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Justice-involved Individuals in the Labor Market since the Great Recession

Keith Finlay
U.S. Census Bureau

Michael Mueller-Smith
University of Michigan

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Associate Directorate for Economic Programs
U.S. Census Bureau
Washington, DC 20233

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Justice-involved Individuals in the Labor Market since the Great Recession

Keith Finlay, U.S. Census Bureau, keith.ferguson.finlay@census.gov
Michael Mueller-Smith, University of Michigan, mgms@umich.edu
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Abstract
We examine how individuals convicted of a felony or released from prison have fared in the labor market since the Great Recession. Using data from thirteen states in the Criminal Justice Administrative Records System (CJARS) linked with IRS W-2 information returns, we measure the employment and earnings of cohorts with focal criminal justice events before, during, and after the recession. These justice-involved cohorts experienced significant declines in employment and earnings during and immediately after the recession. Outcomes improved moderately during the long recovery but are still far below those of a reference group of people without high school degrees who were not involved in the justice system. We also correlate the employment outcomes of the justice involved to industry-specific local economic performance, finding that expansions in the construction and other services sectors are positively correlated with growing employment and especially earnings.

Keywords: criminal justice, employment, earnings, Great Recession
JEL classification codes: J24, K14, K42

1 Introduction

The Great Recession (December 2007–June 2009) caused a historic slowdown in the U.S. labor market. It has since been followed by a historically long economic expansion (July 2009–January 2020). And while the unemployment rate has mostly recovered from its peak, the employment-to-population ratio has improved much less (Card and Mas 2016). This finding suggests that a significant proportion of the working-age population has withdrawn from the labor force. In this article, we examine the labor market outcomes of a particularly marginalized population—individuals who have been convicted of a felony or have served time in prison. Employment is a critical element of reintegration and criminal desistance for these individuals, who we collectively refer to as *justice involved* (Uggen 2000; Uggen and Wakefield 2008). The potential for recidivism magnifies the social costs of nonemployment and labor market withdrawal.

Using newly assembled criminal justice administrative data that are linked to individual IRS W-2 information returns, we construct a set of cohorts with justice involvement around the time of the Great Recession and follow their annual employment and earnings through the recovery. While these groups did experience some improvement in economic outcomes during the recovery, their average outcomes remain far below even those of a reference cohort of adults with less than a high school degree who were not in the justice-involved cohorts. For some older cohorts of individuals released from prison, outcomes in 2018 are worse than outcomes before the Great Recession. There also appears to be a distinct plateauing of the employment rates for all groups in the last few years of our study period, despite a continuing economic expansion. We further examine the local labor markets in which these justice-involved cohorts participate and find that these groups have greater improvement in earnings when the construction and other services sectors are growing in their local labor markets.

2 Criminal justice and earnings administrative data

To link the justice-involved population with socioeconomic data and outcomes, we use data from the Criminal Justice Administrative Records System (CJARS) project (Finlay and Mueller-Smith 2021). CJARS is a nationally integrated repository of data following individuals through the criminal justice system. The 2020Q4 vintage of CJARS has statewide coverage of at least the state court system or the state department of corrections from 2006 to 2011 in thirteen states that represent more than 40 percent of the U.S. population: Arizona, Florida, Maryland, Michigan, Nebraska, New Jersey, North Carolina, North Dakota, Oregon, Pennsylvania, Texas, Washington, and Wisconsin. Using the Protected Identification Key (PIK) available in the Federal Statistical Research Data Centers, we integrate CJARS at the person level with four noncrime datasets: (1) the Census Numident file to identify birthdate, place of birth, gender, and date of death; (2) the Census Bureau "best race" survey production file to determine race and ethnicity; (3) IRS W-2 information returns to measure employment and earnings over time; and (4) IRS 1099-MISC information returns to quantify contractor-type employment. We restrict our analysis to individuals born in the thirteen CJARS states.

Throughout the article, we examine two focal criminal justice caseload populations from the CJARS data: individuals who were convicted of a felony and individuals who were released from state

prison. Of the thirteen states, felony conviction is available from Arizona, Maryland, Michigan, New Jersey, North Carolina, North Dakota, Oregon, Texas, and Wisconsin; while prison release is available from Arizona, Florida, Michigan, Nebraska, North Carolina, Pennsylvania, Texas, Washington, and Wisconsin. Since we do not have jail data, prisoners in our data have generally all been convicted of felony offenses, although individuals on conditional release can be reincarcerated after committing misdemeanors. We chose these non-mutually exclusive populations both because they represent serious contact with the criminal justice system and also because they have the highest degree of data coverage in the CJARS project. There are several implications of these cohort definitions. First, the felony conviction cohorts will contain a greater mix of low- and high-severity cases compared to the prison cohorts, and many (but not all) will be incarcerated in prison immediately following their conviction. Second, the prison release cohorts will be older on average than the felony conviction cohorts and will be by definition unconstrained by incapacitation initially (at least until parole is revoked or a new offense is committed).

Our analysis focuses on annual employment rates and average earnings by cohort from 2006 to 2018, measured from the income data on annually filed IRS W-2 forms. Employment in a year is defined as having at least one W-2 return in that year, and earnings are defined as the sum of the income on all W-2 filings for a person in a year, inflated to 2019 dollars using the Consumer Price Index for All Urban Consumers series.[1] One advantage of using W-2 returns over IRS 1040 individual tax returns is that W-2 filing is not affected by the selective nonfiling associated with 1040 returns, which is correlated with income and particularly salient for our population of interest. Labor market measures derived from W-2 forms exclude, however, any income generated that does not involve a formal employer (i.e., informal work, contracting, and self-employment). Likewise, we are unable to measure duration of employment, and so annual employment could reflect partial employment during a given calendar year.

To provide context for the employment and earnings trends of the justice involved, we estimate outcomes for a comparable cohort of American Community Survey (ACS) respondents. We select all survey respondents from the 2005 to 2016 ACS who were born between 1972 and 1980 in the thirteen CJARS states, completed less than a high school degree, and have no felony convictions or prison releases from 2006 to 2010 in the CJARS data. For this set, we estimate employment and earnings in the same way from the IRS W-2 filings, using the ACS person weights to calculate population counts and means.

3 Characteristics of the justice involved before, during, and after the Great Recession

Research indicates that economic opportunity has a causal impact on criminal activity (e.g., Raphael and Winter-Ebmer (2001), Uggen and Wakefield (2008), and Yang (2017)). Such behavioral responses to the Great Recession may introduce bias into our cohort-specific analysis presented in the next section. As such, we first document the demographic and criminal justice characteristics of the justice-involved population before, during, and after the Great Recession to gauge the extent

[1]Federal law requires that employers file W-2 forms when an employee has earned more than $600 in wages in a year. We censor the right tail of earnings at $200,000.

of this potential bias.

We use the NBER Business Cycle Dating Committee (2020) dates of December 2007 through June 2009 for the Great Recession period. We use similarly long 19-month periods for before and after the Great Recession (May 2006–November 2007 and July 2009–January 2011). Tables 1 and 2 show descriptive statistics for cohorts with focal criminal justice events in these three periods (felony conviction in Table 1 and prison release in Table 2). Individuals may have multiple criminal justice events, so these cohorts are not mutually exclusive.

[Table 1 about here.]

[Table 2 about here.]

The number of individuals in each cohort and the offense composition across cohorts is relatively stable. There was a moderate jump in the number of felony convictions during the Great Recession and then a return to the previous level. Prison releases increased slightly over time, a pattern in line with declining U.S. prison populations since 2008 (Kaeble and Glaze 2016). The share of violent and property convictions increased slightly across the cohorts, while drug offense convictions decreased and convictions for driving under the influence (DUI) remained stable.

It is common to have preexisting and subsequent involvement in the criminal justice system across cohort periods. There is a roughly 16 to 20 percent sample overlap across the consecutive felony conviction cohorts, while the corresponding estimate for those released from prison is around 11 to 14 percent.

Each successive cohort of those convicted of felonies or released from prison is, on average, born one year later, reflecting the widely acknowledged relationship between age and criminal activity. Individuals released from prison are roughly two years older compared to the felony conviction cohorts, which reflects the fact that prison release occurs later in the sequence of criminal justice processing. Overall, though, the average age at event per cohort is around 30 years. Looking forward about 10 years, roughly 6 percent of those convicted of felonies and 7 percent of those released from prison have died, which may be related to the opioid epidemic (see Currie and Schwandt (2021) for a discussion).

The racial and ethnic breakdowns are stable across cohorts for both focal events. Non-Hispanic whites are a somewhat lower proportion of felony convictions during the Great Recession relative to before or after, with non-Hispanic Blacks and Hispanics being a somewhat higher proportion of cases during the Great Recession. Males and non-Hispanic Blacks are overrepresented in the prison release cohorts relative to the felony conviction cohorts. Men are a greater proportion of prison releases in the period after the Great Recession relative to before or during.

Overall, the conviction and prison cohorts appear relatively stable, with relatively less selection occurring among released prisoners where endogenous crime responses to changing economic opportunity are one step removed due to the duration of one's prison term. There are clear age differences across cohorts, however, which should suggest level differences when looking at employment outcomes across cohorts in a given calendar year.

To place this article in the context of this volume's emphasis on the "working class," let us describe the focal populations using data not available in administrative records. In the 2002 Survey of Jail

Inmates, 71 percent of sampled jail inmates reported employment before arrest, with 63 percent of income coming from employer-type jobs and only 12 percent coming from illegal sources (James 2004). Using restricted-access ACS Group Quarters data, Ewert and Wildhagen (2011) show that, of prisoners in the 2009 ACS, 40 percent had completed less than a high school degree, 22 percent had completed a GED, 16 percent had completed a high school degree, and 22 percent had completed some college. As we see, many of these individuals participate in the labor market, but it is clear that the group as a whole faces disadvantages that may be related to, for example, less accumulation of human capital.

4 Long-term labor market outcomes of individuals involved with the criminal justice system around the time of the Great Recession

By linking CJARS data with individual earnings measures from IRS W-2 filings, we can track employment and earnings after focal criminal justice events. Figures 1 and 2 plot the annual employment and earnings for a set of cohorts split by the year of felony conviction or prison release. Figure 1 shows the trends for the felony conviction cohort; Figure 2 shows the trends for those released from prison. For each cohort, we start the plot in the year of the focal event. In each figure, we plot in solid black lines the outcomes of the ACS reference cohort, comprising similarly aged individuals who have completed less than a high school degree and are not in the justice-involved cohorts.

[Figure 1 about here.]

[Figure 2 about here.]

The most prominent feature of Figures 1 and 2 is that the labor market outcomes of the justice-involved cohorts are far below those of the reference cohort of adult individuals who have completed less than a high school degree. For the felony conviction cohorts, the gap is approximately 10 percentage points in employment probability and $7,000 in annual income. For prison release cohorts, the gap is even larger by about 8 percentage points in employment probability and $3,000 in annual income. For the pre-recession cohorts in both focal groups, employment in 2018 is lower than it was before the Great Recession. For the early prison release cohorts, the long-term employment deterioration is substantial.

Employment levels are higher for felony conviction cohorts than for prison release cohorts even though the prison releasees are older. The slopes of the employment recoveries are also steeper for the felony conviction cohorts. On average, individuals released from prison will have spent more time out of the labor market than individuals convicted of felonies because of incapacitation. The prison release cohorts have lower incomes as well. They are, on average, negatively selected relative to the felony conviction cohorts, so their wages are likely lower conditional on employment.

For both focal groups, there is a steady increase in annual income during the recovery. The income trends for the felony conviction cohorts are roughly parallel with those of the ACS reference cohort. For the prison release cohorts, income is growing at a slower pace, so the gap relative to the

reference group is growing. For both felony conviction and prison release cohorts, there is a steady difference between annual earnings based on the year of the focal event. These cohorts differ in age, and these gaps are consistent with average differences in accumulated job experience.

Upon initial release from prison, there is a temporary bump in employment and earnings. This finding likely relates to conditional release requirements imposed on individuals in most parole programs, for which the consequences of noncompliance are significant. The cohort released in 2008 does not experience the uptick in employment—perhaps a consequence of the recession eliminating transitional employment opportunities for this population. Employment in 2018 is highest for individuals released after the recession, even though these individuals are likely to have less on-the-job experience. The 2008 cohort ends with a similar employment rate to those released before the recession who did have the postrelease job bump, suggesting that recession scarring outweighs the importance of transitional jobs in determining later outcomes for released cohorts. This scenario would be consistent with growing evidence of the long-term inefficacy of many postrelease work programs (Redcross et al. 2011; Cook et al. 2015).

The justice involved have low levels of educational attainment and work experience, as well as higher levels of health and mental health problems, including drug use, which make them difficult to employ (Petersilia 2003; Visher, Debus, and Yahner 2008). In our W-2 data for both felony conviction and prison release cohorts, convergence across cohorts appears to hit an upper bound on the probability of employment a few years after the focal events. Whereas in the ACS reference cohort there are slow but steady improvements in employment and earnings, justice-involved cohorts experience a distinct flattening of employment rates between 2015 and 2018.

We consider three factors possibly related to this lagging employment in the last few years of the study period.[2] First, has there been any lag in census Bureau receipt of W-2 forms from the IRS that may mechanically reduce the W-2 employment measure? On the contrary, we find steadily increasing annual counts of W-2 forms over the study period through 2018. Second, has there been a substantial shift from typical W-2 employer-type jobs to contracting jobs (e.g., in the "gig economy"), so that W-2 measures underestimate employment and earnings? We count the number of individuals in our analysis samples for whom 1099-MISC forms were filed with the IRS in the years 2014 and 2018. We find that the share of the felony conviction cohort for whom at least one 1099-MISC form was filed increased from 8.2 percent to 9.6 percent from 2014 to 2018. For the prison release cohort, the filing rate increased from 7.9 percent to 8.5 percent during the same period.[3] Third, has there been a large increase in mortality that would mechanically decrease the W-2 filing rate? Using the Census Numident, we find that the cumulative mortality rate increased from 3 to 6 percent for the felony conviction cohort from 2014 to 2018, and from 4 to 7 percent for the prison release cohort over the same period.[4] The roles of contractor income, mortality, and other factors in explaining the flattening of employment toward the end of the recovery warrant further study.

[2]All statements in this paragraph are based on results calculated from IRS W-2 and 1099-MISC information returns, as well as the Census Numident. All results were approved for release by the Census Bureau, authorization number CBDRB-FY21-ERD002-017.

[3]We do not have access to the payment amounts associated with 1099-MISC forms, so we cannot assess precisely how much these contribute to employment and earnings.

[4]Deaths in the Census Numident are derived from the Social Security Administration's Numident, a high-quality source of person-level mortality data (Finlay and Genadek 2021).

5 Local economic recovery across sectors and the employment and earnings of the justice involved

To better understand when and how the justice involved reintegrate successfully into the labor market, we must study them in the context of the jobs available in their local labor markets. In the years since the Great Recession, there has been substantial variation across regions in the strength of recovery in local labor markets (Piskorski and Seru 2018). Here, we examine the relationship between sector-specific growth and growth in the outcomes of the justice involved at the level of 2000-vintage commuting zones (CZs).

To measure how economic recovery by industry might affect reintegration, we use annualized county data from the Quarterly Census of Employment and Wages (QCEW) to measure CZ-level growth in the per capita employment rate and the per capita wage bill, for all sectors combined and for three major sectors separately. We focus on three sectors: construction (NAICS [North American Industry Classification System] 23), manufacturing (NAICS 31-33), and other services (NAICS 81).[5] "Other services" are services not related to trade, transportation, utilities, information, financial activities, professional services, education, health, or hospitality. It includes, for example, automotive repair shops, barber shops, parking lot firms, laundry services, and religious organizations. We include the construction sector because it was particularly affected by the Great Recession (Aum, Lee, and Shin 2017). There is evidence that increases in manufacturing and construction jobs at the time of prison release are associated with lower recidivism (Schnepel 2016). And in other work, we have found that the construction sector and the other services sector play important roles in the labor market participation of the justice involved (Finlay, Mueller-Smith, and Street 2020).

We construct two justice-involved cohorts: those with felony convictions between 2006 and 2008 and those with prison releases in the same period. For these exercises, we assign individuals to the CZ in which they were born. Doing so makes it easy to link individuals to locations but potentially reduces the salience of the measures of local labor market performance. For each CZ cohort, we measure the growth of their W-2-derived employment rates and average income from 2009/2010 to 2017/2018. We pool outcomes from the years 2009 and 2010 and from the years 2017 and 2018 to reduce noise. We calculate employment growth and income growth for the CJARS and QCEW data by commuting zone.[6]

Figures 3 and 4 show the relationships between local economic performance and labor market performance of the justice involved in the chosen CZs. Figure 3 examines the employment growth relationships, while Figure 4 shows the patterns for earnings growth. In each figure, Panel A shows the scatter plots for all sectors combined, Panel B for the construction sector, Panel C for

[5]Some employment and wage statistics in the QCEW are suppressed to protect the confidential information of businesses. This does not affect our all-sector measures. But in some counties in the commuting zones we study, there are suppressed cells for the sectors we examine: construction, manufacturing, and other services. For these sectors, we use only the balanced set of counties to construct commuting zone-level measures of economic recovery.

[6]We retain commuting zones completely contained within CJARS states, with populations greater than 526,283 in 2010 and greater than 533,705 in 2018. These geographic population thresholds are required by the Census Bureau for statistics not infused with differentially private noise. We also exclude CZs with fewer than 250 CJARS individuals to reduce noise.

the manufacturing sector, and Panel D for the other services sector. In every panel, X markers represent CZ-level felony conviction outcomes, and circle markers represent CZ-level prison release outcomes. The sizes of the markers are log-proportional to the CZ population in 2018. In each scatter plot, we show the ordinary least squares best fit lines for each focal group along with the estimated slopes and R^2s. We estimated these regressions on CZ-level data and leave out other CZ-level confounders, so they are meant only to be illustrative.

[Figure 3 about here.]

[Figure 4 about here.]

We first note that there is real variation in the recovery by CZ. At the level of all sectors combined, per capita employment growth ranges between 100 and 120 percent, and per capita wage bill growth ranges between 120 and 125 percent. The Great Recession had a particularly severe impact on the construction sector (Aum, Lee, and Shin 2017), and the variation in construction sector recovery across CZs reflects those challenges. Per capita construction employment growth ranges between 85 and 160 percent, and per capita construction wage bill growth ranges between 100 and 180 percent. With the manufacturing and other services sectors, we see moderate growth in per capita employment and the per capita wage bill that places these sectors between all-sector growth and the construction sector growth.

Variation in all-sector per capita employment growth across local labor markets explains a moderate amount of the variation in justice-involved employment rate growth (slopes of 0.8 and 1.0 but with R^2s of .08 and .14). All-sector per capita wage bill growth variation explains more of the variation in justice-involved income growth (slopes of 1.4 and 1.7 with R^2s of .16 and .14).

Despite the significant variation in construction industry employment growth, not much associated expansion exists in employment of the felony conviction cohort in strong local construction labor markets (slope of 0.1 and R^2 of .01), while employment of the prison release cohort has a somewhat stronger response (slope of 0.3 and R^2 of .17). Variation in construction industry wage bill growth explains a substantial amount of the variation in the growth of justice-involved income for both focal groups (slopes of 0.6 and 0.7 but with R^2s of .22 to .24).

For both focal groups, local growth in the other services sector is strongly associated with growth in employment and earnings. For employment, the trend slopes are 0.9 and 1.1 with R^2s of .33 and .41. For income, the slopes are 1.6 and 1.4 with R^2s of .35 and .15. This sector includes firms with low skill requirements (e.g., parking lot management and laundry services) or where training can occur on the job (e.g., automotive repair shops and barber shops). Future research should try to identify where the justice involved are finding high-quality job matches in this sector, and which of these positions are more likely to lead to human capital development.

Although research has found the presence of manufacturing jobs in local labor markets to reduce recidivism (Schnepel 2016), we do not find evidence that manufacturing sector growth is correlated with improvement in labor market outcomes for the justice involved. Across cohorts and outcomes, slopes range from 0.0 to 0.5 with R^2s between .00 and .07. The only moderately strong association was found between manufacturing sector growth and income growth for individuals released from prison.

The takeaway from these figures is that local labor market conditions in the construction and other

services sectors are more strongly associated with work during reintegration after felony conviction or prison release. These individuals have a particular set of skills and face a particular set of challenges to employment that make finding work easier in particular industries (Yang 2017). And in areas where those industries are thriving, these justice-involved populations have better labor market outcomes. There also does appear to be some evidence that the associations are stronger for income growth than employment growth, which is consistent with the finding in the previous section of a leveling off of employment rates but with some continuing growth of income. These findings also highlight the importance of designing training and transitional jobs programs that correspond to the job opportunities available in local labor markets.

6 Conclusion

Work is an important part of the reintegration process of individuals who have been convicted of felonies or released from prison. These groups already face a host of challenges in seeking employment: gaps in job histories, limited education and training, higher rates of health and mental health problems, and stigma from potential employers. The historic labor market disruptions of the Great Recession exacerbated these challenges.

In this article, we have linked newly integrated and harmonized CJARS data with tax records on employment and earnings to document how the Great Recession affected labor market outcomes for individuals convicted of felonies or released from prison around the time of the recession. These cohorts did experience moderate growth in employment and earnings through the historically long recovery. Despite those improvements, average outcomes remain far below those of a comparably low-skill reference group, and for the earliest cohorts, outcomes in 2018 are below those from before the recession. We observe a plateauing of employment later in the study period. Given that this occurred while the recovery was still strong, understanding this slow down should be an important area of further research. Flattening employment rates for the justice involved does correspond with the incomplete recovery of the labor force participation of the working class (Groshen and Holzer 2021).

We also document how sector-specific local labor market performance is a significant predictor of employment and earnings growth for the justice involved. Our focal cohorts have more labor market improvements when the local construction sector and the other services sector are growing, while manufacturing growth was not strongly associated with improvements in labor market outcomes for these groups. These associations are stronger for income growth than for employment growth. Drilling down into which occupations in the construction and other services sectors are available to the justice involved could provide useful data for administrators designing training and transitional jobs programs.

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Table 1: Characteristics of individuals born in nine CJARS states with a felony conviction immediately before, during, and after the Great Recession (GR)

	Felony conviction		
	before GR	during GR	after GR
Demographic characteristics	5/06–11/07	12/07–6/09	7/09–1/11
Average year of birth	1977	1978	1980
% male	80.6	80.6	81.0
% female	19.4	19.4	19.0
% white, non-Hispanic	48.6	48.4	48.9
% Black, non-Hispanic	38.4	38.5	37.5
% Asian/Pacific Islander, non-Hispanic	0.2	0.2	0.3
% Hispanic	8.9	9.4	9.4
% American Indian/Alaska Native	2.3	2.3	2.3
% other race	1.2	1.3	1.4
% missing race	0.0	0.1	0.1
% who have died by 2018	6.8	6.0	5.4
Criminal justice characteristics			
% violent offense conviction	18.7	19.0	20.3
% property offense conviction	31.7	31.9	32.7
% drug offense conviction	34.0	32.2	31.3
% DUI offense conviction	3.3	3.6	3.8
% public order offense conviction	17.3	17.2	17.5
% felony conviction before GR	100.0	19.0	15.9
% felony conviction during GR	20.2	100.0	20.0
% felony conviction after GR	15.9	18.8	100.0
% prison entry before GR	28.7	6.3	6.6
% prison entry during GR	13.1	29.3	6.2
% prison entry after GR	10.0	13.4	29.5
% prison release before GR	12.9	8.4	7.2
% prison release during GR	16.8	12.8	8.3
% prison release after GR	12.3	16.9	13.0
N	315,000	335,000	315,000

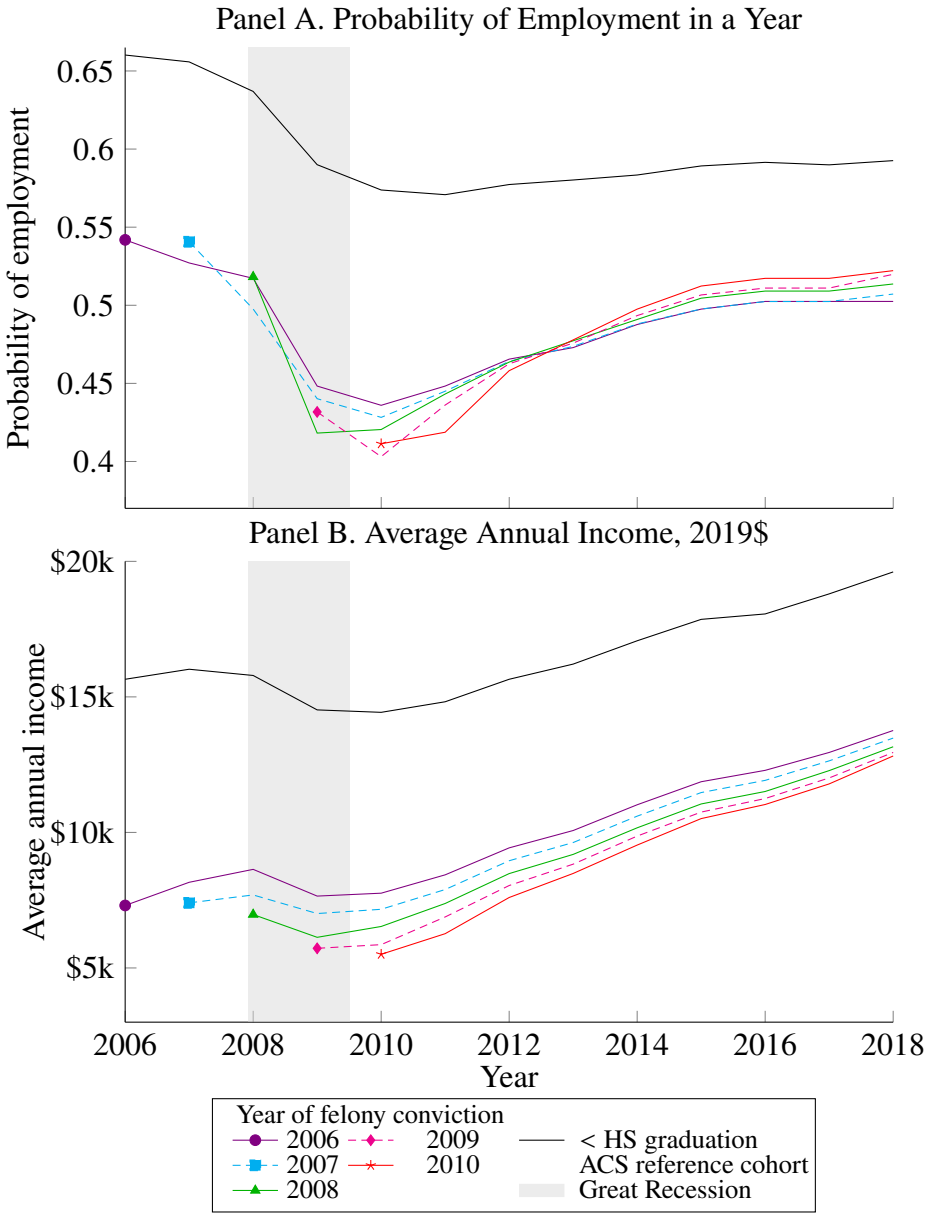
Note: Authors' calculations from CJARS data linked via Census-assigned PIK to the Census Numident (to measure sex and place of birth) and the Title 13 "best race" file (to measure race and ethnicity). The cohorts consist of individuals in the CJARS data born in AZ, MD, MI, NJ, NC, ND, OR, TX, and WI. The three cohorts are not mutually exclusive. All of the criminal justice characteristics are calculated from the CJARS data. Only CJARS states with both judicial and corrections data were used to calculate the prison statistics (AZ, MI, NC, TX, and WI with total samples of 244,000, 261,000, and 242,000). All figures have been rounded according to Census Bureau Disclosure Review Board (DRB) rules. All results were approved for release by the Census Bureau, authorization number CBDRB-FY21-ERD002-017.

Table 2: Characteristics of individuals born in nine CJARS states and released from prison immediately before, during, and after the Great Recession (GR)

	Released from prison		
Demographic characteristics	before GR 5/06–11/07	during GR 12/07–6/09	after GR 7/09–1/11
Average year of birth	1975	1976	1977
% male	86.7	86.7	87.7
% female	13.3	13.3	12.6
% white, non-Hispanic	45.9	45.2	45.3
% Black, non-Hispanic	42.1	41.8	41.8
% Asian/Pacific Islander, non-Hispanic	0.2	0.2	0.1
% Hispanic	8.9	9.1	9.4
% American Indian/Alaska Native	2.3	2.4	2.3
% other race	0.9	1.0	0.9
% missing race	0.1	0.1	0.1
% who have die by 2018	7.9	7.0	5.8
Criminal justice characteristics			
% felony conviction before GR	28.9	36.0	25.4
% felony conviction during GR	20.2	29.4	37.3
% felony conviction after GR	16.1	17.5	26.7
% prison entry before GR	41.8	42.4	21.6
% prison entry during GR	20.6	40.6	41.8
% prison entry after GR	15.8	19.1	39.2
% prison release before GR	100.0	11.5	13.2
% prison release during GR	12.0	100.0	10.8
% prison release after GR	14.2	11.2	100.0
N	158,000	165,000	171,000

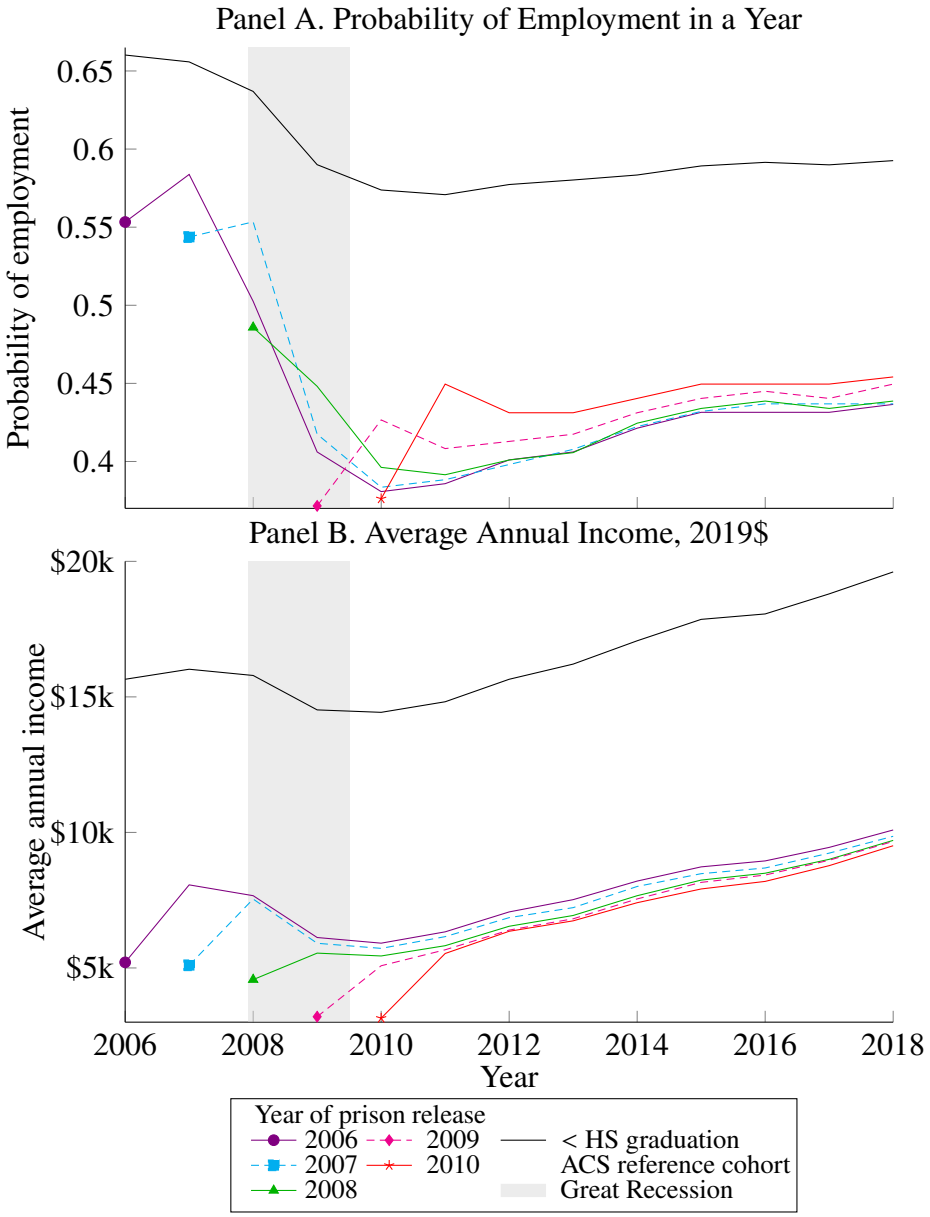
Note: Authors' calculations from CJARS data linked via Census-assigned PIK to the Census Numident (to measure sex and place of birth) and the Title 13 "best race" file (to measure race and ethnicity). The cohorts consist of individuals in the CJARS data born in AZ, FL, MI, NE, NC, PA, TX, WA, and WI. The three cohorts are not mutually exclusive. All of the criminal justice characteristics are calculated from the CJARS data. Only CJARS states with both judicial and corrections data were used to calculate the prison statistics (AZ, MI, NC, TX, and WI with total samples of 109,000, 114,000, and 118,000). All figures have been rounded according to Census Bureau DRB rules. All results were approved for release by the Census Bureau, authorization number CBDRB-FY21-ERD002-017.

Figure 1: Probability of employment and average income, individuals born in 13 CJARS states, by year-of-felony-conviction cohort, by year



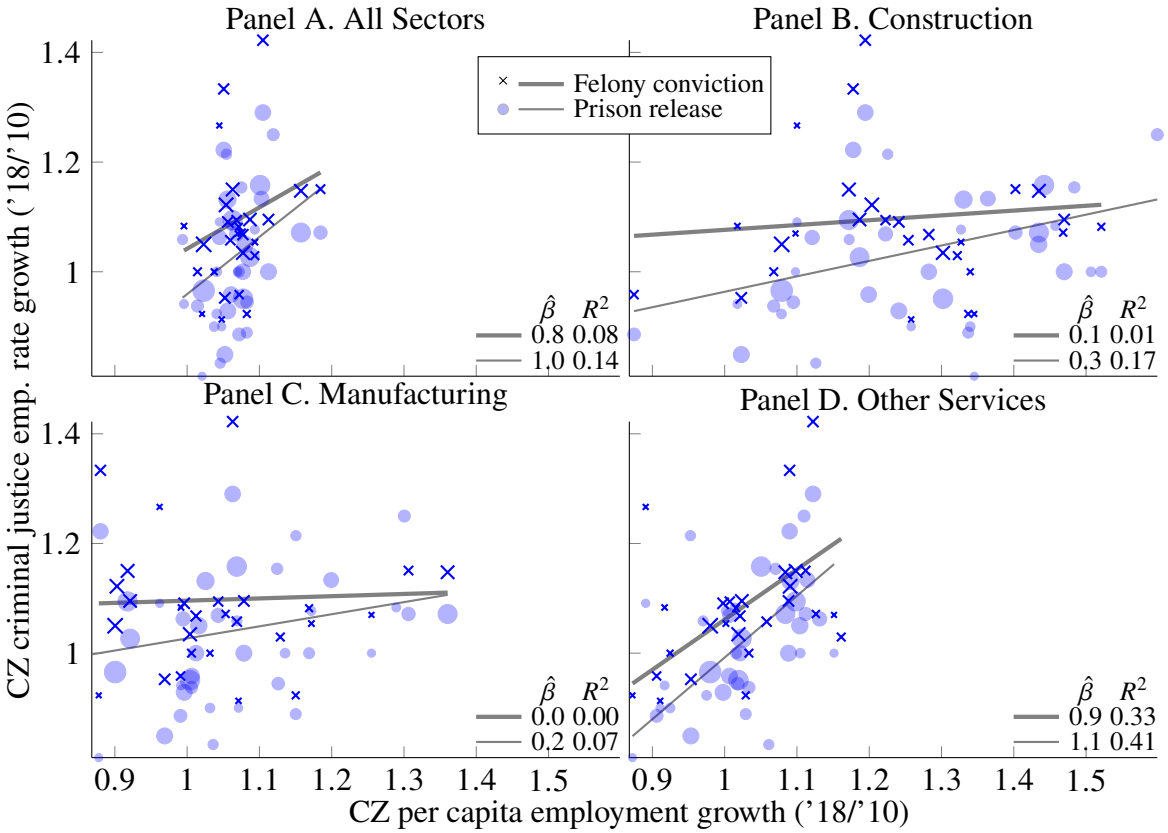
Note: Authors' calculations from CJARS data linked via Census-assigned PIK to the Census Numident (to measure place of birth) and to IRS W-2 information returns (to measure employment and income). The cohorts consist of individuals in the CJARS data born in AZ, MD, MI, NJ, NC, ND, OR, TX, and WI. Employment in a year is defined as having at least one W-2 return in that year. Income in a year is defined as the sum of wages on all W-2 returns for that year. Income has been inflated to 2019 dollars using the Consumer Price Index (CPI)-All Urban series. All figures have been rounded according to Census Bureau DRB rules. All results were approved for release by the Census Bureau, authorization number CBDRB-FY21-ERD002-017.

Figure 2: Probability of employment and average income, individuals born in 13 CJARS states, by year-of-prison-release cohort, by year



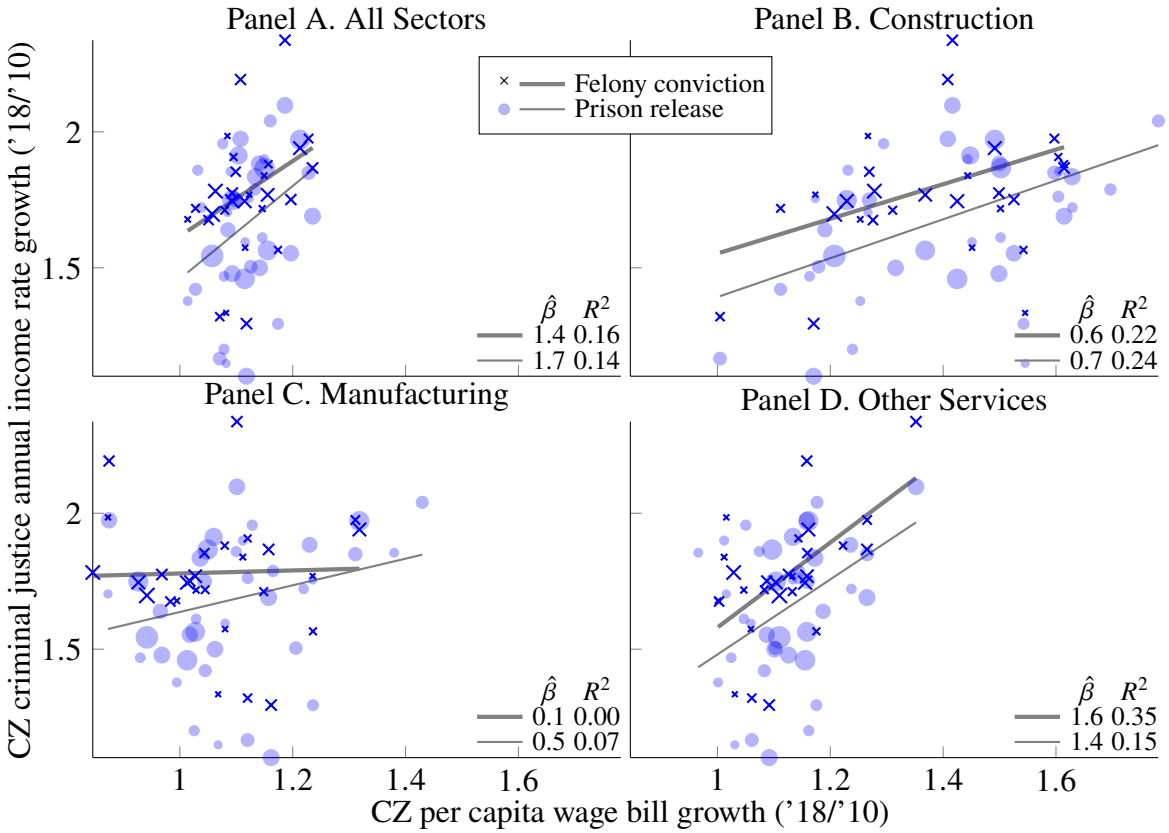
Notes: Authors' calculations from CJARS data linked via Census-assigned PIK to the Census Numident (to measure place of birth) and to IRS W-2 information returns (to measure employment and income). The cohorts consist of individuals in the CJARS data born in AZ, FL, MI, NE, NC, PA, TX, WA, and WI. Employment in a year is defined as having at least one W-2 return in that year. Income in a year is defined as the sum of wages on all W-2 returns for that year. Income has been inflated to 2019 dollars using the CPI-All Urban series. All figures have been rounded according to Census Bureau DRB rules. All results were approved for release by the Census Bureau, authorization number CBDRB-FY21-ERD002-017.

Figure 3: Relationship between employment rate growth of those convicted of a felony or released from prison from 2006 to 2008 and local per capita sectoral employment growth, selected commuting zones in 13 CJARS states, 2010–2018



Note: Authors' calculations from CJARS data linked via Census-assigned PIK to the Census Numident (to measure place of birth) and to IRS W-2 information returns (to measure employment). The felony conviction cohorts consist of individuals in the CJARS data born in AZ, MD, MI, NJ, NC, ND, OR, TX, and WI. The prison release cohorts consist of individuals in the CJARS data born in AZ, FL, MI, NE, NC, PA, TX, WA, and WI. Employment in a year is defined as having at least one W-2 return in that year. For a cohort defined as having at least one felony conviction between 2006 and 2008, the growth rate of the employment rate is calculated for pooled employment status for 2017–2018 relative to pooled employment status for 2009–2010. CZ sectoral employment is aggregated from QCEW county total employee counts, then divided by CZ population. Each point represents the growth rate for cohort members from a particular CZ. Only CZs in CJARS states with populations greater than 526,283 in 2010 and greater than 533,705 in 2018, and with CJARS cell sizes larger than 250 are included. Marker sizes are log-proportional to CZ population in 2018. All figures have been rounded according to Census Bureau DRB rules. All results were approved for release by the Census Bureau, authorization number CBDRB-FY21-ERD002-017.

Figure 4: Relationship between income growth of those convicted of a felony or released from prison from 2006 to 2008 and local per capita sectoral wage bill growth, selected commuting zones in 13 CJARS states, 2010–2018



Note: Authors' calculations from CJARS data linked via Census-assigned PIK to the Census Numident (to measure place of birth) and to IRS W-2 information returns (to measure income). The felony conviction cohorts consist of individuals in the CJARS data born in AZ, MD, MI, NJ, NC, ND, OR, TX, and WI. The prison release cohorts consist of individuals in the CJARS data born in AZ, FL, MI, NE, NC, PA, TX, WA, and WI. Income in a year is defined as the sum of wages on all W-2 returns for that year. Income has been inflated to 2019 dollars using the CPI-All Urban series. For a cohort defined as having at least one felony conviction between 2006 and 2008, the growth rate of average income is calculated for pooled income for 2017–2018 relative to pooled income for 2009–2010. CZ sectoral wage bill is aggregated from QCEW county wage bill, then divided by CZ population. Each point represents the growth rate for cohort members from a particular CZ. Only CZs in CJARS states with populations greater than 526,283 in 2010 and greater than 533,705 in 2018, and with CJARS cell sizes larger than 250 are included. Marker sizes are log-proportional to CZ population in 2018. All figures have been rounded according to Census Bureau DRB rules. All results were approved for release by the Census Bureau, authorization number CBDRB-FY21-ERD002-017.