Racial Inequality in Employment and Earnings after Incarceration

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Abstract

This paper analyzes monthly employment and earnings in the year after incarceration with survey data from a sample of individuals just released from prison. More than in earlier research, the data provide detailed measurement of temporary and informal employment and richly describe the labor market disadvantages of formerly-incarcerated men and women. We find that half the sample is jobless in any given month and average earnings are well below the poverty level. Jointly modeling employment and earnings, blacks and Hispanics are estimated to have lower total earnings than whites even after accounting for health, human capital, and criminal involvement. Indeed, whites have worse health and higher rates of drug addiction so accounting for covariates increases the estimated race/ethnicity gap in earnings. A decomposition attributes most of the earnings gaps to racial and ethnic inequalities in employment. Qualitative interviews suggest that whites more than blacks and Hispanics find stable, high-paying jobs through friends and family. These findings synthesize several prior empirical results and underline the unusual disadvantage of African Americans at the nexus of the penal system and the labor market.

Men and women released from incarceration have trouble finding work and are usually employed in low-wage jobs that offer little opportunity for advancement. Poor labor market outcomes among released prisoners are often explained by low levels of schooling, a lack of work experience, and continuing criminal involvement. Through the effects of criminal stigma or eroded human capital during incarceration, serving time in prison has itself been found to reduce employment by as much as a third, and hourly wages by ten to twenty percent (Freeman 1992; Western 2006; Mueller-Smith 2014; cf. Kling 2006; for reviews see Western et al. 2001 and Holzer 2009).

Beyond the low incomes and high unemployment rates of released prisoners, incarceration for blacks and Hispanics is different from incarceration for whites. The racialization of incarceration is reflected most obviously in disparities, in which imprisonment rates are five to eight times higher for African Americans than whites, and twice as high for Hispanics (Tonry and Melewski 2008; Travis et al. 2014, 56–64). Prison admissions and releases are also spatially concentrated in poor minority neighborhoods (Clear 2007; Sampson and Loeffler 2010; Simes 2016).

In the labor market, the stigma of incarceration for black job seekers appears to be greater than for whites (Pager 2003; Pager et al. 2009). Whites with criminal records have better network connections to job opportunities than blacks and Hispanics (Sullivan 1989). African Americans with friends and family out of prison are also less likely to recommend them for jobs, fearing that they may be unreliable or otherwise unsuccessful (Smith 2007). The influence of discrimination and networks on labor market outcomes after incarceration resemble mechanisms for racial inequality observed more widely in high-poverty communities and low-wage

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labor markets (Wilson 1996; Royster 2003). Incarceration thus appears to be distinctively pervasive and closely connected to the social structure of poverty in minority communities. The association between incarceration and poverty forms a novel type of compounded disadvantage affecting minorities, and African Americans in particular, more than whites.

Despite these findings, there are few detailed studies of the labor market experiences of released prisoners. Most quantitative studies rely on large national surveys that miss casual and temporary employment common among highly disadvantaged workers (e.g., Freeman 1992; Grogger 1995; Western 2002). Analyses of labor market outcomes in these studies rely on standard measures of human capital, and poorly control for the acute disadvantages—such as drug addiction and disability—of released prisoners. A few studies analyze administrative records (mostly unemployment insurance data) that provide poor coverage of employment among those with criminal records (e.g. Kling 2006; Pettit and Lyons 2007; Mueller-Smith 2014; cf. Kornfeld and Bloom 1999). Audit studies are suggestive of racial inequality after incarceration, but they draw from a random sample of employers, not from those who are likely to be contacted by job seekers with criminal records (Pager 2003). Moreover, high rates of unemployment among released prisoners are often handled in an ad hoc way in analyses of earnings. Problems of selection into employment are often ignored and zero earners are often treated as a nuisance for data analysis. In short, research on the earnings and employment of formerly-incarcerated workers is likely to overlook the distinctive disadvantages of released prisoners, poorly observe the labor markets in which they work, and fail to integrate the analysis of employment and earnings under very high rates of joblessness.

This paper studies the labor market experiences of a sample of men and women who are followed from state prison in Massachusetts through their first year after incarceration. In contrast to previous research, we use a unique data set that was designed to measure the transition from prison to community and the tenuous employment that follows incarceration. Intensive follow-up in the year after incarceration yields monthly employment and earnings data at a time when labor market experiences are very volatile. Samples of black, white, and Hispanic former prisoners also enable analysis of racial inequalities in employment and earnings after incarceration. We analyze monthly employment and earnings after prison release with a hurdle model that jointly models the probability of employment and the level of earnings, given employment. For a high-unemployment sample like released prisoners, the hurdle model incorporates the high risk of joblessness in estimates of earnings.

EMPLOYMENT AND EARNINGS AFTER INCARCERATION

Monthly employment and earnings data in the first year after incarceration are available from the Boston Reentry Study. The BRS interviewed a sample ($N = 122$) of Massachusetts state prisoners just prior to release from incarceration and then repeatedly over a one-year follow-up period. Four follow-up interviews at one week, two months, six months, and 12 months after prison release yield a detailed history of work and wages. In these data, employment is defined as working at all for pay in a given month, including all informal, casual, and temporary jobs. Earnings includes pay from any job, excluding illegal earnings. Earnings are measured in nominal dollars recorded in 2012 and 2013.

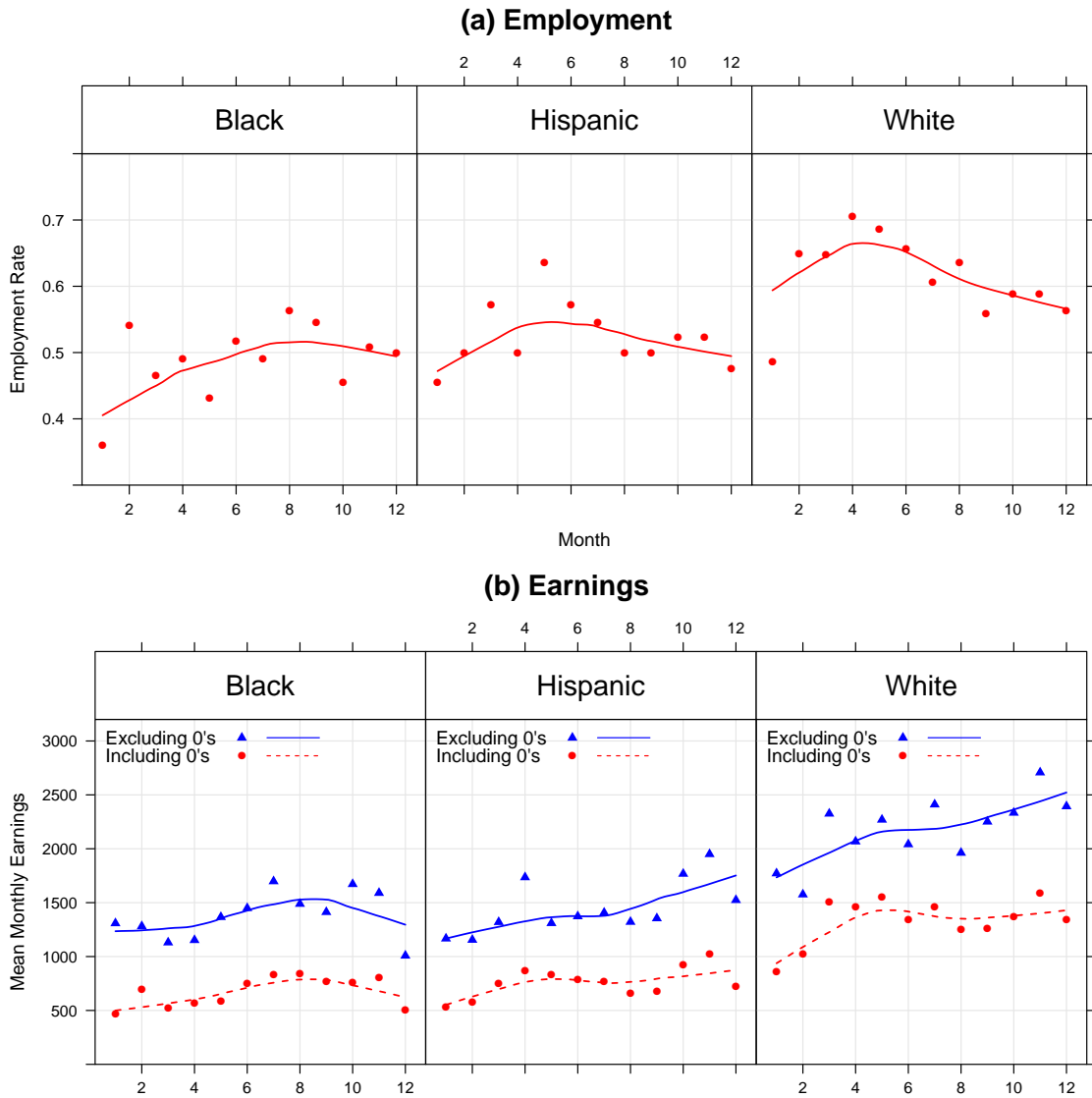**(a) Employment**

(b) Earnings

Figure 1. In the twelve months after prison release: (a) monthly employment rate by race and ethnicity; (b) mean monthly earnings including zero earners and excluding zero earners by race and ethnicity, Boston Reentry Study ($N = 122$).

Figure 1 shows the employment and earnings dependent variables that are analyzed below. Monthly employment rates in the year after incarceration begin at a low level, but increase slightly through the first four to six months after prison release. Employment rates for black respondents never consistently exceeded 50 percent implying a median earnings of zero or close to zero throughout the year after prison release. Hispanics reported slightly higher employment rates that also hovered around 50 percent for the second part of the year. Employment rates were significantly higher for whites. More than 60 percent were in some type of work for 8 of the 12 months after incarceration. Employment rates for whites clearly decline from a peak of 70 percent in month four after prison release, reflecting a rising rate of re-incarceration.

The lower panel of Figure 1 reports monthly average earnings. The figure shows a series of unconditional earnings that includes the unemployed (who have zero earnings). To separate the effects of unemployment, we report a series of conditional earnings that includes only the employed (who have positive earnings). When the unemployed are counted in average earnings, blacks made around $500 a month, annually equivalent to about half the federal poverty line for an individual. Among the employed, black respondents averaged around $1,300 a month, about half the median earnings for black workers in the U.S. labor market as a whole. Earnings for Hispanics were slightly higher, and average monthly earnings for employed respondents exceeded $1,500, equal to about 60 percent of monthly earnings for Hispanic workers in the general labor market. Whites enjoyed a real earnings advantage, averaging about $2,500 a month for positive earners by the end of the first year after incarceration. Average earnings for whites also increased strongly over the year, reaching 80 percent of

monthly earnings for whites in the labor market as a whole (see Bureau of Labor Statistics 2014, 7).

Labor market research on those leaving prison has mainly focused on the effects of incarceration, rather than variability in employment and earnings among those who have been incarcerated. Still, similar to the Boston data, published tabulations with national survey data and administrative records also show a relatively low level of wages among formerly-incarcerated blacks and Hispanics compared to whites (Western 2002; Lyons and Pettit 2011). Large race effects, indicating the low economic status of blacks and Hispanics, have also been widely estimated while controlling for incarceration in studies of administrative data and national surveys (Grogger 1995; Western 2002; Lyons and Pettit 2011; Geller et al. 2011).

RESEARCH ON POST-INCARCERATION EMPLOYMENT

Two main lines of research have studied the labor market experiences of men and women released from prison. One examines racial inequalities in which formerly-incarcerated African Americans and Hispanics, through the effects of criminal stigma and social networks, face greater obstacles to employment than whites. Other work attributes poor labor market outcomes among all released prisoners to pre-existing human capital deficits, behavioral problems, and criminal involvement.

The labor market disadvantage of formerly-incarcerated minorities has been traced to intensified criminal stigma and weak network connections to employment. Devah Pager's (2007; Pager et al. 2009) audit studies in Milwaukee and New York City found that callback rates for white job seekers with criminal records were two to three times higher than for black

job seekers who presented equivalent resumés. Pager (2007, 115) argued that a criminal record reinforces racial stereotypes and black job seekers with criminal records faced "an intensification of stigma." The audit studies showed that personal interaction with employers in a job interview could moderate the negative effects of a criminal record, but whites were given greater opportunities for personal interaction than blacks (Pager et al. 2009, 201–202). For the audit research, a criminal record compounds the disadvantages of race in the labor market.

While the audit method examines an anonymized labor market in which employer and job seeker are unknown to each other, qualitative field studies emphasize personal connections. Mercer Sullivan's (1989) field research with criminally-involved white, black, and Hispanic youth in New York City found steadier employment and higher pay among whites by the time they reached their early twenties. Although Sullivan's three study groups all had similar levels of education, and all had trouble at school, the white youth came from families and neighborhoods that were more affluent and in which employment was abundant. Family connections to jobs were decisive for the young white men. African Americans had few social ties to employment. Hispanic youth found work more easily than African Americans, but were largely confined to low-wage manual jobs (see also Black 2010). Sullivan (1989, 103) concluded that "personal networks, not human capital in the form of either education or work experience, accounted for most of the disparities between the neighborhood groups." Sandra Smith (2007) similarly found that network ties also shaped employment opportunities after incarceration. In her analysis, African Americans with prison records were more likely to seek work by themselves, and their family and friends were reluctant to recommend them. In the low-wage

labor market where employers often rely on referrals, poor black job seekers with criminal records were disadvantaged by social networks that were uncooperative and distrusting.

Racial inequalities in employment for released prisoners emerge in contexts in which discrimination and network effects have been observed more broadly in urban low-wage labor markets. Thus William Julius Wilson (1996) describes the reluctance of employers to hire young black men because of concerns about their reliability and honesty. Deirdre Royster (2003) in her study of young black and white job seekers finds that whites were more likely to be connected by teachers and older white men to steady, blue-collar jobs.

Economic life after incarceration is embedded in this larger racially-differentiated structure of opportunities that confronts low-skill workers. After incarceration, whites face less discrimination and have stronger social ties to employment. A few qualitative studies indicate high rates of Hispanic employment compared to blacks but largely in secondary labor market, low-wage, jobs (Sullivan 1989; Black 2010). African Americans face the greatest stigma after incarceration, and the greatest isolation from employment opportunities. The stigma and social network accounts of the economic disadvantage of blacks and Hispanics after incarceration together form a theory of compounded disadvantage in which racial inequalities in incarceration are amplified in the labor market after release (Lyons and Pettit 2011).

Labor market outcomes may be poor among formerly-incarcerated blacks and Hispanics, but most released prisoners—regardless of race or ethnicity—face significant obstacles to steady employment. Our analysis studies differences in employment and earnings among blacks, whites, and Hispan-

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ics, accounting for three main sources of unemployment and low wages: deficits of health and human capital, criminal involvement, and preparation for employment in the transition from prison to community.

Formerly-incarcerated men and women average low levels of schooling that is a significant disadvantage in the labor market. In addition to widely observed educational deficits, the poor health of the prison population also reduces their readiness for work. The incarcerated suffer from high rates of infectious and chronic disease, mental illness, and disorders related to substance use (Wildeman and Muller 2012; Travis et al. 2014, 202–232). Drug use itself can be disabling for employment, particularly for those with histories of addiction (Henkel 2011). Health problems are often co-occurring, creating impediments to employment (Schnittker 2012). To capture the effects of health and human capital, we control for high school dropout, chronic pain and disability, and a self-reported history of drug and alcohol abuse.

The worlds of crime and legal work can compete for the time and energy of released prisoners. The formerly-incarcerated may stay out of the formal labor market where they continue to rely on income from the drug trade or other illegal work. Those who continue to be criminally-involved after incarceration face a higher risk of re-incarceration which, of course, also prevents employment. To account for continuing criminal involvement after incarceration, we control for re-incarceration and a time varying measure of criminal activity.

Finally, research on the transition from prison to community emphasizes the moment of prison release as influential for social integration after incarceration (Visher and Travis 2003; Western et al. 2015). Because prison release is a cumulative social process, a bad start marked by idle-

ness and estrangement from family may hamper job searching and other forms of self-help in the following months. Released prisoners also vary greatly in their employability. Those with a work history, a work release job in prison, stable housing upon release, and a driver's license are more equipped to search for work and are relatively employable at the point of prison release. Our analysis controls for social isolation and readiness for employment immediately after release from incarceration.

Rich covariate data in the Boston Reentry Study allows an analysis that accounts for the unusual frailty of the prison population, its criminal involvement, and the conditions of transition from prison to community. While these explanations help account for the very low earnings of all prisoners, they may also account for racial inequalities after incarceration. If educational attainment, health status, employability, and rates of criminal desistance are lower among blacks and Hispanics, this may explain poor labor market outcomes after prison release. In this case, incarceration would be less a source of cumulative racial disadvantage, than a marker of the extreme social and economic marginalization that was significantly established prior to incarceration.

A HURDLE MODEL FOR EMPLOYMENT AND EARNINGS

Analyzing earnings in a sample with a high rate of unemployment is challenging because there is little consensus about analyzing those with zero earnings. Studies of formerly-incarcerated workers have omitted zero earners (Waldfogel 1994; Nagin and Waldfogel 1998; Lyons and Pettit 2011), imputed a small positive constant for log transformation (Western 2006), or provided little detail about the analysis of zero earners (Kling 2006;

Lyons and Pettit 2011). These ad hoc approaches are unsatisfactory because unemployment rates among released prisoners are high and theoretically important, selection into employment is nonrandom, and analysis of positive earnings over-estimates economic well-being (Western and Pettit 2005).

Our approach views earnings after incarceration as depending on two distinct processes: an employment process (getting a job), and an earnings process (getting paid, having found a job). In each month, t ($t = 1, \ldots, 12$), respondent i ($i = 1, \ldots, N$) is paid monthly earnings, y_{it}, that may be zero if the respondent is not employed. We fit an augmented hurdle model, that includes a logistic regression for the probability of employment, p_{it}, and a log-normal regression on earnings, conditional on being employed. If $\mathbf{x}_{it}$ is a vector of covariates (including an intercept), B_i is a dummy variable for black respondents, and H_i is a dummy variable for Hispanic respondents, then the employment and earnings processes are written:

$$\text{logit}(p_{it}) = \alpha_1 B_i + \alpha_2 H_i + \mathbf{x}'_{it}\alpha_3 + \tau_t + \gamma_i,$$

$$\log y_{it} = \beta_1 B_i + \beta_2 H_i + \mathbf{x}'_{it}\beta_3 + \theta_t + \delta_i + u_{it},$$

where the earnings regression is conditional on employment ($y_{it} > 0$), τ_t and θ_t are time fixed effects, and γ_i and δ_i are respondent-level random effects assumed to have a normal distribution, with zero mean and independent of all covariates. Random effects adjust standard errors for clustering arising from the panel structure of the data. Instead of random effects, we could fit respondent fixed effects but coefficients of key interest, for time-invariant predictors, would be unidentified. Assuming y_{it} is log normal, the errors in the earnings equation, u_{it}, follow a normal distribution. We augment the hurdle model by allowing the random effects γ_i and δ_i to be

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correlated. Correlation of the random effects, ρ, adjusts coefficients for the earnings process for the propensity to employment (see Min and Agresti 2005 for a similar model; the Appendix details the model and estimation). The correlation of the random effects is similar to the correlated errors in the conventional sample selection model (Heckman 1979).

In contrast to truncation or sample selection models, the hurdle model counts unemployment as producing an earnings of zero. The employment and earnings processes are described by separate sets of parameters. Jointly modelling employment and earnings provides a type of sample-selection adjustment where earnings coefficients are attenuated for respondents with a high probability of unemployment. Although covariates for the model are motivated by causal accounts of the determinants of earnings, we treat the model as a data description. Interest centers on the race/ethnicity gaps in earnings and employment—measures of labor market inequality obtained after covariate adjustment.

DATA

The BRS data on monthly employment and earnings is constructed from four interviews conducted in the year after prison release. The BRS sample includes male and female prisoners and is representative of prison release cohorts from Massachusetts returning to Boston (Western et al. 2015). Like the national prison population, the BRS sample has a low level of average schooling, is disproportionately black and Hispanic, and has little history of employment.

Monthly employment and earnings were measured with survey questions that asked respondents about all jobs and earnings since the last inter-

view. Measurement in this way captured all incomes from work including, for example, day labor for cash helping with home improvements or snow clearance for a family member. Employment and earnings also includes all formal employment that ranges from hourly jobs in food service to skilled jobs as unionized workers in the construction industry. The survey interviews were also supplemented with more open-ended conversations with respondents, yielding qualitative data on job search and hiring.

Covariates used in the regression analysis are reported in Table 1. Respondents' health and human capital is measured by indicators for high school dropout, time-invariant measures of chronic pain, and a self-reported history of drug addiction. To measure the transition from prison to community, we include scales for employability and social isolation. Criminal involvement is measured with a scale that records new criminal charges, illegal income, and drug use. We also include a monthly dummy variable indicating whether a respondent was incarcerated in the current month. The regressions also control for age (coded as four discrete categories) and sex.

Our interest centers on the race/ethnicity gaps in earnings and employment. Race and ethnicity is coded as three categories for non-Hispanic blacks, non-Hispanic whites, and Hispanics. Non-Hispanic blacks include mostly African Americans but also a small number of respondents of Cape Verdean and West Indian descent. Hispanics are mostly Puerto Rican but the sample also includes a few Dominicans, Hondurans, and a few respondents of unspecified Hispanic origin. The white ethnicities reported to us by respondents included mostly Irish, Italian, and Portuguese.

Descriptive statistics for the variables used in the regression analysis are reported in Table 2. Whites tend to be somewhat older with slightly higher

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Table 1. Variables used in regression analysis of monthly employment and earnings in the year after prison release.

Variable	Description
Dependent variables	
Employed	Dummy variable for positive monthly earnings
Monthly earnings	Continuous measure of earnings in dollars from all jobs in a given month
Demographics	
Race/ethnicity	Categorical variable for blacks, whites, and Hispanics reported at baseline, coded as dummy variables for blacks and Hispanics
Age	Conded as four discrete categories: under age 30, 30 to 39, 40 to 49, over age 50.
Female	Dummy variable for female respondents
Health and Human Capital	
H.S. dropout	Dummy variable for no high school diploma including GED's
Chronic pain or disability	Dummy variable for back pain, arthritis, or a physical disability reported at baseline
Drug addiction	Dummy variable for a history of addiction or substance abuse reported at baseline
Transition from prison	
Employability at release	Standardized scale summing four indicators of employability at prison release: employment prior to arrest, a work release job in prison, a valid driver's license at release, and stable housing at release (not in a homeless shelter or on the streets)
Isolation in first week	Standardized scale summing time spent without family and in no activity in the first week after release
Criminal involvement	
Crime scale	Time-varying standardized scale summing three indicators of criminal behavior at each survey wave: criminal charge, use of illegal drugs, and illegal income. Charge is coded from arrest records; drugs and illegal income are self-reported.
Re-incarceration	Time-varying dummy variable for re-incarceration in a given month, coded from court records.

Table 2. Means of employment, earnings, and covariates by race, Boston Reentry Study.

| | Race/Ethnicity | | | |
	White	Black	Hispanic	Total
Dependent variables				
Employed	.63	.50	.52	.54
Monthly earnings ($)	1384.39	700.18	755.65	913.20
Monthly positive earnings ($)	2184.74	1394.93	1453.18	1676.61
Demographics				
Age (years)	39.81	35.32	33.52	36.29
Female	.10	.18	.09	.14
Health and Human Capital				
High school dropout	.49	.63	.76	.62
Chronic pain or disability	.48	.34	.14	.34
Drug addiction	.77	.39	.48	.52
Transition from prison				
Employability at release	−.15	.06	.09	.00
Isolation in first week	.19	−.10	−.03	.00
Criminal involvement				
Crime scale	.35	−.13	−.19	.00
Re-incarceration	.09	.04	.10	.07
No. of respondents	36	58	22	116
No. of observations	377	649	250	1276

levels of education compared to blacks and Hispanics. Whites were also more likely to be in poorer health and report higher rates of drug addiction. High levels of substance use and poor health among white prisoners does not appear to be specific to the Boston sample as similar patterns are reported in national data (National Center on Addiction and Substance Abuse 2010; Maruschak et al. 2015). High rates of drug addiction among whites is associated with greater illegal drug use after incarceration, contributing to a relatively high level of criminal involvement. At the time of prison release, whites scored lower on the employability index and were more likely to be socially isolated in the first week after incarceration. Thus whites enjoyed higher rates of employment and earnings after incarceration, but the descriptive statistics indicate they are relatively disadvantaged by their health, criminal involvement, drug use and sociability.

A large number of alternative measures could also be used to account for poor employment outcomes of formerly-incarcerated men and women. Our data analysis experimented with measures of housing, family support, mental illness, chronic disease, histories of childhood trauma, time served in prison, parole supervision, and a variety of other variables. The results we report below on race and ethnicity gaps in employment and earnings are robust to a wide variety of other specifications with alternative covariates.

RESULTS

Estimates from the hurdle model indicate the large employment and earnings disadvantages of blacks and Hispanics that persist even after controlling for addiction, physical disability, and the stress of transition in the first weeks after prison release. We supplement the quantitative results with

qualitative evidence from interviews with the BRS respondents.

Evidence from the Model Estimates

Regression estimates from the hurdle model are reported in Table 3. We first fit a model that includes only the race effects, along with respondent random effects, and time fixed effects for each month of observation. The employment and earnings coefficients show large race and ethnic disparities. The odds of employment for blacks are only a quarter as large as for whites. The odds of Hispanic employment are only a third of that for whites, although this difference is not estimated precisely. The earnings equation also indicates large racial and ethnic inequalities. Blacks take home just two-thirds of the earnings of whites (exp[−.409] = .66). The Hispanic-white earnings gap is somewhat smaller and is not estimated precisely which may reflect the relatively small number of Hispanics and whites in the sample.

Controlling for covariates, the coefficients for blacks and Hispanics increase in magnitude because of the observed disadvantage of white respondents. The black employment coefficient nearly doubles when covariates are controlled, and the odds of white employment are about 14 times higher (exp[2.621] = 13.7) than for observably similar blacks. The odds of employment among whites are six times higher (exp[1.797] = 6.0) than for Hispanics similarly reflecting the relative health and criminal desistance among formerly-incarcerated Hispanics.

The earnings equation also indicates the economic advantage of employed whites, adjusting for covariate characteristics. Similar to the simple model that omits covariates, estimates indicate that employed blacks earn just two-thirds that of employed whites (exp[−.445] = .64). Hispanic respon-

Table 3. Results from correlated hurdle model of monthly employment (logistic regression) and log earnings (linear regression) in a sample of formerly-incarcerated men and women, Boston Reentry Study. (Standard errors in parentheses.)

	Employment	Positive Log Earnings	Employment	Positive Log Earnings
Intercept	.184	6.572	3.241	6.837
	(.677)	(.204)	(1.165)	(.307)
Race or Ethnicity				
Black	−1.365	−.409	−2.621	−.445
	(.782)	(.225)	(.884)	(.244)
Hispanic	−.856	−.337	−1.797	−.374
	(1.021)	(.296)	(1.095)	(.319)
Health and Human Capital				
Chronic pain	–	–	−.457	−.018
			(.830)	(.241)
Drug addiction	–	–	−1.479	.068
			(.840)	(.238)
H.S. dropout	–	–	−1.433	−.462
			(.759)	(.217)
Criminal involvement				
Crime or arrest	–	–	−.033	−.051
			(.166)	(.046)
Re-incarceration	–	–	−6.141	−3.821
			(1.124)	(.281)
Transition from prison				
Employability	–	–	.974	.079
			(.372)	(.107)
Social isolation	–	–	−.255	−.273
			(.390)	(.115)
Cross-correlation (ρ)	.724		.669	
No. of respondents	116		116	
No. of observations	1276		1276	

Note: All models include monthly fixed effects, and random effects for each respondent. Full models also include controls for age and sex.

dents also earn less than whites on average, although in this case—as in the simple model—the white-Hispanic gap is not statistically significant.

Other coefficients indicate low employment rates for high school drop outs and those with histories of drug addiction. Chronic pain is also negatively associated with employment but is not statistically significant. Reincarceration is strongly related to unemployment and low earnings. Finally, employability and social isolation at prison release are also closely related to subsequent earnings and employment. A standard deviation increase in the employability scale is associated with more than doubling the odds of employment. A standard deviation increase in the social isolation scale is associated with a 25 percent reduction in earnings.

Because total earnings depends on employment and the level of positive earnings, regression coefficients cannot be directly interpreted in terms of the marginal effects of covariates on total earnings. To simplify interpretation, we can calculate marginal race and ethnicity gaps in earnings, fixing the covariates at their mean values and averaging over the employment and earnings equations. For given values of the covariates, $\mathbf{x}$, total annual earnings is given by, $\tilde{y} = \hat{p}\hat{y}$, where $\hat{p}$ is the predicted monthly employment rate, and $\hat{y}$ is the predicted level of positive monthly earnings. (We set random effects to zero and average over time fixed effects to calculate rates of employment and earnings.) Estimates of total annual earnings can be used to calculate marginal earnings gaps between blacks and whites, and Hispanics and whites. Writing the earnings gap as a function of the employment rate and the average level of positive earnings yields a simple decomposition. For example, for the earnings gap between blacks (B) and

whites (W):

$$\tilde{y}_W - \tilde{y}_B = \hat{p}_W \hat{y}_W \ - \ \hat{p}_B \hat{y}_B$$

$$= \hat{y}_W (\hat{p}_W - \hat{p}_B) \ + \ \hat{p}_B (\hat{y}_W - \hat{y}_B).$$

We call the first term the employment component, reflecting the contribution of the racial gap in employment, $\hat{p}_W - \hat{p}_B$, to the overall earnings gap. We call the second term the earnings component, reflecting the contribution of the racial gap in positive earnings, $\hat{y}_W - \hat{y}_B$, to the overall earnings gap. (Each term can be annualized by multiplying by 12.) Table 4 reports the decomposition of total annual earnings based on unadjusted estimates from the simple models with no covariates, and regression-adjusted estimates of the total earnings gaps that set all covariates to their mean values.

Without regression adjustment, the white-black gap in annual earnings is estimated to be over $6,400, about 80 percent of the total annual earnings for black respondents. About two-thirds of the race gap in total annual earnings is attributable to the high rate of joblessness among formerly-incarcerated blacks. Only about a third of the total earnings gap is associated with the low level of pay among formerly-incarcerated blacks who found employment. Because formerly-incarcerated whites are relatively disadvantaged by their poor health and drug use, the regression adjusted gap in total earnings is larger than the unadjusted gap. For observably identical blacks and whites, blacks are estimated to earn more than $7,000 less than whites in the first year after prison release. About 80 percent (5647/7045 = .80) of this race gap in earnings is attributable to the large and statistically significant race gap in employment.

The lower panel in Table 4 reports the white-Hispanic gap in total earnings. With relatively few whites and Hispanics in the small BRS sample,

Table 4. Marginal white-black and white-Hispanic gaps in total earnings, decomposed into employment and earnings components. (Standard errors in parentheses.)

	Unadjusted	Regression Adjusted
White-Black Earnings Gap		
Employment component	4225	5647
	(2572)	(2089)
Earnings component	2230	1397
	(1375)	(889)
Total difference	6455	7045
	(3417)	(2609)
White-Hispanic Earnings Gap		
Employment component	2635	3589
	(3084)	(2418)
Earnings component	2085	1655
	(2065)	(1652)
Total difference	4720	5245
	(4233)	(3281)

Note: Marginal effects are calculated from predicted employment, positive monthly earnings, and total annual earnings, setting covariates at mean values and random effects to zero.

the earnings differences are not statistically significant. Still the pattern of results is similar to those we obtained for white-black earnings inequality. Whites earn on average $4,720 more than Hispanics, about 50 percent of annual Hispanic earnings in the year after prison release. Like the white-black gap in earnings, over half the white-Hispanic gap in earnings is attributable to differences in employment. The regression-adjusted gap in earnings is slightly larger than the unadjusted gap. About 70 percent of the regression-adjusted gap between whites and Hispanics is related to the relatively low rate of employment among Hispanics after incarceration (3589/5245 = .68).

In sum, averaging over the employment and earnings equations shows that whites enjoy a large earnings advantage over blacks and Hispanics in the year after prison release. The earnings advantage is undiminished by accounting for differences in health, human capital, criminal involvement, and the transition from prison to community. The large earnings gap results more from the high rate of unemployment among formerly-incarcerated minorities, than the relatively low wages among those that find employment. Unemployment, not pay, is the main driver of racial inequality in the labor market after incarceration.

Qualitative Evidence on Finding Work

Quantitative estimates indicated large employment and earnings advantages of whites over blacks and Hispanics. Qualitative interviews help explain racial inequality in employment as the product of racial differences in social ties to employment and criminal stigma. Whites in the reentry study mostly found work through recommendations and referrals from their social networks (Table 5). Social contacts supplied referrals just over three-

quarters of the time for white respondents. Whites were more likely to be connected to steady jobs in high-paying industries, mainly construction. Black and Hispanic respondents were less likely to have family, friends, and other contacts who could connect them to stable, high-paying jobs. His-panic respondents found work through family and friends two-thirds of the time, but were mostly referred to low-wage jobs. Black respondents found jobs through networks around 40 percent of the time. More than whites or Hispanics, blacks relied on a variety of formal strategies, including online searches, applying in person, and applying to temporary employment agen-cies. Jobs for black respondents typically paid minimum wage and tended to last for just a few months.

With weak employment networks and reliant on formal methods for finding work, black respondents may have been more vulnerable to crimi-nal record discrimination. Among the jobless, blacks attributed their unem-ployment to their criminal records nearly a quarter of the time (Table 5). In contrast, whites used formal job search methods infrequently and only 8 percent reported their criminal record as an impediment to employment. Hispanics do not follow the same pattern of formal job search associated with self-reported criminal record discrimination. This may in part be as-sociated with the unusually high rate of long-term joblessness in the small Hispanic sample.

Qualitative interviews indicate the utility of network connections for whites. Patrick, aged 31, had served a year in prison. As a teenager in one of Boston's historically poor, white neighborhoods, he began to use heroin, dropped out of high school, and attempted suicide. Patrick was in and out of trouble throughout adolescence, but he managed to join a construction union in his early twenties with the help of his father who

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Table 5. Percentage distribution of methods of job finding among employed respondents, and reasons for not working for unemployed respondents, by race and ethnicity, Boston Reentry Study.

	Race/Ethnicity		
	White	Black	Hispanic
Method of Finding Current Job			
All network referrals	75.5%	43.4%	66.7%
Family	9.4	14.5	24.2
Friends	41.5	25.3	42.4
Other network	24.5	3.6	0.0
Formal job search	18.9	42.1	3.0
Other methods	5.7	14.5	30.3
Total	100.0	100.0	100.0
Respondent-waves (N)	53	83	33
Reason for Not Working			
Criminal record	8.2	23.9	32.3
Other reasons	91.8	76.1	67.7
Total	100.0	100.0	100.0
Respondent-waves (N)	49	88	31

Note: Data are taken from the two month, six month, and 12 month waves of the BRS. Other network referrals include other sources, such as union officials or former employers. Other methods of job finding include continuing employment in work release jobs.

was a union official. He worked steadily as a welder until losing his job at age 30 while using heroin regularly. In the first two months after prison release, Patrick was out of work and struggled to stay sober. He completed a course to update his trade certification and over the Thanksgiving holiday, he regained contact with his father. Soon after, he was offered a job on a construction site. By the 6-month interview, he was earning about $1,300 each week and paying rent for an apartment that he shared with his father and brothers. Finding work was critical for his stability. "I can't really do anything else other than construction and crime," he told us. Patrick's history in the union and family connections smoothed the transition back to work after prison, and he remained employed a year later.

Hispanic respondents who found work were also likely to rely on social networks, but the jobs they found tended to pay less. At 12 months out of prison, employed white respondents who had found their jobs through friends and family earned an average of $3,000 each month, twice as much as Hispanic respondents who had found work in the same way.

After dropping out of school at age 16, Johnny, a Hispanic man in his early thirties, estimated that he had spent half of his adult years working and the other half incarcerated. Throughout the year after his 21-month prison term, he was consistently employed often working several casual jobs at a time. Upon release, he contacted an old friend who worked at a furniture warehouse. Johnny spent a few days a week at the warehouse doing furniture removal, paid in cash for each job. He also spent several days a week working at a car wash, a job he found through his brother. When the furniture warehouse closed after four months, Johnny's cousin helped connect him to a work crew where he was paid daily to do landscaping and maintenance work. Like Patrick, Johnny relied on his social networks to

find work. However, his friends connected him to minimum-wage jobs or day labor. By the 12-month interview, Johnny was earning about $1,500 per month, though his monthly earnings had fluctuated between $450 and $4,000 over the course of the year.

Black respondents were less likely than white and Hispanic respondents to find jobs through family and friends in the year after their release, and instead relied on more formal means of job search. Among black respondents who were employed at the 12-month interview, over half had found work through an online database, newspaper advertisement, temporary employment agency or employment program. Most worked in temporary jobs or at minimum wage ($8.50 an hour in Massachusetts) in the service sector. Employment was unstable and job duration for blacks was about two months less on average compared to whites and Hispanics.

At the age of 28, Dante was released after serving a year and a half in prison. Since dropping out of high school at age 16, he had worked for half a year and spent a total of six years incarcerated. He earned his GED while in prison. After release, Dante moved in with his sister and her friend who lived in a working-class suburb just outside of Boston. He searched for work online and at temporary employment agencies. In his third month out, Dante was hired for two jobs, as a prep cook in a fast-food restaurant and as a bus boy at a local sports arena. He held both jobs for three months, sometimes working up to 50 hours a week. He was ultimately forced to quit the fast-food restaurant because of his schedule at the arena: "They wanted me to choose jobs." Dante's arena job paid slightly more ($10.35 an hour), but his hours varied from week to week depending on games and events. When working, his monthly income averaged just over $500 and never exceeded $1,000 a month. The seasonal nature of Dante's work

also put him at risk of unemployment. Though he held the bus boy job at his 12-month interview, Dante had not worked for two consecutive months near the end of the year because business at the arena was slow.

Formal methods of job search, used mostly by black respondents, also exposed job seekers to criminal record discrimination. A handful of respondents volunteered information about their criminal record while searching for work, but most reported that employers learned about their record through formal background checks or by asking at an interview. We cannot know from the survey data whether unemployment resulted from employers' concerns about a criminal record but circumstances were sometimes suggestive. Some respondents reported that they had started a job and were fired weeks later when employers conducted a formal background check.

Since dropping out of high school in the 12th grade, Keon, a 30-year-old black man, had taken GED classes, worked steadily for two and a half years, and served five years in state prison. Throughout the year after release, Keon spoke to family and friends about employment and applied to jobs in person and online. At one month out of prison, he interviewed for a position at a department store and was told he had the job. Though Keon had indicated that he had a criminal record on the online application, his interviewer did not ask him about it. Three weeks later, however, he learned he had lost the job after his employer conducted a formal background check. Though Keon was able to find construction work for three months through a friend, earning about $1,000 a month, the work was temporary, and at the one-year interview, he had been unemployed for seven months. He had a newborn daughter, sold marijuana to contribute income to the household, and hoped to find a stable job on the books.

Steady employment helps promote criminal desistance and social integration after incarceration (Sampson and Laub 1993; Uggen 2000; Sullivan 1989; Western et al. 2015). Panel data from sample of men and women released from prison to the Boston area shows high rates of unemployment and low earnings in the year after incarceration. Unemployment rates varied between 40 and 60 percent over the year and earnings averaged around $1,000 a month, approximately equal to the federal poverty line for an individual. Unemployment and low wages were associated not just with conventional measures of human capital, such as prior work experience and schooling. Characteristics of the ex-prisoner population, including physical disability and histories of drug addiction, were also associated with poor labor market outcomes.

In addition to poverty-level wages among the formerly-incarcerated, we also find large racial and ethnic inequalities in employment and earnings. Whites just out of prison were relatively disadvantaged in several ways. They had higher rates of physical disability and drug addiction, were less ready for employment and more socially isolated immediately after prison release. Despite these disadvantages, their employment rates were higher and their earnings were nearly double those of formerly-incarcerated blacks and Hispanics (see also Abram et al. 2016 on delinquent youth). Qualitative evidence showed that higher levels of employment and earnings among whites were associated with social network connections to relatively well-paying jobs. Because they were more likely to be exposed to the scrutiny of employers met through a formal job search, the stigma of a criminal record also appears to be more disqualifying for blacks in particular. These empir-

ical results help synthesize a variety of findings in earlier studies, showing the relative disadvantage of black job seekers with criminal records (Pager 2003; Pager et al. 2009), and the network disadvantage of formerly incarcerated blacks and Hispanics (Sullivan 1989; Smith 2007; Black 2010).

Although the reentry study is not directly informative about the causal effect of incarceration, the analysis has implications for research on incarceration effects for labor market outcomes. First, researchers have focused on the endogeneity of incarceration to pre-existing disadvantages that also drive poor outcomes in the labor market (see Western et al. 2001; (Holzer 2009)). The reentry study data allow detailed measurement of these confounding sources of disadvantage. While we found that criminal involvement is associated with unemployment and low wages, human frailty—measured by a history of drug addiction and chronic pain—was also important. Prison release also has a dynamic quality, and social isolation and lack of job readiness at the moment of release are associated with poor outcomes months later. Second, much of the employment we observed was highly informal and sometimes fleeting, unlikely to be covered by administrative records or conventional survey interviews. Moreover, relatively disadvantaged black workers were more reliant on the formal labor market where employment is more easily observed. We cannot know how this might bias estimates of the causal effect of incarceration without information on informal employment in a comparison group, but the reentry study data illustrate the significant challenges of economic measurement in a highly marginal population. Third, separately modeling earnings and employment treats unemployment as a true zero in the estimation of total earnings. Such an approach provides a flexible model that allows some covariates—like job readiness and re-incarceration—to be more closely as-

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sociated with employment than earnings.

Poverty-level earnings commonly follows incarceration but a few respondents found steady work in well-paying jobs. White unionized workers in skilled trades earned well above poverty wages despite long histories of incarceration, drug addiction, and criminal involvement. Some respondents had strong family connections to stable jobs that they held continuously through their first year after incarceration. These examples suggest how a supportive employment context can promote economic well-being even for workers who are deeply disadvantaged. Contrast the low incomes of minority respondents. Even when relatively advantaged by their personal characteristics, blacks and Hispanics had weaker network ties to well-paying jobs and faced intensified criminal stigma. They experienced more unemployment and earned less as a result. The social context of prison release thus emerges as central to economic well-being after incarceration. While the individual characteristics of men and women coming out of prison are associated with their fortunes after incarceration, a supportive social context after incarceration can moderate disabling disadvantages.

Researchers have widely explored the claim that the current era of mass incarceration has deepened social and economic inequality in America (Western 2006; Wakefield and Uggen 2010; Wakefield and Wildeman 2013). Our small longitudinal study of Boston prisoners cannot evaluate such a large claim of historical change. Still, we are able to observe in detail a type of compounded disadvantage produced by the close connection between incarceration and poverty. The analysis provides clear evidence of widespread unemployment and poverty-level wages in a cohort of released prisoners.

Labor market outcomes are worse for blacks and Hispanics than whites,

despite the relatively poor health and high rates of drug addiction among whites. The results suggest that high rates of incarceration among blacks and Hispanics combine with the social conditions of poverty—characterized by social detachment from skilled employment and the stigma of criminality— to produce high rates of joblessness and low-wage employment. More generally, the significance of mass incarceration for racial inequality extends beyond racial disparities in imprisonment rates. The results reported here show how the experience of incarceration is embedded in racially-differentiated experiences of poverty. With the highest incarceration rates and returning to the most adverse economic environments, African Americans have the lowest earnings and bear the greatest weight of the compounded disadvantages of mass incarceration.

APPENDIX: THE MODEL AND ESTIMATION

For respondent i at time t, monthly earnings, y_{it}, and the probability of employment, p_{it}, is written as a function of covariates, $\mathbf{x}$, and dummy variables, B_i and H_i, indicating blacks and Hispanics,

$$\text{logit}(p_{it}) = \alpha_1 B_i + \alpha_2 H_i + \mathbf{x}'_{it}\alpha_3 + \tau_t + \gamma_i,$$

$$\log y_{it} = \beta_1 B_i + \beta_2 H_i + \mathbf{x}'_{it}\beta_3 + \theta_t + \delta_i + u_{it},$$

where the random effects have a normal distribution,

$$\begin{bmatrix} \gamma_i \\ \delta_i \end{bmatrix} \sim N\left(\begin{bmatrix} 0 \\ 0 \end{bmatrix}, \begin{bmatrix} \sigma_\gamma^2 & \sigma_{\gamma\delta} \\ \sigma_{\gamma\delta} & \sigma_\delta^2 \end{bmatrix} \right),$$

and the cross-equation correlation is given by the scaled covariance, $\rho = \sigma_{\gamma\delta}/(\sigma_\gamma^2\sigma_\delta^2)^{1/2}$. Conditional on the random effects and collecting all the model parameters into the vector, $\boldsymbol{\xi}$, the contribution of one observation to the log likelihood for this model is written,

$$f(e_{it}, y_{it}; \boldsymbol{\xi}) = (1 - e_{it})\log(1 - p_{it}) + e_{it}[\log(p_{it}) + \varphi(y_{it})]$$

where e_{it} is a binary indicator for employment used in the employment equation, φ is the log likelihood for a log normal regression. The log likelihood thus consists of two parts: one for the probability of employment, and one for the density of earnings, given employment. With correlated random effects, this model can be estimated using Markov Chain Monte Carlo (MCMC) methods. Estimates were obtained from an MCMC run for three parallel chains with a burn-in of 20,000 iterations, and another 100,000 for estimation.

To obtain marginal effects at average covariate values, $\bar{\mathbf{x}}$, on unconditional earnings, we set random effects to zero and calculated a predicted

probability of employment, $\hat{p}_r$ $(r = W, B, H)$ for each race group. We made similar calculations for mean positive earnings, $\hat{y}_r$, though under the log normal distribution an adjustment is needed for the dispersion of the distribution, $E(y_r|\mathbf{x}) = \hat{y}_r = \exp(\mu_r + \sigma^2/2)$, where μ_r is the linear prediction from the earnings regression evaluated at the covariate means, and σ^2 is the dispersion parameter of the log normal likelihood. Total annual earnings is calculated from the predicted probability of monthly employment and the predicted mean level of positive monthly earnings, given by $\tilde{y}_r = \hat{p}_r \hat{y}_r \times 12$.

References

Abram, Karen M., Nicole M. Azores-Gococo, Kristin M. Emanuel, David A. Aaby, Leah J. Welty, Jennifer A. Hershfield, Melinda S. Rosenbaum, and Linda A. Teplin. 2016. "Sex and Racial/Ethnic Differences in Positive Outcomes in Delinquent Youth After Detention: A 12-Year Longitudinal Study." *JAMA Pediatrics* .

Black, Timothy. 2010. *When a Heart Turns Rock Solid: The Lives of Three Puerto Rican Brothers On and Off the Streets*. New York, NY: Vintage.

Bureau of Labor Statistics. 2014. *Labor Force Characteristics by Race and Ethnicity, 2013*. Washington, DC: U.S. Bureau of Labor Statistics.

Clear, Todd. 2007. *Imprisoning Communities: How Mass Incarceration Makes Disadvantaged Neighborhoods Worse*. New York: Oxford University Press.

Freeman, Richard B. 1992. "Crime and the Employment of Disadvantaged Youth." In *Urban Labor Markets and Job Opportunity*, edited by George Peterson and Wayne Vroman, pp. 201–237. Washington DC: Urban Institute Press.

Geller, Amanda, Irwin Garfinkel, and Bruce Western. 2011. "Paternal Incarceration and Support for Children in Fragile Families." *Demography* 48:25–47.

Grogger, Jeffrey. 1995. "The Effect of Arrests on the Employment and Earnings of Young Men." *Quarterly Journal of Economics* 110:51–71.

Heckman, James J. 1979. "Sample Selection Bias as a Specification Error." *Econometrica* 47:153–161.

Henkel, Dieter. 2011. "Unemployment and Substance Use: A Review of the Literature (1990-2010)." *Current Drug Abuse Reviews* 4:4–27.

Holzer, Harry J. 2009. "Collateral Costs: Effect of Incarceration on Employment and Earnings Among Young Workers." In *Do Prisons Make Us Safer?*, edited by Steven Raphael and Michael A Stoll, pp. 239–266. New York: Russell Sage Foundation.

Kling, Jeffrey R. 2006. "Incarceration Length, Employment, and Earnings." *American Economic Review* 96:863–876.

Kornfeld, Robert and Howard S Bloom. 1999. "Measuring Program Impacts on Earnings and Employment: Do Unemployment Insurance Wage Reports from Employers Agree with Surveys of Individuals?" *Journal of Labor Economics* 17:168–197.

Lyons, Christopher J. and Becky Pettit. 2011. "Compounded Disadvantage: Race, Incarceration, and Wage Growth." *Social Problems* 58:257–280.

Maruschak, Laura M., Marcus Berzofsky, and Jennifer Unangst. 2015. *Medical Problems of State and Federal Prisoners and Jail Inmates, 2011–12*. Washington DC: Bureau of Justice Statistics.

Min, Yongyi and Alan Agresti. 2005. "Random Effect Models for Repeated Measures of Zero-Inflated Count Data." *Statistical Modelling* 5:1–19.

Mueller-Smith, Michael. 2014. "The Criminal and Labor Market Impacts of Incarceration." Department of Economics Working Paper, Columbia University.

Nagin, Daniel and Joel Waldfogel. 1998. "The Effect of Conviction on Income Through the Life Cycle." *International Review of Law and Economics* 18:25–40.

National Center on Addiction and Substance Abuse. 2010. *Behind Bars II: Substance Abuse and America's Prison Population*. New York: Columbia University.

Pager, Devah. 2003. "The Mark of a Criminal Record." *American Journal of Sociology* 108:937–975.

Pager, Devah. 2007. *Marked: Race, Crime, and Finding Work in an Era of Mass Incarceration*. Chicago, IL: University of Chicago Press.

Pager, Devah, Bruce Western, and Naomi Sugie. 2009. "Sequencing Disadvantage: Barriers to Employment Facing Young Black and White Men with Criminal Records." *Annals of the American Academy of Political and Social Science* 623:195–213.

Pettit, Becky and Christopher Lyons. 2007. "Status and the Stigma of Incarceration: The Labor Market Effects of Incarceration by Race,

Class, and Criminal Involvement." In *Barriers to Re-entry: The Impact of Incarceration on Labor Market Outcomes*, edited by David Weiman, Shawn Bushway, and and Michael Stoll, pp. 202–226. New York: Russell Sage Foundation.

Royster, Deirdre. 2003. *Race and the Invisible Hand: How White Networks Exclude Black Men from Blue-Collar Jobs*. Berkeley, CA: University of California Press.

Sampson, Robert J and John H Laub. 1993. *Crime in the Making: Pathways and Turning Points Through Life*. Cambridge, MA: Harvard University Press.

Sampson, Robert J and Charles Loeffler. 2010. "Punishment's Place: The Local Concentration of Mass Incarceration." *Daedalus* pp. 20–31.

Schnittker, Jason, Michael Massoglia, and Christopher Uggen. 2012. "Out and Down: Incarceration and Psychiatric Disorders." *Journal of Health and Social Behavior* 53:448–464.

Simes, Jessica Tayloe. 2016. *Essays on Place and Punishment in America*. Ph.D. thesis, Harvard University, Cambridge, MA.

Smith, Sandra Susan. 2007. *Lone Pursuit: Distrust and Defensive Individualism Among the Black Poor*. New York: Russell Sage Foundation.

Sullivan, Mercer L. 1989. "*Getting Paid*"*: Youth Crime and Work in the Inner City*. Cornell University Press.

Tonry, Michael and Matthew Melewski. 2008. "The Malign Effects of Drug and Crime Control Policies on Black Americans." *Crime and Justice* 37:1–44.

Travis, Jeremy, Bruce Western, and Stephens Redburn (eds.). 2014. *The Growth of Incarceration in the United States: Exploring Causes and Consequences*. Washington, DC: National Academy Press.

Uggen, Christopher. 2000. "Work as a Turning Point in the Life Course of Criminals: A Duration Model of Age, Employment, and Recidivism." *American Sociological Review* 65:529–546.

Visher, Christy A and Jeremy Travis. 2003. "Transitions from Prison to Community: Understanding Individual Pathways." *Annual Review of Sociology* 29:89–113.

Wakefield, Sara and Christopher Uggen. 2010. "Incarceration and Stratification." *Annual Review of Sociology* 36:387–406.

Wakefield, Sara and Christopher Wildeman. 2013. *Children of the Prison Boom: Mass Incarceration and the Future of the American Inequality*. New York, NY: Oxford Univerity Press.

Waldfogel, Joel. 1994. "The Effect of Criminal Conviction on Income and the 'Trust Reposed in Workmen'." *Journal of Human Resources* 29:62–81.

Western, Bruce. 2002. "The Impact of Incarceration on Wage Mobility and Inequality." *American Sociological Review* 67:526–546.

Western, Bruce. 2006. *Punishment and Inequality in America*. New York: Russell Sage Foundation.

Western, Bruce, Anthony Braga, Jaclyn Davis, and Catherine Sirois. 2015. "Stress and Hardship After Prison." *American Journal of Sociology* 120:1512–1547.

Western, Bruce, Jeffrey R. Kling, and David F. Weiman. 2001. "The Labor Market Consequences of Incarceration." *Crime and Delinquency* 47:410–427.

Western, Bruce and Beck Pettit. 2005. "Black-White Wage Inequality, Employment Rates, and Incarceration." *American Journal of Sociology* 111:553–578.

Wildeman, Christopher and Christopher Muller. 2012. "Mass Imprisonment and Inequality in Health and Family Life." *Annual Review of Law and Social Science* 8:11–30.

Wilson, William Julius. 1996. *When Work Disappears: The World of the New Urban Poor*. New York: Knopf.