	.0270 (.0240)	.0271 (.0233)
Δ Unemployment benefits	-.00407 (.00470)	-.00140 (.00144)
(log) Young males	-.0189** (.00714)	-.0186** (.00702)
(log) Lag male labor force participation rate	-.0189** (.00714)	-.0620*** (.0173)
R^2	.0939	.0850

Table 3. Expanded Models of Change in Unemployment and Male Labor Force Participation Rates, 1960-90 (OLS estimates with panel-corrected SEs in parentheses)

	<i>Unemployment</i>		<i>Male labor force participation</i>	
Δ Imprisonment rates	.449*** (.119)	.441*** (.118)	-.0119** (.00481)	-.0122** (.00525)
Δ GDP	-5.28*** (.680)	-5.29*** (.719)	.0423 (.0279)	.0442 (.0270)
Δ Unemployment benefits	.230*** (.0540)	.226*** (.0553)	-.00175 (.00152)	-.00160 (.00158)
Δ GDP deflator	.262 (.592)	.135 (.589)	.0494 (.0279)	.0579* (.0301)
(log) Young males	.528*** (.147)	.548*** (.147)	-.0257** (.00832)	-.0258** (.00851)
Δ Male 2° and 3° school enrollment rates	.126 (.305)	.0456 (.303)	.00614 (.0107)	.00810 (.0121)
Δ Military enlistment rates	-.0936 (.108)	-.0599 (.112)	.00634 (.00659)	.00558 (.00708)
Δ Union density		-.153 (.446)		-.0110 (.0207)
Wage bargaining level		-.0327 (.0172)		.000551 (.000908)
Left party cabinet dominance		.0645 (.0523)		-.00267 (.00211)
(log) Lag unemployment rate	-.0999** (.0332)	-.120*** (.0356)		
(log) Lag male labor force participation rate			-.0582** (.0215)	-.0593** (.0221)
R ²	.442	.457	.0899	.0965