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Employment Challenges Faced by People with Criminal Histories

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Abstract

People with criminal histories face many challenges in the labor market stemming from stigma, relatively weak social connections to formal labor markets, low levels of formal educational attainment, and barriers associated with current and past poverty. How do the employment outcomes of people with criminal histories compare to those without? Are firms more willing to hire people with criminal histories when the labor market is especially tight and workers are hard to find? Which public policies can best promote the reintegration of people with criminal histories into the workforce and which may be generating more harm? In this paper, I attempt to answer these questions drawing upon data from U.S. household surveys and the extensive body of research exploring the employment challenges faced by people with criminal histories. I document markedly higher unemployment and lower labor force participation rates among people at high risk of criminal justice involvement, and relatively greater sensitivity of the employment prospects of these individuals to macroeconomic conditions. While these patterns can largely be attributed to differences in human capital and demographics, I still observe that after controlling for observable factors those most likely to be involved with the criminal justice system have more difficulty finding employment, are more likely to leave the labor force, and are less likely to reenter once they have left. Next, I review what we know about policies intended to improve the employment prospects for those with criminal histories. I begin by reviewing what we know about efforts to limit employer access to criminal history information through state and local "Ban-the-Box" laws. I conclude that the weight of the empirical evidence suggests that such laws do not improve the employment prospects of those with criminal histories and may harm the employment prospects of African-American men without criminal histories. Finally, I discuss efforts to provide better guidance to non-criminal justice decisionmakers regarding how to interpret the signal associated with a criminal history record, efforts to officially certify someone as rehabilitated, and mechanisms that may avoid concentrating the risks associated with employing someone with a criminal history onto private sector employers.

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1. Introduction

While a relatively small percentage of American adults are under direct criminal justice supervision at any given time, a sizable minority have prior arrests and convictions that are readily discoverable through criminal background checks. For example, in 2021 there were 2,100 people under correctional supervision per 100,000 U.S. adults, roughly 69 percent of which are under parole or probation supervision and the remaining 31 percent incarcerated in either a federal or state prison or a local county jail (Carson and Kluckow 2023). By contrast, existing research suggests that over three percent of adults and nine percent of adult males in 2010 were either currently in prison or under parole supervision or where in prison and/or under parole supervision in the past (Shannon et. al.2017). The prevalence of prior felony convictions is even higher. Shannon et. al. (2017) estimate that roughly eight percent of adults and 13 percent of adult males have a felony conviction on their criminal history records. Among African-Americans, these figures are 23.4 percent of all Black adults and 33 percent for Black males. The prevalence of convictions for less serious criminal offenses (misdemeanor for example) is certainly much higher (Brame et. al. 2014).

People with criminal histories face many challenges in the labor market. To start, many employers are reluctant to hire people with criminal histories. Examination of employer surveys (Holzer et al. 2006a, b, 2007; Raphael 2014) as well as direct estimation of the effect of criminal histories on the likelihood of getting a job interview or being called back following an interview reveal the difficulties that people with criminal histories encounter when searching for work (Agan & Starr 2018, Pager 2003, Pager et al. 2009). This research consistently documents employer reluctance to hire people with criminal histories, especially for jobs involving customer contact and noticeably lower callback rates for applicants who signal a prior conviction or an incarceration spell. Moreover, Uggen et. al. (2014) find evidence that convictions and even arrests for relatively minor offenses may reduce the likelihood of being called back for a job.

Beyond these demand side barriers, people with criminal histories often face employment challenges associated with low levels of formal skills, a high prevalence of health and mental health conditions, and general barriers associated with chronic and deep poverty. For example, people under correctional supervision tend to have very low levels of formal educational attainment, weaker social connections to formal employers (both direct and indirect), high prevalence of work limiting disabilities, high prevalence of severe mental illness, and a high prevalence of substance use disorders. Prior to admission and following release from institutions, many find themselves either directly experiencing homelessness or with other forms of tenuous housing arrangements. To be sure, there is great heterogeneity in personal characteristics among people with prior conviction and arrests. People who receive more severe sanctions (e.g., felony vs. misdemeanor convictions, incarceration vs. probation, prison as opposed to jail or probation sentences) tend to have lower skills and higher prevalence of these factors that may limit work.

How do the employment outcomes of people with criminal histories compare to those without? Are firms more willing to hire people with criminal histories when the labor market is especially tight and workers are hard to find? Which public policies can best promote the reintegration of people with criminal histories into the workforce? In this paper, I attempt to answer these questions drawing upon data from U.S. household surveys and the extensive body of research exploring the employment challenges faced by people with criminal histories and the relative efficacy of policies meant to alleviate these challenges.

I begin by documenting difference in the employment dynamics experienced by working-age adults from demographic groups with high rates of institutionalization. Unfortunately, nationally representative household surveys do not include questions pertaining to one's criminal history. Nonetheless, one can use the American Community Survey (which surveys the institutionalizes as well as the non-institutionalized population) to estimate which demographic, human capital, and geographic characteristics predict a high likelihood of current institutionalization and, by extension, current and past criminal justice involvement. Based on these associations in the ACS, I impute the relative likelihood of criminal justice involvement using data from the Current Population Survey covering the years 2000 through 2019. I then use these data to document the following employment patterning describing the employment patterns of people with high likelihood of criminal justice involvement.

First, adults from high-risk groups experience much higher unemployment rates relative to lower-risk groups. In addition, these adults experience lower employment-to-population ratios due to both higher unemployment rates and notably lower labor force participation rates. The employment prospects of high-risk of involvement adults also exhibit much greater sensitivity to the business cycle, suggesting that these individuals are likely aptly described as last-hired, first-fired.

Second, using CPS data merged at the individual level across months, I document key and pronounced differences in transition probabilities between the broad labor force status categories (i.e., employed, unemployed, not in the labor force). People from high incarceration demographic groups are significantly more likely to transition out of employment from one month to the next, both towards unemployment as well as out of the labor force. Unemployed people from high-incarceration demographic groups are less likely to find employment within a month's time and are more likely to exit the labor force. Observable differences in education and demographics explain the higher likelihood of job loss, but do not explain the relative difficult in procuring employment, the higher likelihood of leaving the labor force altogether, and the lower likelihood of reentering the labor force once.

I use these results to simulate what employment, unemployment, and labor force participation rates would be if policy were able to eliminate key unexplained differences in these transition probabilities. This exercise suggests that the relatively low job-finding rates as well as the higher transition rates out of employment contribute substantially to the relatively poor labor market prospects faced by people with high likelihood of involvement with the criminal justice system, though differences in human capital also play a large role.

Next, I review what we know about policies intended to improve the employment prospects among those with criminal histories, many of which can be thought of as targeting specific transition probabilities. I begin by reviewing what is known about efforts to limit employer access to criminal history information. Many states and localities across the country have enacted legislation that limits the consideration of criminal histories in hiring decisions, often referred to as "Ban-the-Box" laws. A growing body of research directly assesses the effect of Ban the Box (BTB) on the employment prospects of those with criminal histories, as well as tests for spillover effects operating through statistical discrimination. While research findings are not uniform, I conclude that the weight of the empirical evidence indicates that BTB does not improve the employment prospects of those with criminal histories and may harm the employment prospects of African-American men without criminal histories.

Next, I discuss efforts to provide better guidance to non-criminal justice decisionmakers regarding how to interpret the signal associated with a criminal history record, efforts to officially certify someone as rehabilitated, and mechanisms that may avoid concentrating the risks associated with employing someone with a criminal history onto private sector employers. In particular, publicly subsidized insurance, better research on criminal recidivism that moves beyond prison release cohorts, and incorporation of this information on formal certifications of rehabilitation provide promising directions for further inquiry. In particular, a small but growing body of research suggests that certificates of rehabilitation may be effectives at identifying individuals that have desisted from offending, and that when coupled with indemnification of employers against negligent hiring lawsuits, may be effective at increasing demand for people with criminal histories.

2. Causal Pathways Linking Criminal Justice Involvement to Employment Outcomes

There is great heterogeneity in the extent to which individuals may become involved with the criminal justice system, ranging from very low-level arrests that do not result in convictions to criminal cases that result in lengthy prison terms. Involvement of all forms may impact employment prospects through various direct and indirect channels. To begin, criminal cases may directly interfere with one's ability to work. Most obviously, the currently incarcerated cannot work in the formal labor market. However, even minor arrests and criminal case processing may interfere with employment and hasten job loss. While some arrests result in a citation and release on the same day, many arrests result in a period of pretrial detention that can range from a day or two until the person is formally arraigned to months and even years before a case reaches a formal disposition. Pretrial detention prevents someone from showing up to a job and often creates unexplained absences.

Even among those who are released pretrial, court dates, subsequent arrests for pretrial misconduct (e.g., failure to appear for a court date), and monitoring demands by pretrial services departments (e.g. drug testing) often generate absences from work that may not be tolerated by employers. Not surprisingly, researchers who have studied employment and earnings trajectories surrounding the adjudication of felony offenses find declines in earnings and employment up to four quarters before formal case disposition and sentencing (Kling 2006). Moreover, research exploiting plausible sources of exogenous variation in pretrial detention demonstrates sizable negative impacts of pretrial detention on contemporaneous and future formal sector employment (Dobbie, Goldin, and Yang 2018).

Beyond these direct impacts, lengthy incarceration spells and periods of cycling in and out of institutions hinders the accumulation of formal labor market experience, may weaken social connections to family and friends that are firmly attached to the labor market, and may lead to depreciation of soft and hard skills. Of course, the effects of an incarceration spell are most likely heterogeneous and dependent on the nature of the correctional system. Many people engage in educational programming as well as programming intended to address substance use disorders, anger management, conflict mediation, cognitive processing, and other factors intended to address root causes of criminal offending (see Byrne 2020 for a recent review of the in-prison programming in the U.S.). Moreover, there is strong evidence from Norway that corrections systems that invest heavily in rehabilitation and job training increase subsequent employment and reduce future offending (Bhuller et. al. 2020). Hence, criminal justice involvement may actually be corrective (as intended) in some settings. In the U.S., however, there is little evidence suggesting that arrests, convictions, incarceration, and/or community corrections supervision improve employment prospects, with most research pointing to deleterious effects on employment and wages (Raphael 2014).

One of the more concerning effects of a criminal history operates through stigma and how employers consider criminal histories when making employment decisions. Employers are often reluctant to hire workers with criminal histories and regularly screen applicants accordingly. This reluctance is driven by concerns regarding the ability to procure employee liability insurance, fears that the employee will harm a fellow employee or a customer, negligent-hiring legal liability (Cavico et al. 2014), and in some instance explicit prohibitions against hiring people with criminal histories in local, state, or federal laws. Not all employers screen out job applicants with criminal histories. In fact, employer surveys reveal that those hiring into jobs not requiring customer contact are often the most willing to hire such applicants (Holzer et. al. 2007; Raphael 2011). That being said, the same surveys suggest a general reluctance to hire workers with a criminal past that appears to be stronger than the reluctance to hire other stigmatized workers. Not surprisingly, hiring audit studies consistently find lower callback rates for applicants presenting with criminal histories (Agan & Starr 2018, Pager 2003, Pager et al. 2009) and even for applicants with no more than misdemeanor arrests on their records (Uggen et. al. 2014).

The market-level consequences of this reluctance can be analyzed using standard models of labor market discrimination (Becker 1971; Charles & Guryan 2008). To the extent that demand for people with criminal histories is limited to a small subset of employers and positions, clearing the market may require a drop in the relative wages of job seekers with criminal histories. This may result in a corresponding relative decline in labor force participation, and to the extent that the availability of opportunities is concentrated in specific firms, segregation of workers with criminal histories from those without across firms and sectors. Several studies document average differences in outcomes consistent with this theoretical argument, including research documenting segregation across employers (Jackson and Zhao 2016; Rose 2020) and employment and wage penalties associated with a prior conviction (Apel and Sweeten 2010; Raphael 2007, Western 2002).

Moving beyond demand-side factors that limit the employment prospects of people with criminal histories, there are also clear supply-side differences that contribute to relatively low employment and earnings. As we will see in the next section, individuals in demographic groups at high-risk of criminal justice involvement tend to have very low levels of formal education, are disproportionately Black and/or Hispanic, suffer high rates of poverty, and have relatively high prevalence of cognitive and physical disabilities. Among the incarcerated, there is a high relative prevalence of health conditions such as asthma, diabetes, and heart disease as well as particularly high relative prevalence of serious mental illness, such as major depression, schizophrenia, and bipolar disorder (Raphael and Stoll 2013). Of course, the incarcerated are a particularly select group of people even among those with criminal histories and the prevalence of these health and mental health conditions are likely to be much higher among incarcerated people relative to broader population of people with prior arrests and convictions.

To summarize, factors on both the demand as well as the supply side of the labor market for people with criminal histories are likely to contribute to relatively poor labor market outcomes. Involvement with the criminal justice system may mechanically interfere with (and if the incarcerated, physically prevent) formal labor market participation. Stigma, prejudice, and employer liability concerns may further limit demand. Moreover, average human capital differences between those with and without criminal histories also likely lead to relatively poor employment outcomes.

3. Differences in Employment Dynamics

The discussion above suggests that persons with criminal histories are likely to encounter difficulties in procuring employment, may need to accept positions with lower pay and fewer non-pecuniary amenities, and may have lower employment and labor force participation rates. The discussion are also indicative of direct causal effects of prior criminal history involvement that may suppress overall employment levels for these groups below what they would be in a counterfactual world where our response to criminal offending differed. Stigma in particularly may render the employment prospects of those with criminal histories more sensitive to the strength of the macroeconomy. To the extent that employers overcome their reluctance in tight labor markets but have more room to act on this reluctance when unemployment is high, the unemployment and employment rates of those with criminal histories may be more sensitive to the business cycle.

Unfortunately, standard U.S. household surveys not include information on whether survey respondents have criminal history records. Hence, it is impossible to directly explore these issues with nationally representative survey data. However, one can use a combination of household surveys to first identify demographic groups at very high risk of interaction with the criminal justice system and then study the employment outcomes and changes in employment outcomes over time for groups defined by this risk category.

This is the approach I take here. Specifically, I first use the 2019 five-year American Community Survey (ACS) files (which surveys the institutionalized as well as the non-institutionalized population) to identify demographic groups with high levels of criminal justice involvement. I then use these results in conjunction with the Current Population Survey (CPS) monthly files for 2000 through 2019 to document relative employment dynamics for non-institutionalized individuals in demographic groups with high levels of criminal justice involvement.

Identifying high-risk demographic groups in the ACS

The ACS samples both the non-institutionalized population as well as people residing in institutional group quarters. Group quarters include correctional institutions (prisons and jails) mental hospitals, and institutions for the elderly, handicapped, or poor. The population of mental hospitals is quite small relative to prisons and jails, as is the population of working age adults in the latter categories of institutions. We restrict the ACS sample to individuals 22 to 55 years of age and use residence in institutionalized group quarters as an indicator of current criminal justice involvement.

Figures 1 and 2 present trends in the institutionalization rates (i.e., the proportion residing in institutionalized group quarters) using the Census Public Use Microdata Samples for 1970 through 2000 as well as the ACS for the years 2010 and 2019. Figure 1 demonstrates several well-known incarceration patterns. First, institutionalization rates increased steeply for most demographic groups in 1980, peaking in the mid 2000s, and then decline somewhat in recent years. Second, there are enormous racial disparities, with institutionalization rates highest for Black people, followed by American Indian people, Hispanic people, White people, and Asian people. Finally, institutionalization rates for males are many multiples the institutionalization rates for females.

Figure 2 presents similar trends where the data are further disaggregated by broad levels of educational attainment. The time trends as well as the ordering across racial and ethnic groups within each education grouping are similar to what is observed in Figure 1. However, Figure 2 demonstrates the very strong relationship between educational attainment and institutionalization. People with college degree are rarely institutionalized. By contrast, a sizable minority of people with less than a high school degree is institutionalized when surveyed by the census bureau. This is especially true for men and minority men in particular.

Using the five-year 2019 ACS file, I first construct demographic groups defined by state of residence, immigration status (citizen/non-citizen), gender, age (seven categories), educational attainment (four categories), and race/ethnicity (five categories).[1] I then use the sample data to estimate the proportion of members of each demographic cell that is institutionalized. To order the demographic groups into broader risk groupings, I calculate the decile values of the proportion institutionalized using the group means but weighting the decile breaks by the number of observations in each demographic cell.[2] These deciles break variable are then merged to the microdata and used to stratify the *non-institutionalized* observations in the microdata into risk groups, where the overall institutionalization rate is used as a proxy for risk of criminal justice involvement for the particular demographic group.

Table 1 presents descriptive statistics from the 2019 Five-Year ACS file for the non-institutionalize in these imputed risk groupings. I combine the bottom five deciles since the

[1] These dimensions define 28,000 demographic cells, of which I observe observations within 24,147. For the purpose of imputing group-level criminal justice involvement in the microdata, I restrict the imputation to individuals in demographic groups with at least 30 observations in the five-year ACS. While this eliminates quite a few observations from the file summarized by demographic group (11,114 of the 27,147 demographic cells have more 30 or more observations), 98.16 percent of observations in the ACS microdata match to a demographic group-mean calculated with 30 or more observations.

[2] The average institutionalization rate for demographic groups below the median value is 0.0019. The comparable means for groups in deciles 6, 7 ,8, 9, and 10 are 0.009, 0.015, 0.026, 0.046, and 0.142.

institutionalization rate is very low for these adults and this group accounts for a small share of the institutionalized. The first row presents the proportion of the institutionalized in each grouping. The bottom 50 percent of the risk distribution accounts for only 3.8 percent of the institutionalized. By contrast, the top decile of the sample accounts for 57.6 percent of the institutionalized, while the top 30 percent (the top three deciles) account for nearly 90 percent of the institutionalized.

The remainder of Table 1 presents descriptive statistics for the non-institutionalized that fall within these groupings. These tabulations reveal what one would expect given what we see in Figures 1 and 2. Men are overwhelmingly over-represented among the high-risk groups, as are racial/ethnic minorities and people with low levels of formal education. People in the high-risk categories are more likely to be a citizen and much more likely to be in poverty. Finally, we see higher prevalence of physical and cognitive disabilities (as measured in the ACS) among high-risk adults.

The table also presents the distribution of each group across labor market status categories, as well as the unemployment rate among labor force participants. The employment-to-population ratio is much lower among the highest-risk decile (0.622) relative the bottom five deciles (0.818). In addition, the proportion not in the labor force (NILF) among the highest-risk deciles is nearly double that for the bottom five deciles (0.317 in contrast to 0.154). Similarly, the proportion unemployed for the top decile is more than double the value for the bottom five deciles (0.061 in contrast to 0.027), and the unemployment rate for the highest-risk decile is nearly three times that for those in the bottom half. Note, these tabulations pertain to the non-institutionalized and hence, suggest sizable proportions of the non-institutionalized among the highest risk groups are not working.

Certainly, the underlying variable used to perform this stratification (proportion institutionalized) is an imperfect and partial proxy. For one, the population on probation or parole is more than double the incarcerated population on any given day and current institutionalization will not measure those under alternative forms of correctional supervision. For example, while at year-end 2021 there were 1.2 million people in state or federal prison and roughly 636,000 in local jails, there were roughly 3.75 million people on probation or parole. Among our highest risk group, roughly 14 percent is institutionalized on any given day. Assuming a community corrections population roughly double the incarcerated population would imply 28 percent of this group is on probation or parole, and thus 42 percent of this group would be under some form of current correctional supervision.

Furthermore, this measure will not capture people who are not currently under correctional supervision but were under supervision at some point in the past. For the purposes of studying labor market dynamics, these people are negotiating the U.S. labor market with a criminal history record and likely experiencing many of the barriers associated with the causal channels discussed above. Shannon et. al. (2017) estimates that in 2010 the population of people who were formerly either incarcerated or on probation or parole was roughly double the population under correctional supervision. Applying this ratio to our highest-risk group would imply that 84 percent is either currently or formerly involved with the criminal justice system.

Of course, such back-of-the-envelope calculations are speculative and difficult to verify given the limits of U.S. household surveys with regards to measuring criminal justice involvement and the prevalence of a criminal history. Nonetheless, one should keep in mind that the proportion of people within our risk categories under alternative forms of supervision and with criminal history records that may be screened by an employer is certainly much larger than the current institutionalization rates as measured in census data.

Identifying Risk Groups in the CPS and Merging CPS Samples Across Months

Having an ordering of demographic groups by risk of criminal justice involvement, I merge the group-level decile rankings to microdata from the monthly CPS for all months in the years 2000 through 2019.[3] I restrict the sample to adults 22 to 55 years of age to match the sample specifications used in the pre-processing of the ACS data. To study employment dynamics among these risk groups, I use the combination of identifiers in the CPS that uniquely identify observations in consecutive months to measure the employment status in month t as well as employment status in month $t+1$. Note, this matching is possible for roughly two-thirds of observations in the CPS.[4] With these merged files, I measure monthly transitions between the

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[3] I perform this merge using the set of covariates that are common to both the CPS and ACS file and that are used to define the demographic cells in the calculated ACS summary file discussed above.

[4] Individuals in the CPS are interviewed for four consecutive months, are out of sample for eight months and are then interviewed again for four additional consecutive months. These eight interviews constitute rotation groups 1 through 8 with people in rotation groups 4 and 8 constituting the "outgoing rotation groups" who are not interviewed the following month. Rotation groups are staggered in time such that in any given month there are households in the sample in each rotation group, with one quarter of the sample rotating out in the following month. People who are in rotation groups 1 through 3 and 5 through 7 can be linked to the following months interview using the household id variable, a household number variable, and a person number. Since the CPS

labor market status values of employment, unemployment, and not in the labor force (NILF) and study how these transitions probabilities differ across the risk groupings. The final data set used below consists of all observations in the monthly files from January 2000 through December 2019[5] that I am able to match to a survey interview in the month following. I begin with a simple description of employment trends and trends in job loss and job gain overtime. I then turn to a more in-depth analysis of the individual transition probabilities between different employment status values.

Employment Trends and Covariance with the Business Cycle

Figure 3 displays monthly unemployment rates as well as employment-to-population ratios for the top five risk deciles as well as the bottom five risk deciles combined into one group. Unemployment rates increase monotonically as we move from the lowest to the highest risk group in most months. Persons in the top risk decile experience the highest unemployment rate in all months while persons in the bottom five deciles experience the lowest. We observe sharp increases in unemployment with the onset of the 2008 recession, with the increases much larger among higher risk deciles. The ordering of employment to population ratios is basically the inverse with the highest risk deciles having the lowest employment rates. Interestingly, while unemployment rates for the highest risk deciles eventually falls below pre-2008 levels by the end of the study period, the employment-to-population ratio never recovers, indicating a decline in the labor force participation rate among persons in the highest-risk decile.

The figure suggests greater sensitivity of the unemployment rates of high-risk individuals to the business cycle. To explore this formally, I regress the monthly unemployment rate for each risk grouping in Figure 3 on the national unemployment rate and compare the magnitude of the coefficients. The results of this exercise are presented in Figure 4. There is clear evidence of greater relative sensitivity of the unemployment rates of high-risk individuals to the business cycle, with the coefficients on the national unemployment rate increasing uniformly across the risk

sample is based on housing units, households that move between survey months will leave the sample (with whoever moves into the unit replacing the outgoing household). Hence, in merging across months one loses a quarter of the sample due to the rotation group structure (those in rotations groups 4 through 8). In addition, one also loses people who move between months. To ensure the quality of the merge, I further restrict the sample to observations with concordant gender values in months *t* and *t+1*, educational attainment values where the difference between the starting and ending value is no more than one (in absolute value), and where the difference in age (in absolute value) is no more than two.

[5] I also use data from the January 2020 CPS to measures the employment transitions for people survey in December 2019.

groupings. Contrasting the highest and lowest risk groupings in the figure, we see that an increase of one percentage point in the national unemployment rate is associated with a 1.74 percent increase in the unemployment rate for workers that are the most likely to be involved with the criminal justice system. In contrast, the comparable figure for workers with the lowest risk of criminal justice involvement is 0.58.

Figures 5, 6, and 7 present similar results for broad labor market transitions. For each month, I tabulate job-leave rates (the proportion employed in month *t* who are either unemployed or NILF in month *t+1*) and job-gain rates (persons who are either unemployed or NILF in month *t* and employed in month *t+1*) and present trends over the study period by risk group (Figure 5) and the bivariate relationship between these transitions and the national unemployment rate (Figures 6 and 7). For Figure 5, I restrict the comparison to the highest and lowest risk groupings since overlap across the five groups renders a cluttered and difficult to interpret visualization.

In Figure 5, we observe employed persons in the group that is at highest risk of criminal justice involvement leaving employment at a rate that is discretely higher than that for persons in the bottom five deciles. There also seem to be more pronounced increases in these separation rates for higher-risk persons with the onset of the 2008 recession. There is much more overlap in the time series for job gain rates for the highest and lowest risk groupings. This overlap is driven in part by the very high proportion male among the highest risk groups and the generally higher job-gain rates for men relative to women. Both groups experience declines in job-gain rates with the onset of the 2008 recession, with the declines somewhat greater among higher risk persons.

Figures 6 and 7 display the bivariate regression coefficients from regressions of the job leave rate (Figure 6) and the job gain rate (Figure 7) on the national unemployment rate for each group. Job-leave rates exhibit greater sensitivity for those in higher risk groups, with the coefficients increasing monotonically across the risk-group deciles. While these transitions most certainly reflect in part voluntary separations (especially transitions to NILF), the pattern is consistent with higher-risk workers being the first-fired during downturns.

Job-gain rates generally decline for all groups with increases in the national unemployment rate (as is evidenced by the negative significant coefficients for all groups in Figure 7). There is also moderate evidence suggesting lower job gain rates among higher risk individuals, though the coefficients do not decline uniformly with increased risk. We will soon see however, that controlling for basic demographics yields stronger evidence consistent with markedly lower transitions to employment among higher risk individuals.

Analysis of Specific Labor Market Status Transition Probabilities

The patterns thus far suggest that people at high risk of criminal justice involvement experience higher job loss rates and are somewhat less likely to transition into employment given being unemployed or out of the labor force. These disparities are likely driven in part by the human capital differences, and/or differential experiences of labor market discrimination. For example, in Table 1 we see that people with less formal education, men, and racial and ethnic minorities are over-represented among the higher-risk groups. To the extent that more education improves the ability to find and retain employment, or that racial and ethnic minorities experience discrimination in hiring and firing decisions, the observed differences in transition rates may reflect the impact of these factors rather than an effect of criminal justice involvement per se.

To explore these issues, here I focus on specific transition probabilities between employment, unemployment, and being out of the labor force. I begin by documenting the differences in these transition probabilities across groups and the degree to which the observed differences are explained by average differences across groups in demographic and human capital variables. I then use these results to simulate counterfactual steady-state distribution across labor market statuses that would results if we were to eliminate specific gaps in transition probabilities.

Table 2 uses the merged CPS files pooled across all months for the years 2000 through 2019 to calculate transition probabilities between employed, unemployed, and not in the labor force (NILF). Panel A presents results for the bottom five risk deciles combined while panel B presents results for the top risk decile. Within each panel, the first three columns present the empirical transition probabilities between labor market status in month *t* (along the stub of the table) and labor market status in month *t+1* (along the top of the table). The fourth column presents the steady state distribution across employment status categories implied by the empirical transition probabilities while the final column presents the actual empirical distribution across categories.[6] Finally, the bottom row of each panel presents the unemployment rate (both the

[6] I calculate the steady state distribution across labor market status categories in the following manner. Define T as the 3x3 empirical transition matrix and the vector S as the 3x1 vector with elements equal to the proportion employment, unemployment, and NILF. The steady-state vector S* is found by solving the equation T'S*=S* taking into account the constraints i'S*=1, where i is 3x1 vector with all elements equal to one.

implied steady state and the empirical unemployment rate) tabulated using only labor force participants.

There are notable differences in the transition probabilities between the low and high-risk groups. Those most likely to be involved with the criminal justice system are three times as likely to transition from employment to unemployment between months (0.024 in contrast with 0.008), and have a transition rate from employment to out of the labor force of that is roughly 1.3 times the value for the workers in the bottom five deciles. Unemployed workers from the highest risk group are only slightly less likely to find employment within the month (0.225 in contrast to 0.245 for the bottom half), and transition out of the labor force at a rate similar to that of the workers in the bottom half of the risk distribution. Finally, we see more movement from being out of the labor force to other labor market status categories among high-risk persons, though the proportion that move into employment is lower for higher risk people (0.070) relative to lower risk workers (0.077).

The empirical distributions and the implied steady-state distribution across employment status categories are quite close to one another as are the unemployment rates tabulated using labor force participants. To summarize, we observed an employment-to-population ratio among the highest risk group that is roughly 7.6 percentage points lower than that for people in the bottom half of the risk distribution (with a differences in the steady-state rates of 9.4 percentage points) and an unemployment rate for the highest risk workers that is nearly three times that for workers in the bottom half of the risk distribution (with a ratio of 2.94 for the empirical unemployment rates and 2.8 for the steady-state unemployment rates).

To explore the degree to which the differences observed in Table 2 are driven by average differences across groups in demographic and human capital characteristics, Figures 8 through 10 graphically display disparities in transition probabilities relative to persons in the bottom half of the risk distribution with and without adjusting for observable covariates. Specifically, I first estimate a regression model where the dependent variable is a specific transition probability and the key explanatory variables are dummy variables indicating deciles six through ten of the risk distribution (the bottom half being the omitted category). I then re-estimate the model adding controls for calendar year fixed effect, calendar month fixed effects, a male dummy variable, seven age-group dummies, four educational attainment dummies, five race/ethnicity categories, and all two-way, three-way, and four-way interactions between the male, age, race/ethnicity, and educational attainment variables.[7] Each figure plots the disparities relative to the bottom half of the distribution from the model without controls (blue dots with blue confidence interval markets) and the model with controls (red dots with red confidence interval markers).

Figure 8 displays results for the employment-to-unemployment and employment-to-NILF transition probabilities. The unadjusted employment-to-unemployment transition rates increase uniformly with the risk deciles, with an unadjusted difference between the highest risk decile and the bottom half of the risk distribution of roughly 1.6 percentage points. Adjusting for observable covariates explains this pattern away, with little evidence of relationship between the likelihood of leaving one's job and the risk of criminal justice involvement. There is a less clear pattern for the unadjusted differentials from the transition from employment to NILF. While the highest-risk decile is more likely to exit the labor force from being employed, this transition probability does not increase uniformly across risk deciles. Adjusting for observables drives all of the coefficients towards zero with little evidence of significant differentials across risk group conditional on observable covariates.

Figure 9 presents model results for the unemployment-to-employment and unemployment-to-NILF transition probabilities. Regarding transitions to employment, while the unadjusted differentials do not exhibit a uniform relationship between risk groupings and the likelihood of finding a job, the results that adjust for covariate differences across groups show uniformly lower job finding rates that are generally more negative for higher risk groupings. For the highest risk group, the adjusted differential relative to the bottom half of the risk distribution is actually slightly larger in magnitude than the unadjusted differential.

We do not see a uniform relationship between the likelihood of exiting the labor force from unemployment and the risk of criminal justice involvement in the unadjusted models. However, a clear pattern emerges once we condition on observable covariates, with the likelihood of leaving the labor force increasing uniformly with risk groupings. To be precise, in the adjusted model

[7] Arguable, controlling for four-way interaction terms between age, education, gender and race/ethnicity may certainly control away the effect of criminal justice involvement to the extent that many of the cells will have proportion with current or past involvement near one and others near zero. Given the structure of the ACS summary file that I created and discussed above, the regression is basically making use of the variance across states and overt time within the cells defined by the four-way interactions. Nonetheless, there are likely very large differences in factors that we cannot observe within these cells. Hence, here I am opting to err on the side of over-inclusion in the control vector.

unemployed people in the highest risk grouping are roughly 1.7 percentage points more likely to exit the labor force within a month relative to people in the bottom half of the risk distribution.

Finally, Figure 10 shows model results for transitions from out of the labor force towards unemployment (the top figure) and into employment (the bottom figure). The unadjusted results suggest that higher risk persons are more likely to move from out of the labor force into unemployment. Controlling for observables however yields the opposite pattern, with high-risk non-labor force participants the least likely to transition into active job seeking (i.e., unemployment). Regarding movement directly from out of the labor force into unemployment, higher risk persons are generally less likely to make this transition though in the unadjusted results the relationship is not uniform. In the adjusted results, however we see a clear pattern: increases in the risk of criminal justice involvement is associated with a reduction in the likelihood of transitioning from out of the labor force directly into a job.

This analysis demonstrates some important differences in employment dynamics that are not explained by the demographic and human capital variables observed in U.S. household surveys. People at high risk of involvement with the criminal justice system transition from unemployment to employment at a discreetly lower rate, and exhibit greater movement from unemployment towards being out of the labor force. Moreover, we observe that once out of the labor force, the highest risk workers appear to be the least likely to transition directly into employment as well as into unemployment. Hence, being out of the labor force appears to be more of an absorbing state. To assess the importance of these regression-adjusted differentials in explaining the relatively poor employment outcomes of the high-risk group, Table 3 uses simple steady-state calculations to simulate the effects of eliminating some of these regression-adjusted gaps. The first column reproduces the steady-state implied by the empirical transition matrix for workers in the highest risk group (where the matrix is estimated using the entire pooled sample for our study period). The second column presents the steady-state distribution across employment status categories after eliminating the differences relative to the low-risk group in the unemployment-to-employment and unemployment-to-NILF transition probabilities.[8] The final simulation further eliminates the regression-adjusted gaps in transitions from NILF to

[8] To do this, I increased P_{UE} and reduced P_{UU} by the absolute value of the regression adjusted difference in P_{UE} between decile 10 and the bottom half of the distribution, and increased P_{UU} and reduced P_{UNILD} by the regression adjusted difference in P_{UNILD}.

unemployment and NILF to employment.[9] The table also presents the steady-state unemployment rate for all three steady-state distributions.

Eliminating the transition probability out of unemployment leads to a small increase in the steady-state employment rate (of 1.1 percentage points), a very small decrease in the proportion unemployed, and a nearly half-point decline in the unemployment rate for the highest risk group of workers. Further neutralizing the differences in the regression-adjusted transition probabilities out of NILF causes a large change in the employment rate, a decline in the proportion out of the labor force, and a larger decline in the unemployment rate (9 percent relative to 9.8 based on the empirical transition probabilities).

This exercise suggests that the relatively poor employment outcomes of people with higher levels of criminal justice involvement is driven primarily by observable human capital and demographic characteristics. However, to the extent that the residual disparities I measure above can be attributable to criminal justice involvement, addressing stigma, employer concerns about liability, the lack of connections or whatever other mediating factor might be aggravated by a criminal histories, could substantially increase the employment-to-population ratio for this group. The results in particular suggest that discouraged workers in high-risk groups may be more likely to leave the labor force for longer time periods.

4. Policies That Would Improve the Employment Prospects of People at High-Risk of Involvement with the Criminal Justice System

The analysis thus far demonstrates the precarious employment prospects of people at high risk of involvement with the criminal justice system. This appears to be driven in large part by factors that are likely not directly caused by criminal justice involvement (for example, low relative educational attainment, the likelihood of experiencing labor market discrimination). However, the empirical results above as well as the discussion of existing literature suggests that these individuals face difficulties finding employment and are at high risk of leaving the labor market entirely.

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[9] The final simulations makes the adjusted discussed in the previous footnote, but also increases $P_{NILF,U}$, and decreases $P_{NILF,NILF}$ by the absolute value of the adjusted differences in $P_{NILF,U}$, and increase $P_{NILF,E}$ and reduces $P_{NILF,NILF}$ by the absolute value of the regression-adjusted differences in $P_{NILF,E}$. The exact values of the differentials (and consequently the adjustments to the specific transition probabilities) are reported in the notes to Table 3.

Policy prescriptions aimed at improving the employment prospects of people with criminal histories often focus on addressing the stigma associated with a criminal history, alleviating some of the liability concerns of employers, and offering incentives that may tip the scales towards hiring such applicants. The role of criminal histories, how they are used, who can access them, and when in the review process they should be considered has received much attention. While indirectly related, better research pertaining to recidivism risk, in particular how the recidivism risk evolves with time and varies with the sampling frame, would likely permit better and more fair use of criminal histories in employment decisions in a manner that would reward desistance.

Before discussing some of these issues, it is worth noting the growing body of evidence showing the relationship between material poverty and adult criminal justice involvement as well as the burgeoning literature demonstrating salutary effects of relatively less punitive juvenile interventions. As is evidenced by the patterns documented above, people involved with the criminal justice system are overwhelmingly poor or near poor. People leaving prison for example often have little more than a small amount of "gate money" distributed at release and the clothes on their back, and often enter prison with little wealth and low annual incomes. In fact, it is not uncommon for people to be homeless at the time of admission to a correctional facility.

While one might contend that this is not evidence of an effect of material poverty on criminal offending, there is indeed careful empirical research documenting effects of exogenous shocks to resources on criminal offending. For example, Bailey et. al. (2023) use variation in the roll out of the U.S. Food Stamps program across counties during the 1960s and early 1970s and find that people who were children in early-roll-out counties were less likely to be incarcerated as adults. Deshpande and Mueller-Smith (2022) use a regression-discontinuity design exploiting the higher likelihood of an eligibility review for SSI benefits at 18 (and a consequent loss of benefits) and find that losing SSI benefits is associated with a higher likelihood of being charged with income-generating criminal offenses.

Regarding juvenile interventions, there is experimental evidence indicating that restorative justice interventions (whereby youth must take responsibility for their actions and actively attempt to make amends with the crime victim) can substantially reduce future offending (Shemtov, Raphael and Skogg *forthcoming).* Experimental and quasi-experimental research on summer jobs programs documents lasting impacts on juvenile offending (Heller 2014) and even adult incarceration and mortality (Gelber et. al. 2016). Interestingly, Davis and Heller (2020) find evidence that the largest impacts are not for the highest risk youth, suggesting that targeted intervention may divert people entirely from interactions with the criminal justice system. Garces et. al. (2002) provide evidence that the Head Start early childhood education program reduces later life criminal offending. Hence, there are interventions that choke off the labor market challenges faced by those with criminal histories by preventing criminal offending in the first place.

We should also note that the evidence presented above strongly suggests that people with criminal histories benefit from a strong labor market and suffer the most when the economy is in recession. Moreover, better employment prospects are associated with less offending. Several researchers have demonstrated that recidivism rates for those being released from prison are lower for individuals released into strong local labor markets (Raphael and Weiman 2007, Schnepel 2016, Yang 2017), with recidivism particular sensitive to the availability of employment opportunities in construction and manufacturing (Schnepel 2016). In addition, there is a large literature focusing specifically on the reentry transition and the importance of workforce intermediaries in aiding people who are leaving prisons to transition into formal employment (see Raphael 2011 for a review of this literature).

These issues pertaining to the determinants of offending and the reentry transition are certainly important and receive great attention from researchers and policy makers. Here, I will focus the remainder of the discussion on policies intended to improve the employment prospects of the very large population of adults in the U.S. with criminal histories, many of whom have not offended for years and who would benefit from more effective efforts to alleviate the barriers they face in the U.S. labor market. I discuss two broad sets of policies, one of which focuses on mitigating the negative signal associated with a criminal history and the other aimed at officially certifying rehabilitation and reapportioning the risk associated with hiring someone with a criminal history away from employers.

A. Ban-the Box

Employers frequently ask about criminal histories when hiring new employees (Raphael 2011; Society for Human Resource Managers 2010). While blanket restrictions on hiring people with criminal histories is prohibited unless required by federal law, the Equal Employment Opportunity Commission (EEOC) advises that criminal histories may be used in screening applicants to the extent that the screen is used consistently and that the content of one's criminal history is substantively related to the ability of the applicant to perform the job in question (EEOC

2012). Concerns that employers see nothing other than the criminal history when screening an applicant (and do not weigh criminal history against other factors) have led many states and cities to pass laws prohibiting questions on initial applications pertaining to criminal history and postponing the consideration of criminal history until later in the review process (such as once a conditional offer has been made). There are currently 35 states and over 150 cities that have some version of a "Ban-the-Box" (BTB) law that either applies to all employers, public sector employers, or public sector employers as well as private sector employers that contract with the public sector (Avery 2019). In prior work, I provide an extensive review of the empirical research on the effects of BTB (Raphael 2021). Here I provide a succinct summary of what we have learned to date.

By delaying when a criminal history is considered, BTB laws are intended to counter stigma and encourage employers to perform more individualized assessments. Ideally, this would give applicants with criminal histories a chance to highlight strengths that may mitigate the negative effect of a criminal history. If discrimination is driven by misperceptions about people with criminal histories, BTB may counter Beckerian "taste-based" discrimination, increase the pool of employers willing to hire people with criminal histories, and perhaps cause a market-wide narrowing of the employment and earnings penalties associated with having a criminal history (see Becker 1971; Charles and Guryan 2008). To the extent that concerns pertaining to differential work readiness, potential legal liability, difficulty procuring employee liability insurance, legislatively-mandated hiring prohibitions and other such factors are legitimate, delaying the consideration of criminal histories may have little impact on hiring outcomes while increasing screening costs for employers.

Several researchers have explored the possibility that suppressing information about criminal history may harm the employment prospects of applicants without criminal histories who come from demographics groups that employers believe have a high likelihood of having a criminal history. Models of statistical discrimination predict that employers concerned about the criminal histories of potential employees will assess individual applicants based on both individual as well as perceived group characteristics (Phelps 1972; Altonji and Pierret 2001; Bjerk 2008), a fact that may potentially harm the employment prospects of applicants from specific demographic groups.

In Raphael (2021), I provide an extensive review of (1) studies that estimate the direct effects of BTB laws on people with criminal histories, (2) studies that explore whether BTB leads to greater statistical discrimination against minority applicants, and (3) studies that explore the effects of other employer screening practices such as credit checks, and drug testing. I conclude that there is some evidence that BTB may improve employment prospects of applicants with criminal histories in the public sector (Craig 2021). However, there is little evidence of any benefits in terms of access to private sector jobs (Rose 2020). On the other hand, there is strong evidence that restricting employer access to criminal history records leads to statistical discrimination that adversely harms the employment prospects of Black workers, Black men in particular (Agan and Starr 2018; Bushway 1998, 2004; Doleac and Hansen 2020; Holzer, Raphael and Stoll 2006). Moreover, there is evidence that formal skill testing during applicant screening (Autor and Scarborough 2008), occupational licensing requirements (Blair and Chung 2018), and applicant drug testing (Wozniak 2015) tends to improve the likelihood that minority applicants are hired, suggesting that in the absence of objective information employers discriminate on based on inaccurate subjective assessments.

Hence, the evidence to date suggests that BTB is not a panacea, may have little impact on the hiring rates of people with criminal histories, and likely harms the employment prospects of people without criminal histories in the high-risk demographic groups that we studied above.

Despite these disappointing findings, employers and other non-criminal justice decisionmakers could certainly use better guidance on how to consider criminal histories when making hiring decisions, and providing this information may in many instances allay concerns pertaining to misconduct on the job. It is probably the case that few employers can accurately assess the recidivism risk of someone with a criminal history, and the existing readily available estimates from the Bureau of Justice Statistics (Langan and Levin 2002; Durose, Cooper, and Snyder 2014; Alper, Durose, and Markman 2018) are based on prison release cohorts that (1) are disproportionately comprised of people with lengthier rap sheets relative to the broader population of people with prior felony convictions, and (2) oversample people who are likely to serve multiple terms in prison. Not surprisingly, recidivism studies that estimate the recidivism risk for people who have ever been to prison (for example, Rhodes et. al. 2016; Kalra et. al. 2022) find recidivism rates that are as much as 20 percentage points lower relative to recidivism rates measured for specific release cohorts.

More generally, it is a well-known fact that the recidivism hazard rate drops sharply with time since the last conviction (with allowance made for time incapacitated due to an incarceration spell). Blumstein and Nakamura (2009) using a sample of people arrested for the first time in the state of New York for burglary, aggravated assault, and/or robbery find that the post-conviction arrest hazard drops to the arrest hazard for the general public (accounting for age) after 3.8, 4.3, and 7.7 years (respectively). In fact, most recidivism occurs within three-years of conviction (for those sentenced to probation) or release (for those who serve a prison or jail term). Coupled with the fact that the majority of people who serve time in prison never return (Kalra et. al. 2022), this suggests that there is a large population of people with criminal histories who have essentially desisted from criminal offending, yet still face stigma when seeking employment. One could certainly imagine crafting policy that officially recognizes a lengthy period of desistance by either sealing one's record or formally declaring someone rehabilitated with attendant implications for rights in the application process and perhaps relieving employers of legal liability.

B. Certificates of Rehabilitation and Mechanisms for Shifting Risk from Employers

Employers inquire about applicant criminal history for a number of reasons. To start, some may believe that prior convictions signal low skills, lack of job readiness, potential dishonesty, and other problematic issues that render the employee less effective. Beyond this information, employers may fear legal liability in the form of a negligent hiring lawsuit or damage to their reputation should an employee harm a customer or a fellow employee. Finally, employers may find it difficult to insure employees with criminal histories both for employee misconduct as well as for accidents that my occur during normal business operations. Given these considerations, it is not surprising that over 70 percent of individuals who have searched for a job in the past ten years indicate that they were asked about their criminal histories (Denver et. al. 2018).

While research on the effects of alleviating employer risk is limited, there are several recent contributions that suggest that this may be a particularly effective way of boosting the employment prospects of those with criminal histories who have indeed desisted from offending. For example, Cullen, Dobbie, and Hoffman (2023) evaluate an experiment of employer hiring behavior aimed at (1) gauging employer willingness to hire people with criminal histories, (2) assessing the determinates of this willingness, (3) explore the relative efficacy of various incentives to hire, and (4) assess whether the provision of accurate information regarding performance may counteract the negative stereotypes that may guide employer hiring decisions. Participating employers post short-term jobs on a hiring platform that screens applicants for potential employers and offers short-term jobs to all applicants who meet the requirements on a first-come, first-serve basis. In the context of this particular market, an employer agreeing to hire someone with a criminal history under various experimental conditions is effectively committing to hire someone without the ability to further review the application. The authors randomly assign employers to various treatment groups defined by a percentage wage subsidy, differential provision of insurance against theft and other liabilities, and groups defined by the provision of targeted screening (for example, screening for arrests and convictions within the past year).

The authors documents that only 39 percent of employer indicate that they would hire someone with a criminal history, absent a wage subsidy, theft/liability insurance, or additional information from a screen. In terms of heterogeneity in this baseline rate, 68 percent of employers facing difficulty filling positions indicate that they would hire someone with a criminal history, suggesting that such applicants have better chances in a tight labor market. In addition, employers with lower value inventory as well as employers who are filling position where there is no customer contact, are more willing to hire. While wage subsidies generally increase the willingness to hire, the effects are modest. For example, relative to the baseline willingness of 39 percent, a 10 to 25 percent wage subsidy increases willingness to roughly 41 to 44 percent. A 100 percent wage subsidy increases willingness to 54 percent. Hence, a tight labor market has larger effect on willingness to hire than a subsidy that fully offsets the wage bill.

In contrast, the study finds sizable effects of modest amounts of insurance coverage for loss through theft and other possibilities liabilities. For example, the study finds that $5,000 in crime and safety insurance increase the willingness to hire workers with criminal records by 12 percentage points (an effect similar in size to an 80 percent wage subsidy). They also find significant effects indicating that having successfully completed prior jobs on the platform (the platform mostly posts short-term, temporary positions) and having no arrests/convictions in the prior year increase the likelihood that employers will hire someone with a criminal history

These findings indicate that allaying employer concerns and in particular, limiting employer liability, may be particularly effective at increases demand for workers with criminal histories. Based on similar reasoning, Doleac (2016) argues for greater use of official signaling that someone has desisted from offending in the form Certificates of Rehabilitation (COR). McCann et. al. (2021) document the growing number of U.S. states that have some form of COR for people with prior conviction or people who served time in state prison. They define CORs as a certificate that "Provide(s) the recipient with the right not to be denied employment or licensure solely based on their criminal record." For a state to be classified as having a COR, they must meet three conditions:

- The state certification process must restore rights to employment or licensure,
- The state must provide a formal certificate indicating the restoration of rights,
- The state must have a clear process for rights restoration and certification.

New York has had formal mechanisms for rights restoration (the Certificate of Relief from Civil Disabilities and the Certificate of Good Conduct) for decades (Ewald 2016), while other states have more recently created such certifications.

Ohio's Certificate of Qualification for Employment (CQE), created by legislation in 2012, provides a particularly interesting example for the purposes of the discussion here. In addition to an official pronouncement of good behavior and restoration of the ability to procure some forms or professional licensing, the Ohio CQE indemnifies employers against negligent hiring lawsuits when hiring someone with a certificate.[10] Leasure and Stevens-Anderson (2016) conduct a resume audit study to assess whether the Ohio CQE alleviates the stigma faced by people with criminal histories and consequently increases the likelihood that they are able to procure employment. The authors sent fictitious resumes to 320 employers seeking workers for entry level jobs in the Columbus area in 2015. The resumes including the name of the applicant were exactly the same in all respects but one: the researchers experimentally varied the presence of a criminal conviction and whether the applicant had a CQE. Specifically, for one set of applications the applicant disclosed a year-old felony drug conviction, in a second set of applications the applicant disclosed a year-old felony drug conviction as well as possession of a CQE, while the third set of applicants did not disclose any prior convictions. The authors test for differences in the percent either receiving a job offer or being invited for an interview. Roughly 29 percent of applicants that did not disclose a criminal history had a positive response. Only 10 percent of applicants with a disclosed conviction but no CQE has positive response. In contrast, approximately 25 percent of applications with a criminal conviction and a CQE received a positive response. In fact, while the difference in call back rates relative to the group with no criminal history was statistically

[10] See https://drc.ohio.gov/systems-and-services/2-reentry-services/certificate-of-qualification-for-employment-cqe access on October 3, 2023.

significant for the conviction group without a CQE, the small difference for the conviction group with a CQE was not.

In a companion study, Leasure and Stevens-Anderson (2017) estimate the mitigating effects of time since convictions to assess whether a CQE effectively speeds up the triage that naturally happens with a lengthy period of desistance. Similar to their analysis of the CQE, the authors submit roughly 300 applications for entry level jobs in Columbus Ohio. Again, a control group of applicants does not signal a criminal history while the second treatment arm signal a year-old drug conviction. The key difference in this study is that the third treatment group reports a 10-year-old drug felony. The results for the first two treatment groups are the same, but the 10-year-old felony group has a positive response rate of roughly 20 percent.

In conjunctions, the results of the two studies indicate that a CQE has a larger effect on call back rates than 10 years of desistance from crime. While these studies involve very small samples, they do suggest that negligent hiring may be particular salient in the minds of employers in terms of impacting their willingness to hire someone with a criminal history.

5. Conclusion

The analysis and discussion above illustrate several findings. First, people at high-risk of involvement with the criminal justice system have markedly poorer employment outcomes that exhibit much greater sensitivity to the business cycle. While much of this is attributable to relative differences in human capital and demographics that are likely correlated with experiencing labor market discrimination, there is evidence of an impact of employer reluctance to hire on the ability to procure employment as well as evidence of a higher propensity to become discouraged and leave the labor force for relatively lengthy periods of time. These findings suggest that aspiring workers with criminal histories clearly benefit from a strong macroeconomy. However, these workers would also benefit from policies that would ease the transition into employment, perhaps through greater use of workforce intermediaries who build credible relationships with employers over time and who may be able to bridge the information gap about potential applicants.

Efforts to restrict access to information regarding criminal histories does not seem to improve the employment prospects of those with records, and may harm the employment prospects of those without from demographic groups perceived to have high levels of criminal justice involvement. Some research suggests that employers severely over-estimate the relationships between observable signals such as race and gender and criminal justice involvement (see for example the discussion in Agan and Starr 2018), rendering the consequences of asymmetric information in the hiring process particularly troublesome.

While the body of research into what factors would induce employers to hire people with criminal histories is thin, employer surveys as well as evidence from audit studies and other hiring experiments suggests that concerns over liability for the actions of an employee are of paramount importance. To the extent that this is true, a formalized process for certifying desistance and/or rehabilitation coupled with employer indemnification about negligent hiring may be a particularly fruitful tool for relieving the effects of stigma and enabling people with criminal histories to get on with their lives. Research and experimentation with such efforts, and in particular on implementation details that would increase their credibility with employers, should be a priority for policymakers interested in improving the employment outcomes of people with criminal history records.

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Table 1
Descriptive Statistics for Non-Institutionalized Adults 22 to 55 by Deciles of Group-Specific Institutionalization Rates

	Bottom five deciles	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10
Prop. of the institutionalized	0.038	0.035	0.061	0.106	0.186	0.576
Labor Market Status						
Employed	0.818	0.732	0.745	0.767	0.754	0.622
Unemployed	0.027	0.038	0.042	0.042	0.047	0.061
NILF	0.154	0.231	0.213	0.191	0.200	0.317
Unemp. Rate	0.032	0.049	0.053	0.052	0.058	0.089
Race/Ethnicity						
White	0.695	0.750	0.698	0.728	0.694	0.320
Black	0.053	0.098	0.147	0.090	0.049	0.396
AI/AN	0.004	0.002	0.007	0.009	0.010	0.017
Asian	0.107	0.032	0.032	0.017	0.015	0.006
Hispanic	0.142	0.118	0.116	0.156	0.233	0.261
Poor	0.085	0.148	0.164	0.160	0.184	0.314
Male	0.313	0.245	0.494	0.786	0.925	0.966
Age (mean)	39.294	40.119	39.303	40.674	37.720	36.061
U.S. Citizen	0.9003	0.967	0.9638	0.9221	0.9092	0.9405
Education						
<HS	0.0267	0.0303	0.0437	0.0906	0.1467	0.3304
HS grad/GED	0.1073	0.4604	0.506	0.5301	0.679	0.5541
Some college	0.1887	0.4049	0.3998	0.3577	0.1682	0.1139
Bachelors +	0.6773	0.1045	0.0505	0.0216	0.0061	0.0016
Disability						
Cognitive	0.024	0.055	0.060	0.065	0.075	0.100
Ambulatory	0.023	0.052	0.052	0.054	0.051	0.060
Ind. Living	0.019	0.046	0.047	0.049	0.056	0.069
Self-Care	0.009	0.021	0.022	0.023	0.025	0.031
Vision/hearing	0.020	0.034	0.039	0.044	0.043	0.048

Tabulates from the 2019 ACS. The sample is limited to people 22 to 55. Deciles are defined by group level institutionalization rates weighted by population. Groups are defined by citizenship status, state, gender, seven age categories, four education categories, and race ethnicity categories. The first row shows the proportion of institutionalized within each grouping. All other tabulations pertain to the non-institutionalized in the group. The sample is further limited to cells with at least 30 observations. Over 98 percent of the ACS observations are in a cell (defined by the dimensions above) with at least 30 observations.

Table 2
Labor Force Status Transition Probabilities for the Bottom Five Deciles and the Top Decile of the Institutionalization Risk Distribution

Panel A: Bottom Five Deciles

	Status$_{t+1}$			Implied steady-state or average employment state over sample period	
Status$_t$	Employed	Unemployed	NILF	Steady State	Actual
Employed	0.974	0.008	0.018	0.793	0.803
Unemployed	0.245	0.559	0.196	0.029	0.031
NILF	0.077	0.035	0.888	0.178	0.167
Unemployment rate	-	-	-	0.035	0.037

Panel B: Top Decile

	Status$_{t+1}$			Implied steady-state or average employment state over sample period	
Status$_t$	Employed	Unemployed	NILF		
Employed	0.953	0.024	0.023	0.699	0.727
Unemployed	0.225	0.581	0.194	0.076	0.081
NILF	0.070	0.066	0.864	0.226	0.193
Unemployment rate	-	-	-	0.098	0.100

Transition probabilities are tabulated using merged monthly Current Population Survey data for the period January 2000 through January 2020. Steady-state employment status are tabulated based on the empirical transition probability matrices. Actual distributions across employment state is the average proportion within each state for all months combined in the first month of the consecutive merged sample (ie., employment status in month *t* as opposed to month *t+1*).

Table 3
Simulated Steady-State Distribution of People at Highest Risk of Involvement with the Criminal Justice System After Eliminating Various in Key Employment Transition Probabilities

	Steady state based on empirical transition probability	Eliminating regression-adjusted gap relative to bottom half of risk distribution in $P_{U,E}$	Eliminating regression-adjusted gap relative to bottom half of risk distribution in $P_{U,E}$, $P_{U,NILF}$, $P_{NILF,U}$ and $P_{NILF,E}$
Employed	0.699	0.710	0.744
Unemployed	0.076	0.074	0.073
NILF	0.226	0.216	0.183
Unemployment Rate	0.098	0.094	0.090

The first column of figures presents the steady-state distribution of persons in the top risk decile implied by the empirical transition matrix presented in Panel B of Table 2. The second column of figures is the implied stead state when $P_{U,E}$ is increased by 0.0219275, and $P_{U,NILF}$ is reduced by 0.0164847, and $P_{U,U}$ is increased by the sum of these two changes. The final column of figures presents the simulated steady state when in addition to the modifications to the transition probability matrix made in the second column of figures, I make the following additional adjustments: $P_{NILF,U}$ is increase by 0.0067674, $P_{NILF,E}$ is increased by 0.0223247, and $P_{NILF, NILF}$ is reduced by the sum of these two amounts. All of the specific values are the regression adjusted differentials in the specific transition probabilities between decile 10 persons and persons in the bottom half of the simulated risk distribution.

Figure 1: Proportion in Institutionalized Group Quarters by Gender, and Race/Ethnicity Among People 22 to 55 Years of Age, 1970 through 2019

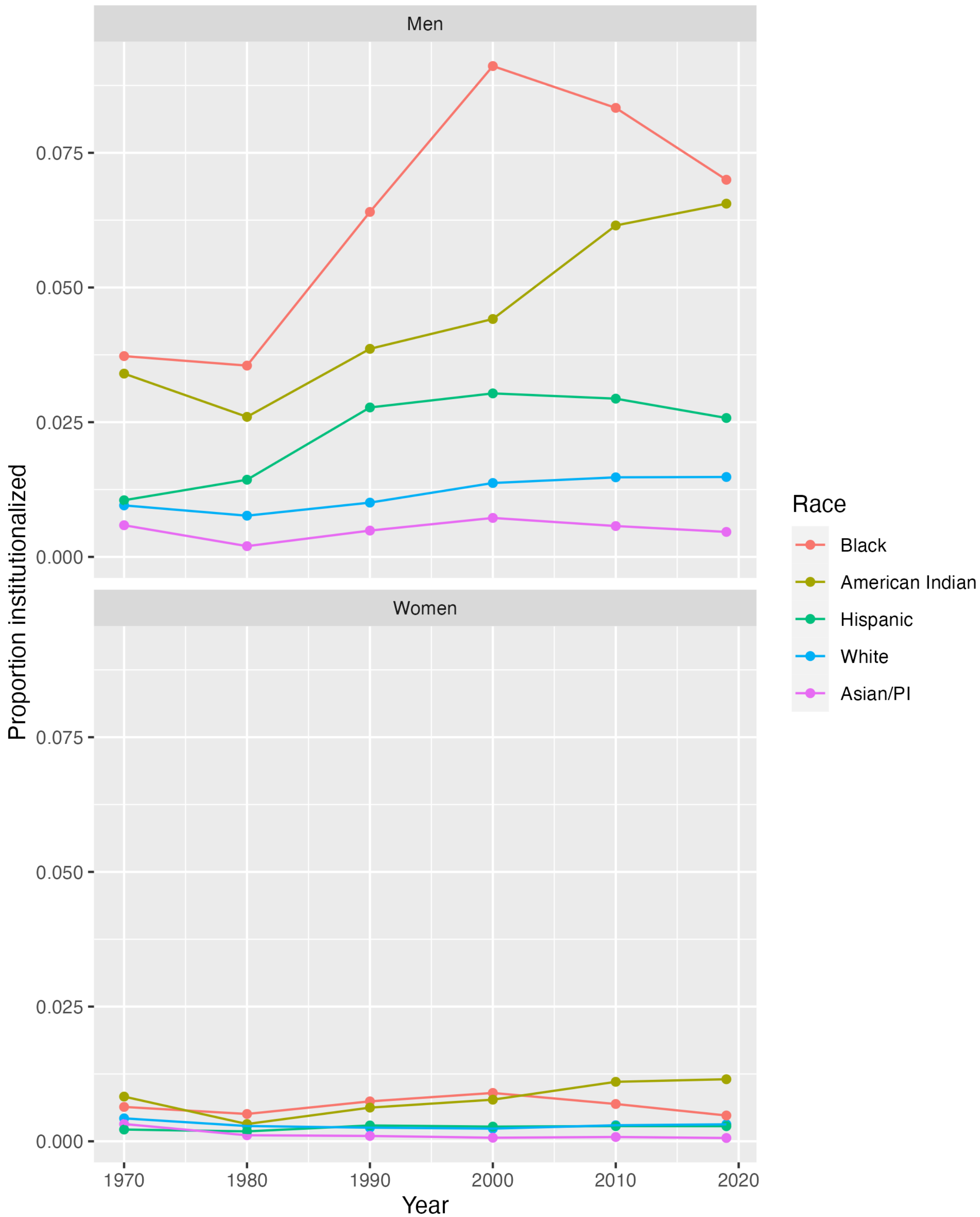


Figure 2: Proportion in Institutionalized Group Quarters by Gender, Race/Ethnicity, and Educational Attainment Among People 22 to 55 Years of Age, 1970 through 2019

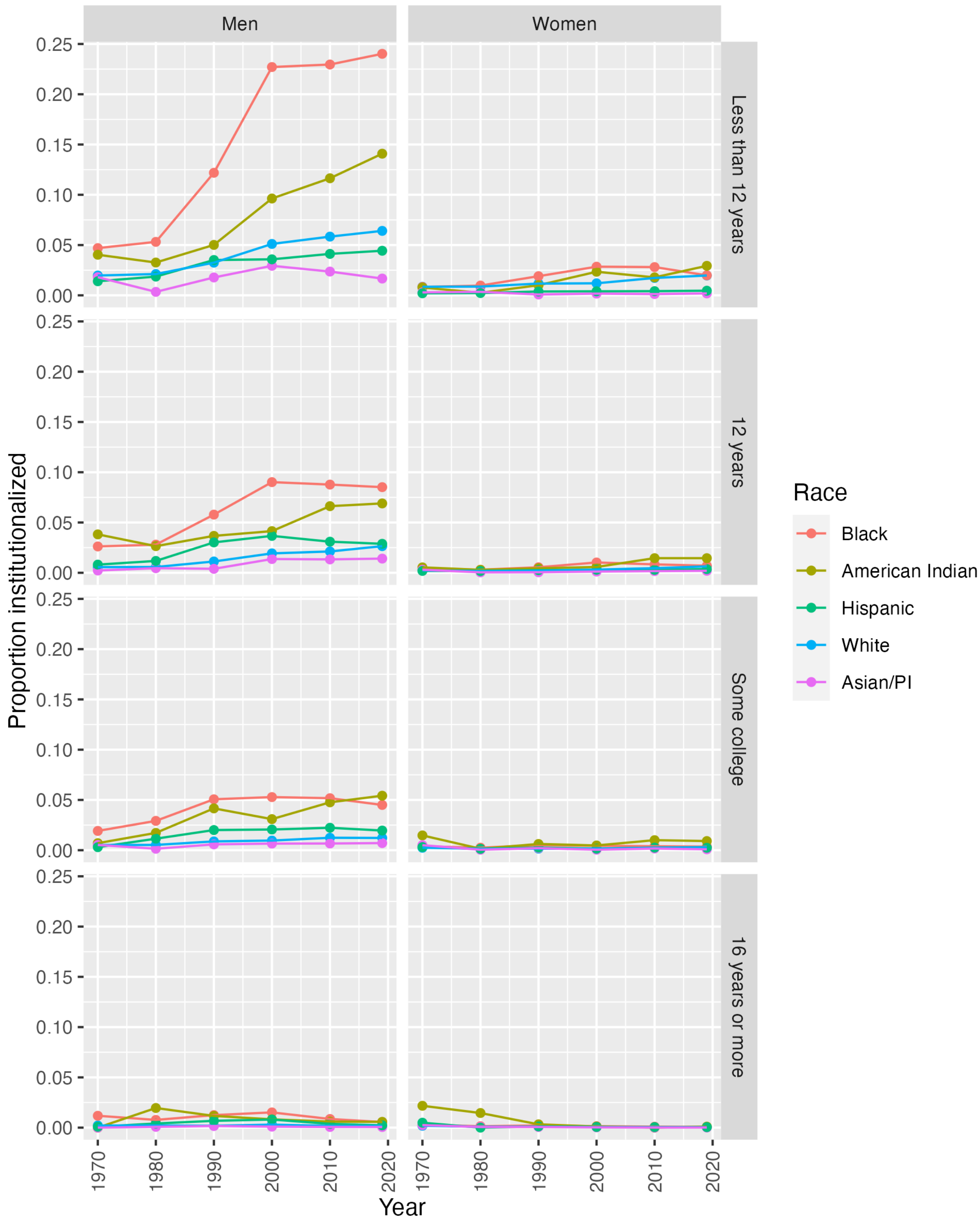
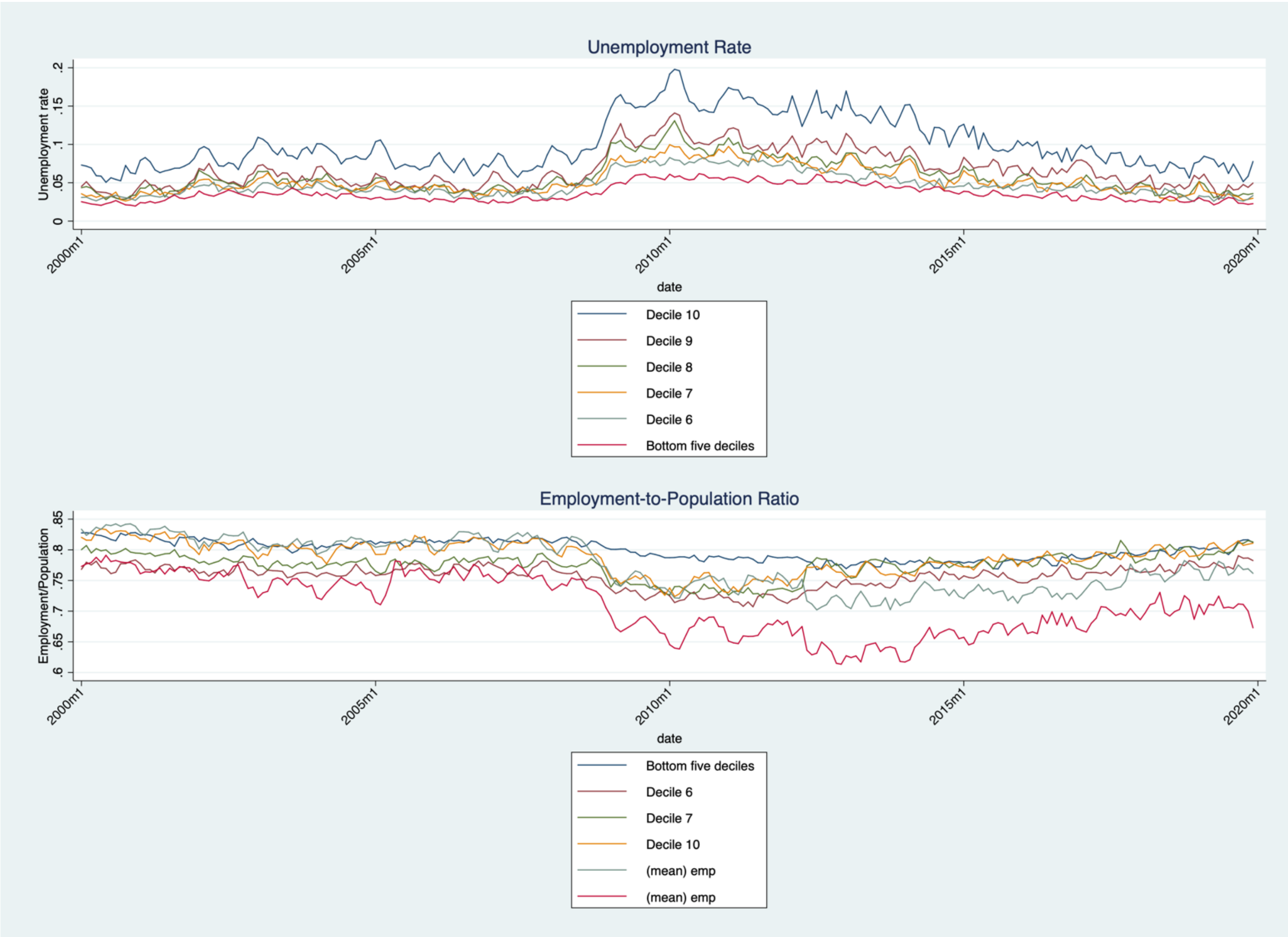


Figure 3: Monthly Unemployment Rates and Employment-to-Populations Ratios for Adults Ages 22 to 55 by Decile of Institutionalization Risk



Notes: Author tabulation from the Monthly Current Population Survey Files, January 2000 through January 2020.

Figure 4: Coefficient from Bivariate Regression of Institutionalization Risk Group Unemployment Rate on the National Unemployment Rate based on Monthly Data from January 2000 through January 2020

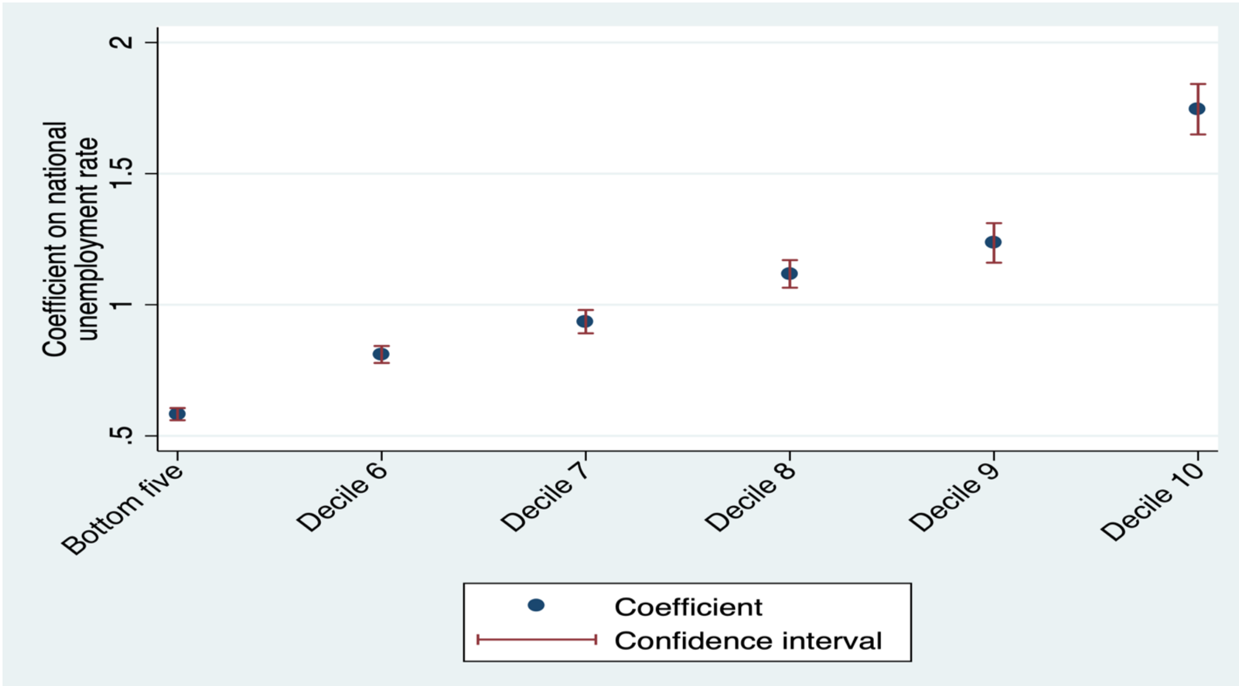


Figure 5: Monthly Job Leave and Job Gain Rates for the Top Risk Decile and The Bottom Five Deciles Combined

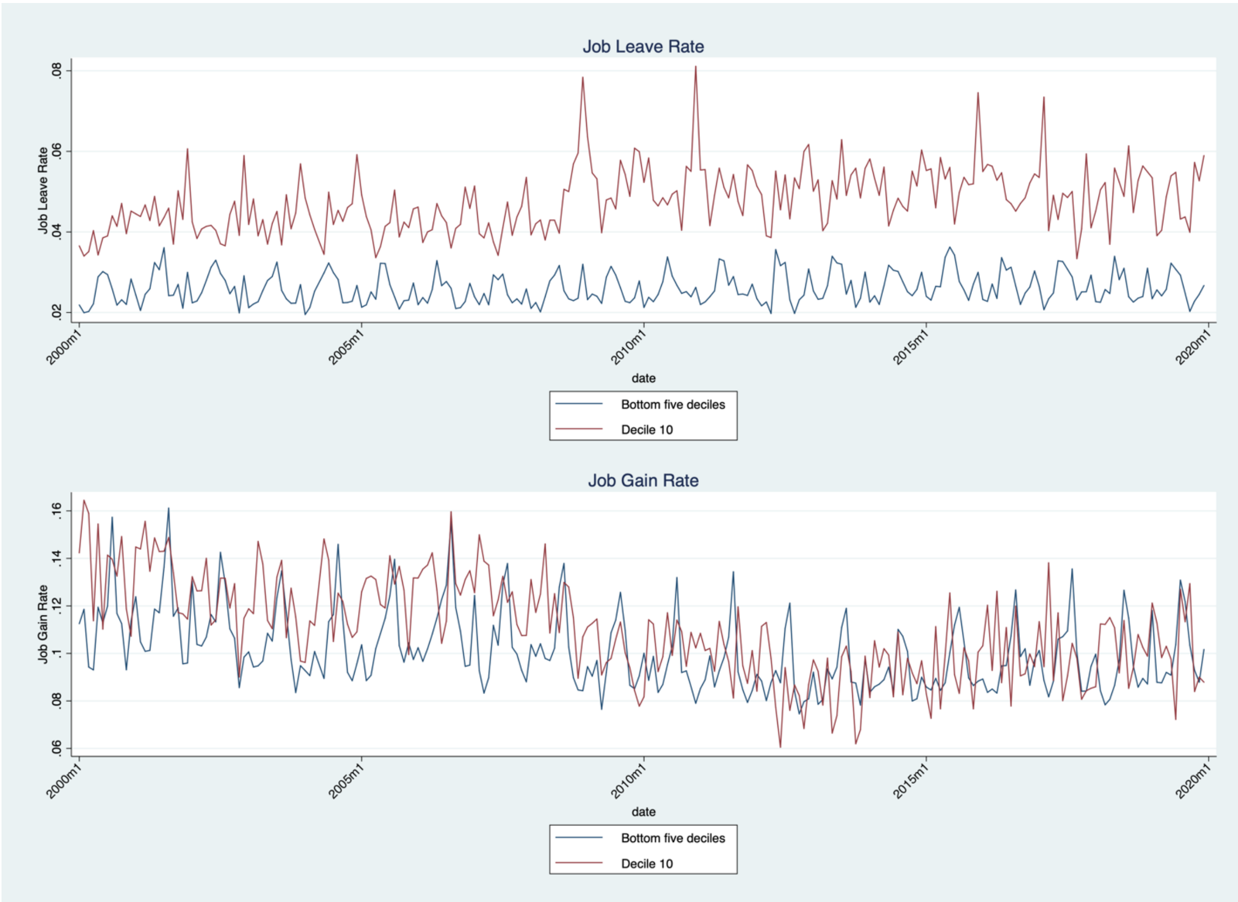


Figure 6: Coefficient from Bivariate Regression of Institutionalization Risk Group Monthly Job Leave Rates on the National Unemployment Rate based on Monthly Data from January 2000 through January 2020

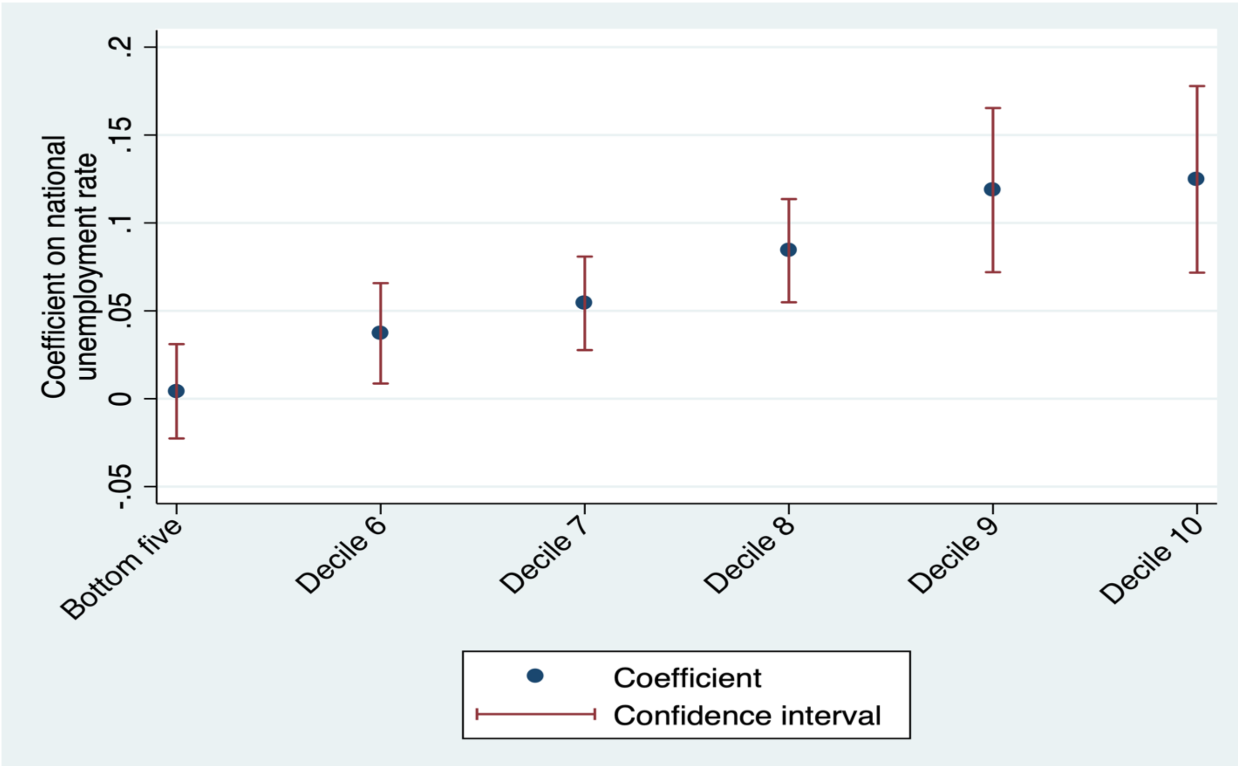


Figure 7: Coefficient from Bivariate Regression of Institutionalization Risk Group Job Gain Rate on the National Unemployment Rate based on Monthly Data from January 2000 through January 2020

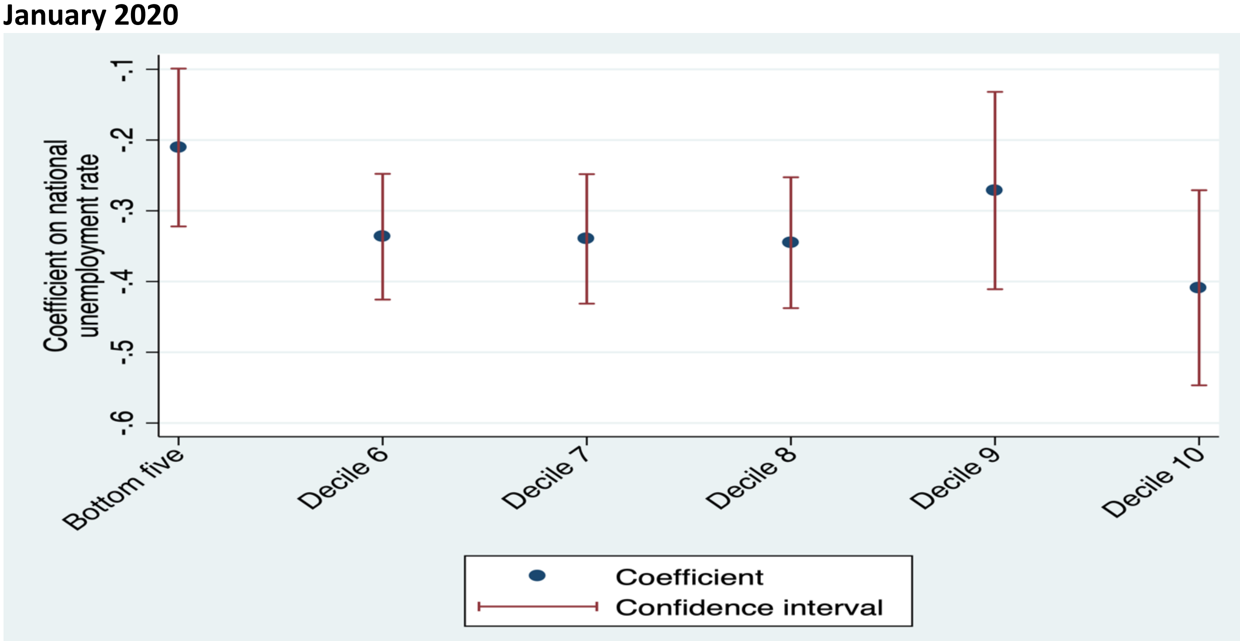
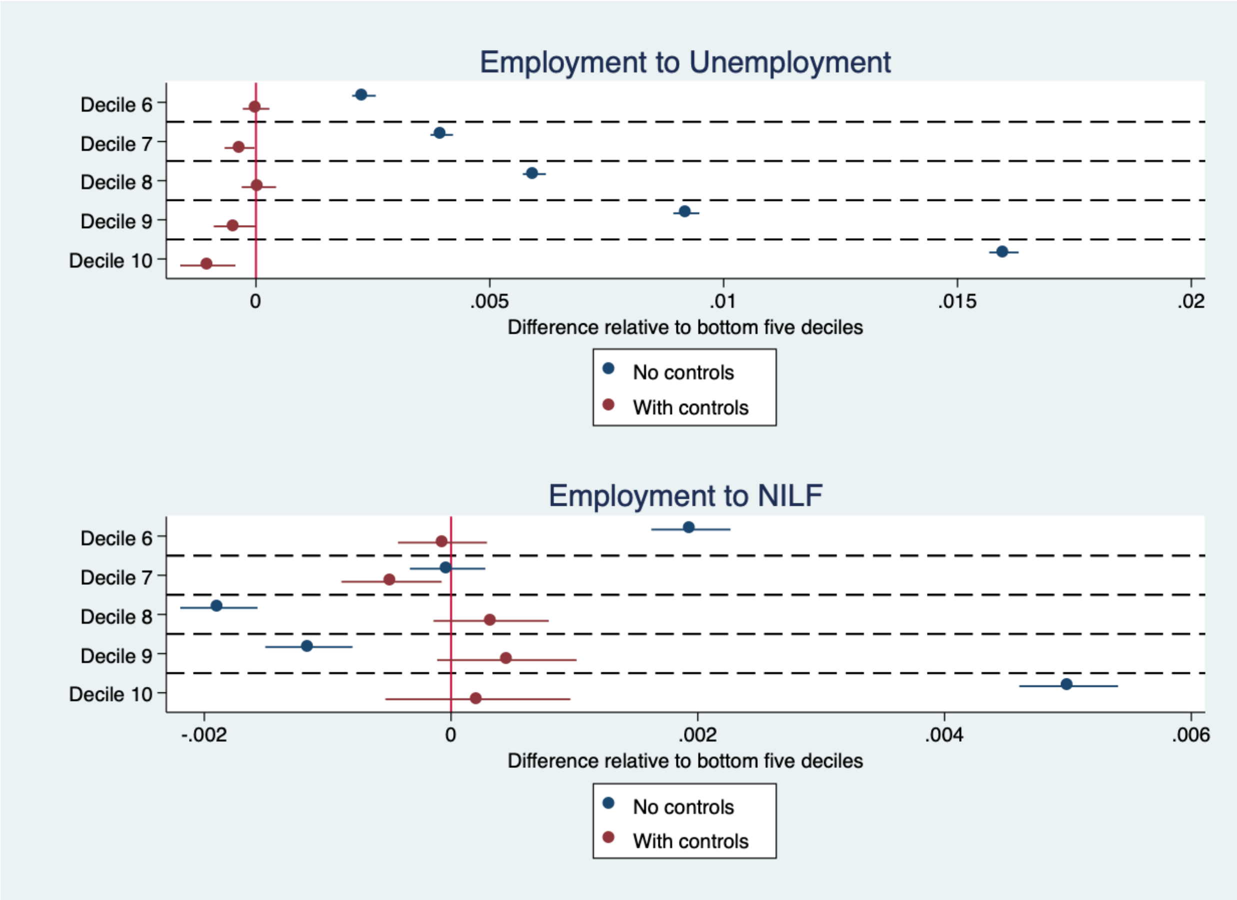
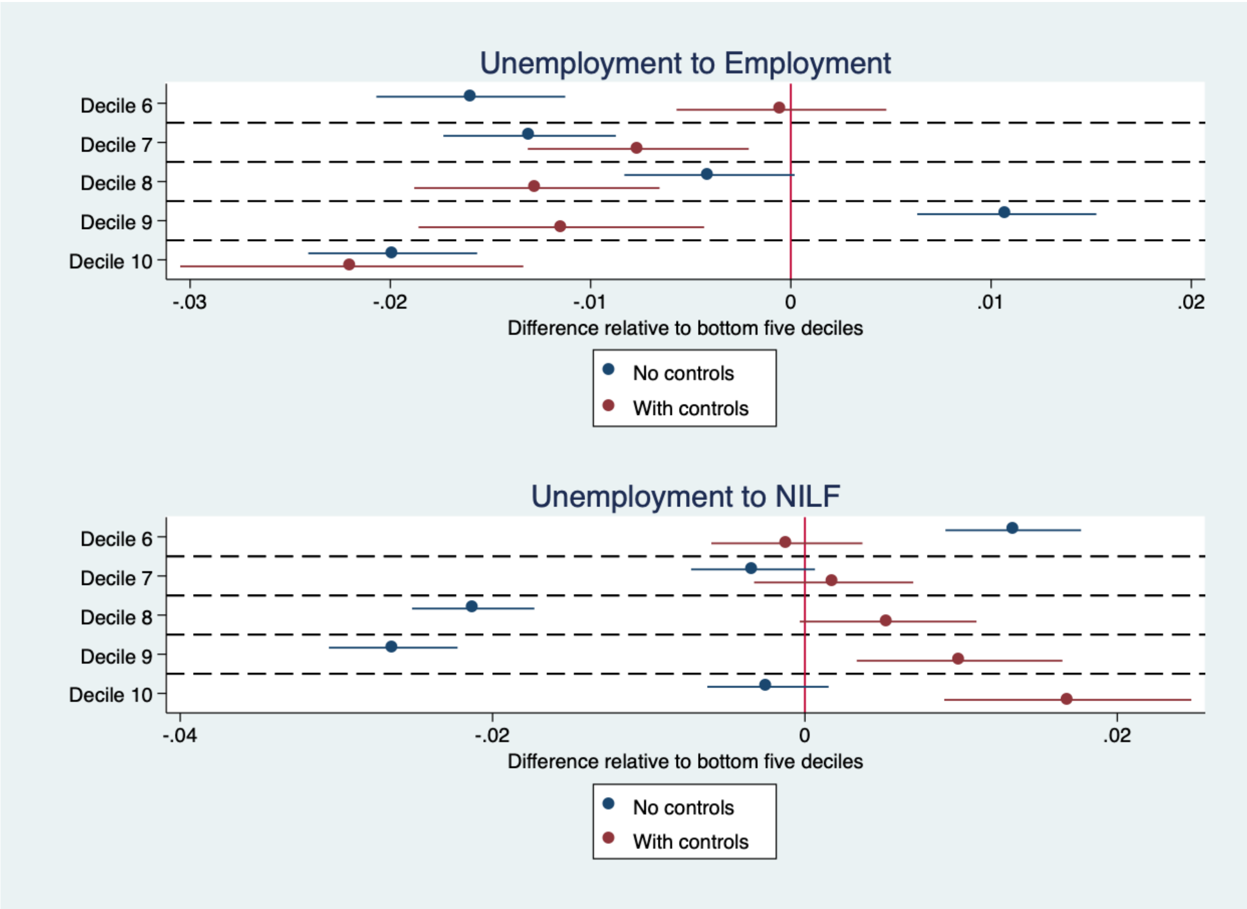


Figure 8: Difference in Employment-to-Unemployment and Employment-to-NILF Transition Probabilities for High Institutionalization Demographic Groups Relative to the Bottom Five Deciles: With and Without Covariate Adjustments



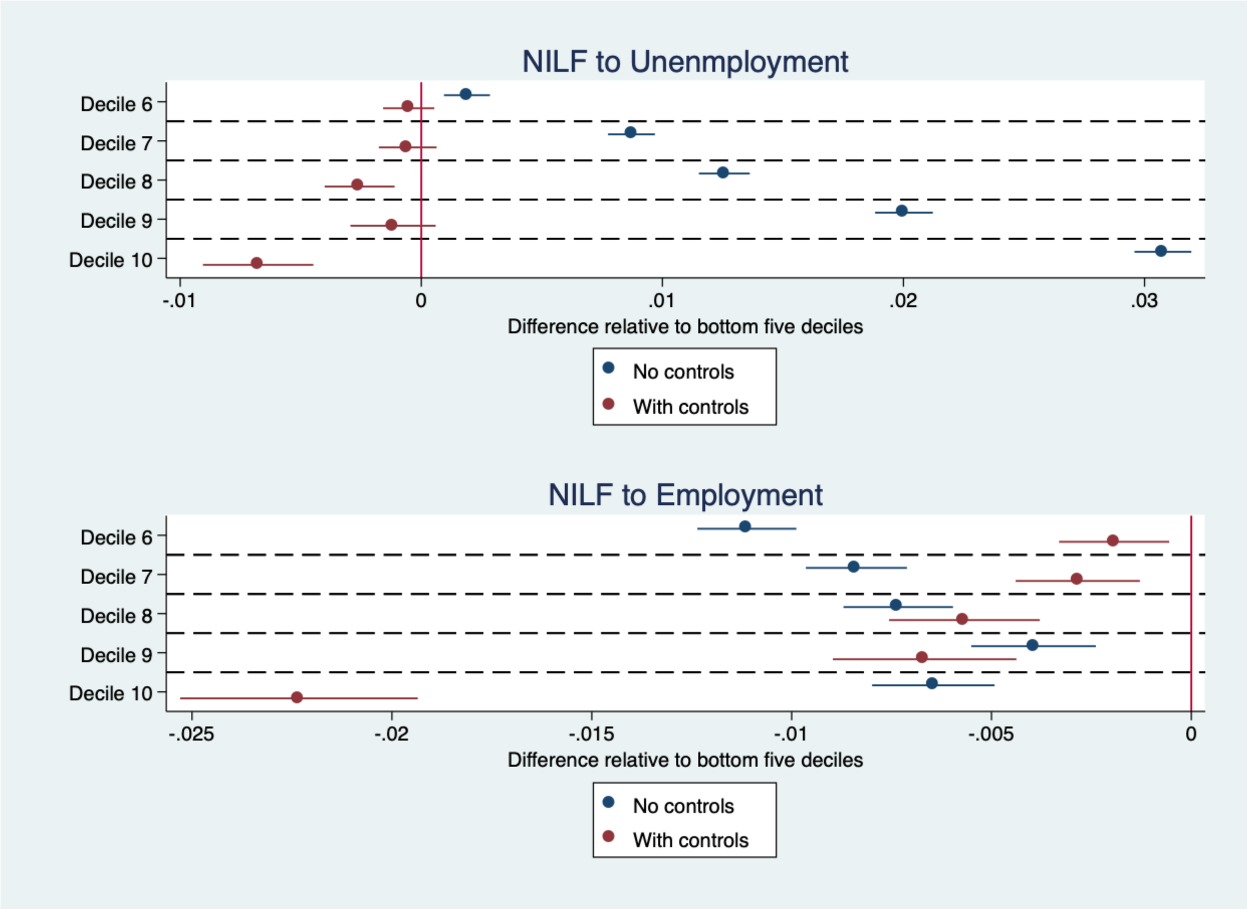
Notes: Markers in the figure show point estimates of the difference in the transition probability for a given decile relative to the bottom five deciles (with the line through marker denoting the 95 percent confidence interval). The models with control variables include year effects, calendar month effects, and base effects, all two-way interactions, and three-way interactions between a male dummy, seven age-group dummies, and four educational group dummy variables. The models are estimated using matched observations across months from the Current Population Survey for January 2000 through January 2020.

Figure 9: Difference in Unemployment-to-Employment and Unemployment-to-NILF Transition Probabilities for High Institutionalization Demographic Groups Relative to the Bottom Five Deciles: With and Without Covariate Adjustments



Notes: Markers in the figure show point estimates of the difference in the transition probability for a given decile relative to the bottom five deciles (with the line through marker denoting the 95 percent confidence interval). The models with control variables include year effects, calendar month effects, and base effects, all two-way interactions, and three-way interactions between a male dummy, seven age-group dummies, and four educational group dummy variables. The models are estimated using matched observations across months from the Current Population Survey for January 2000 through January 2020.

Figure 10: Difference in NILF-to-Unemployment and NILF-to-Employment Transition Probabilities for High Institutionalization Demographic Groups Relative to the Bottom Five Deciles: With and Without Covariate Adjustments



Notes: Markers in the figure show point estimates of the difference in the transition probability for a given decile relative to the bottom five deciles (with the line through marker denoting the 95 percent confidence interval). The models with control variables include year effects, calendar month effects, and base effects, all two-way interactions, and three-way interactions between a male dummy, seven age-group dummies, and four educational group dummy variables. The models are estimated using matched observations across months from the Current Population Survey for January 2000 through January 2020.