Locked Out of the Labor Force: The Rise of Criminalization and the Fall in Work

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**Research question**: how much has the rise in the share of Americans living in the community with a criminal record contributed to changes in the employment-to-population ratio?

**Contributions:**

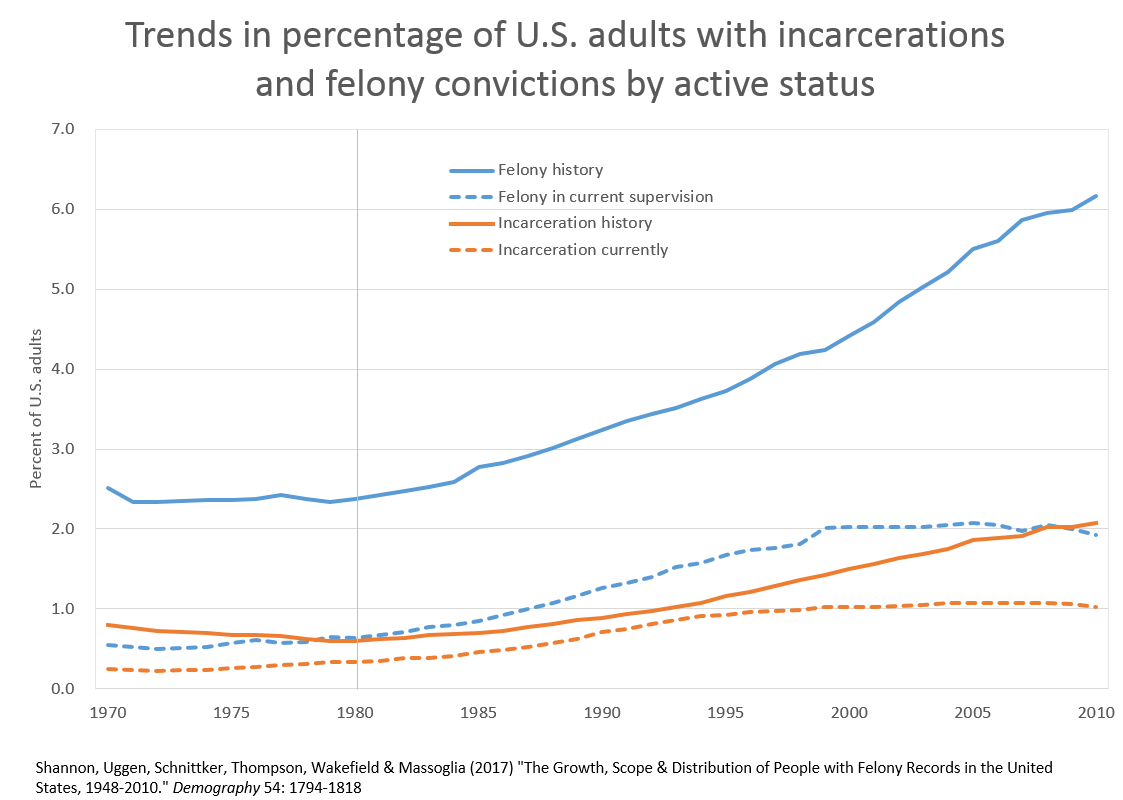
* Focuses on the connection between two first-order economic and policy issues
  + 3.8 percentage point rise in share of Americans living in the community with a felony record between 1980 and 2010
  + Employment-to-population ratio among prime-age (25-54 years old) adults with less than a bachelor’s degree.
* Leverages first state-year estimates of the share of adult population with a felony record (Shannon et al 2017).
* Estimates that a 1 percentage point rise in the share of adults with a felony record is associated with a 0.285 rise in the share of prime-age adults who are not employed.

**Introduction**

In the wake of the War on Drugs, the share of American adults living in the community with a felony record rose by an estimated 3.8 percentage points, from 2.4 percent in 1980 to 6.2 percent in 2010 (Shannon et al 2017). In levels, the number of American adults with past felony supervision increased from 3.9 million in 1980 to 14.5 million in 2010. This is the population that was previously convicted of a felony but now has exited all forms of felony supervision including incarceration, probation, or parole.

The rise among Americans in their prime working years, aged 25-54 years, is likely substantially larger than the 3.8 percentage point (pp) increase among all adults. Although estimates for age-specific subgroups are not available, most felony convictions were of young adults who, since then, paid their debt to society and aged into middle adulthood.[[1]](#footnote-1)

Figure 1



Most evidence has focused on the previously incarcerated rather than this larger population. Looney (2018) finds a large negative relationship between individual past incarceration and employment. Abraham and Kearney (2018) point out that because the share of formerly incarcerated is small, this channel cannot explain much of the overall decline in employment probability.

We focus on the role of having a felony record rather than being formerly incarcerated. This group is about three times larger (Shannon et al 2017). A felony record alone is a barrier to employment (CEA 2016). There are nearly 3,000 mandatory occupational license exclusions for individuals with a felony record (American Bar Association 2016). Employers are less likely to hire someone with a criminal record (Holzer 2007; Holzer, Offner, and Sorensen 2005; Holzer 2007; Pager 2003).

Although the direction of the effect is known, we offer the first evidence on the magnitude of its effect in the American labor market. Prior evidence was constrained by lack of data on the population with a felony history available below the national level. Our main contribution derives from studying the relationship between new state-year estimates of the felon-history share, built from the estimation machinery of Shannon et al 2017, and Current Population Survey state-year measures of engagement in the labor market. This enables state-level generalized difference-in-difference models to estimate the association between changes in the share of state populations with felony record to changes in labor market engagement over the period 1980 to 2010.

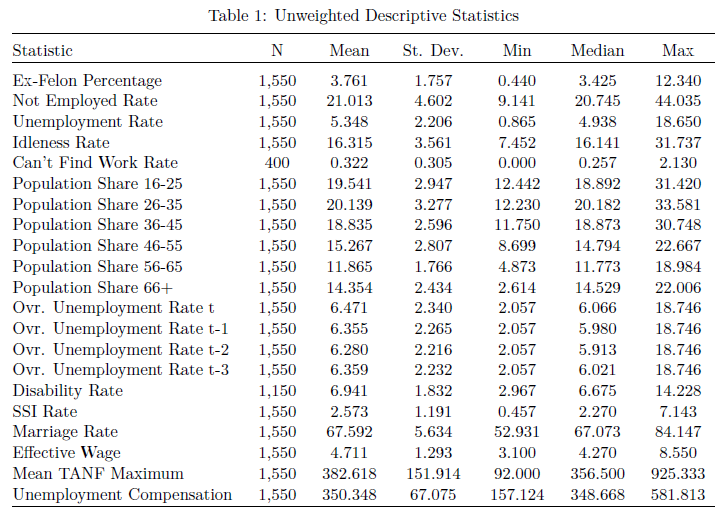
Eberstadt (2016) used an early version of the Shannon et al data for 1980, 1990, 2000, and 2010 to make a scatterplot of the share of adults with a felony record against the share of prime-age men not in the labor force across the 50 states in the 4 different years. He showed this pooled cross-section as evidence suggestive that the rise in felony share has caused a decline in prime-age male labor force participations. We go further by studying changes within state over time, using annual estimates for all the years, and subjecting the theorized relationship to statistical testing.

**Data and design**

*Population and sample:* we focus on the national population of civilian, non-institutionalized, prime-age (25-54 years old) adults sampled in the Current Population Survey from 1980 to 2010. This excludes incarcerated individuals.

*Predictor (Fst):* the share of the state-year adult (18 or more years old) population living in the community with a felony record no longer under felony supervision. This excludes incarcerated individuals and those on probation. Shannon et al (2017) pioneered creation of these estimates and reported state-level decennial estimates for 1980 through 2010. Noone had developed state-level estimates of this population before. State-representative surveys do not ask these questions. Shannon et al harness available aggregate data on flows into and out of conviction, imprisonment, probation, and death these of the stocks of people with a felony record based on. We use the underlying annual state-level estimates.

On average, 3.7 percent of adults have a felony record across these state-years (Table 1). The standard deviation is 1.6 percentage points, the minimum is 3.4 percent, and the maximum is 12.3 percent.



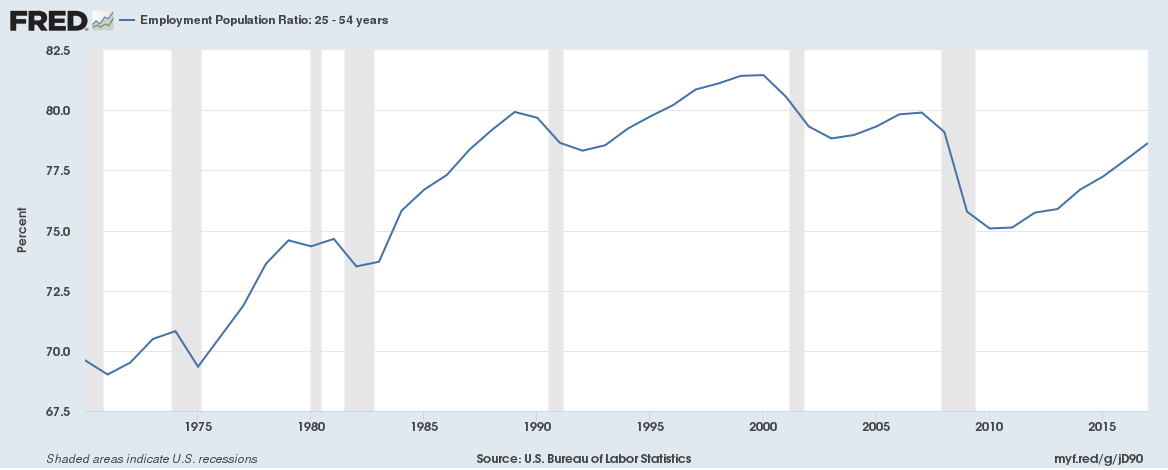
More-refined estimates by age or education are not available. Estimates by gender and race are available but noisier. We use these for robustness analysis.

Because the big rise in convictions happened in the mid-1980s and primarily among the young, focusing on outcomes among prime-age adults has the dual benefits of focusing on the group where (1) most of the change in felony-record share has occurred and (2) the fall in work is most troubling.

*Outcomes (Yst):* our primary outcome is the population’s rate of prime-age non-employment in each state and year. We conduct analysis at the state-year level in the 50 states across these 31 years, yielding 1550 observations. All state-year measures from the CPS are computed from individual observations using appropriate sample weights.

We focus on the not-employed rate instead of its more-conventional complement, the employment-to-population ratio (EPOP), simply for the expositional convenience of having an expected positive relationship between the dependent and independent variables. For reference, the figure below shows the trend in the conventional, annual prime-age (PA) EPOP between 1970 and 2017, starting before and ending after our study period.

Figure 2: Trend in annual national prime-age employment-population ratio



The PA not-employed rate, the complement to PA EPOP graphed above, averages 21 percent during our study period (Table 1). Nationally, the PA not-employed rate started at 26 percent in 1980, fell to its lowest point of 18 percent in 2000, and then rose back to 25 percent by 2010.

We also look at 3 supplementary outcomes, each among the prime-age population in a given state-year. First, the idleness rate, which deducts the share of the population in school or in unemployment (actively searching for work). This averaged 16.4 percentage points across state-years. Second, we look at the unemployment rate for completeness but we prefer to use unemployment rate as a variable to control for business cycle rather than as an outcome. Third, the share of people who are not in the labor force and report that this is primarily because they can’t find work. This is available only in 8 years, every other year since 1996, and has a very low base rate, averaging only 0.3 percentage points in our sample.

*Control variables* (*Xst*): to reduce omitted-variable bias by accounting for factors that could influence prime-age employment rates and which might also while also being correlated with the share of adults with a felony record, we also include control variables in some regression specifications. These include the following.

*Age-distribution*: employment rates vary by age, so changes in the states’ age distributions might drive both changes in the prime-age not-employed rate and the felony-history share. To control for changes in the age distribution, we use the CPS to compute state-year population shares for the age 16+ population in the following bins: 16-25, 26-35, 36-45, 46-55, 56-65, and 66+ years old. These shares sum to 100 in each state-year.

*Unemployment rates*: the business cycle has a strong influence on employment rates, as can be seen in Figure 1. To flexibly capture this, we use the state’s contemporaneous unemployment rate (U3) as well as three lags.

Models of labor force participation rates commonly control for both the age-distribution and multiple lags of the unemployment rate (Aaronson, Davis, & Hu 2012; Aaronson, Cajner, Fallick, Galbis-Reig, Smith & Wascher 2014).

*Supplemental Security Income (SSI) rate*: this is the rate of SSI recipients per 100,000 people in each state and year from the Statistical Abstract of the United States and the Social Security Administration’s Annual Statistical Report on the Social Security Disability Insurance Program (Shannon 2017). SSI provides income to adults who cannot work due to a disability. It averages 2.6 per 100,000 with a standard deviation of 1.2, a minimum of 2.3, and a maximum of 7.1. The rising rate of adults collecting disability benefits has received a lot of attention as a factor depressing employment rates. In our data, the national SSI rate rose from 2.5 per 100,000 in 1980 to 3.3 in 2010.

Our use of SSI differs from some papers, which have focused on the Social Security Disability Insurance (SSDI) rate (Aaronson, Cajner, Fallick, Galbis-Reig, Smith & Wascher 2014; CEA 2016). The SSDI rate among working age (age 15-64) Americans rose from 2.2 percent in the late 1970s to 4.6 percent in 2013, a 1.4 pp increase (Abraham & Kearney 2018). Note that this is less than half the 3.8 pp rise in felony-history share among all adults, which is likely below the rise among working age or prime age adults. We could add in the SSDI rate too but haven’t yet. Once individuals start collecting Social Security retirement benefits, they no longer collect SSI or SSDI.

*Marriage rates*: we compute marriage rates among the prime-age population in each state-year because marriage influences labor supply choices and a felony history may affect one’s desirability to potential spouses. This averages 67.6 percent in our sample.

Time-varying state policy could also influence not-employed rates and relate to the felony-history rate. The following three variables are taken from the University of Kentucky Center for Poverty Research (2017) and were chosen because of their potential influence on employment incentives.

*Effective minimum wage*: the maximum of the state and federal minimum wage each year.

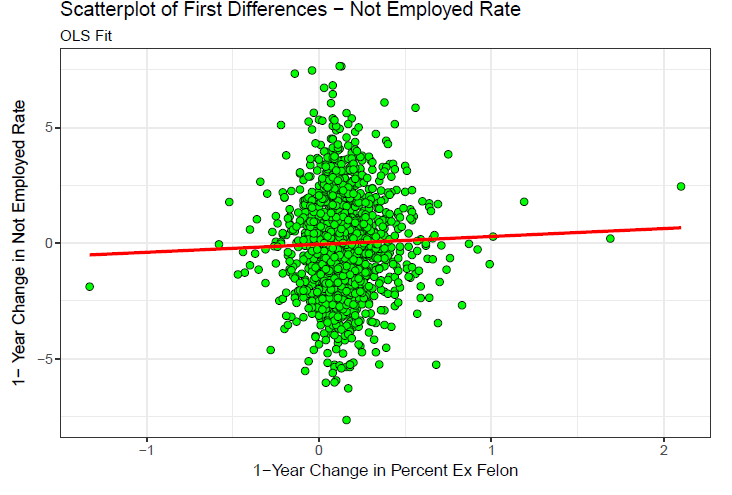
*Mean TANF maximum*: the mean of the maximum Assistance to Families with Dependent Children (AFDC) or Temporary Assistance to Needy Families (TANF) cash benefit available to a 2-person family, a 3-person family, and a 4-person family in each state-year.

*Unemployment compensation*: this a measure of the maximum weekly unemployment benefit by state-year taken from Michigan State University’s Correlates of State Policy dataset.

**Results**

Figure 1 presents a scatterplot of annual change in state felony-history share (*ΔFst* = *Fst - Fst-1*) against the change in the not-employed rate (*ΔYst*) across all the states and years between 1981 and 2010, along with a best-fit line. It suggests that increases in the state’s adult felony-history share are associated with increases in the share of prime-age adults who are not employed.

Figure 3: Scatterplot of annual changes in share of adults with felony history against change in the prime-age share not employed across states, 1981-2010, with best-fit line



To test this relationship more formally,we use a generalized difference-in-differences design that relates changes in states’ not-employed rate (*Yst*) over time to their change in share of adults in the community with a felony record (*Fst*). We include state fixed effects (γs) to capture average stable, unobserved influences on each state’s outcome and year fixed effects (γt) to capture average unobserved influences across states within each year.

The identifying assumption is that changes in unobserved influences within state are mean independent of changes in *Fst.* In order to enhance the credibility of this condition more credible, we will also condition on various sets of observable, time-varying state-year characteristics (*Xst*).

Table 2 presents regression estimates. Observations are weighted by outcome population. Specification (1) includes only state and year fixed effects in addition to the ex-felon percentage. It yields an estimated *β* of 0.53, significant at the 0.1 percent level, suggesting that a 1 percentage point rise in the felony-history share is associated with a 0.53 rise in the state’s prime-age not-employed rate or, equivalently, a 0.53 percentage point fall in the prime-age employment-population ratio.

Specification (2) adds controls for changes in the state’s age distribution. The estimated *β* falls to 0.34 and loses significance.

Specification (3) adds variables to control for changes in the policy and social environment. The variables are the SSI rate, the marriage rate, the effective minimum wage, the value of TANF benefits and unemployment compensation benefits. The estimate remains stable but not significant.

Specification (4) adds 3 years of lagged unemployment rates for the state’s full labor force in order to control for business cycle. These are important explanatory variables and substantially increase the share of variance explained and increase the precision of the estimated effect of felony-history share. The estimate of *β* = 0.34 is significant at the 0.1 percent level. An odd thing here is that the SSI rate has a significant negative coefficient, meaning a higher SSI rate is associated with more employment. In specifications (3) and (5), this is negative but not significant.

Specification (5) adds the contemporaneous unemployment rate and this single predictor adds a lot of explanatory power to the model, more than doubling the adjusted R^2. The felony-share coefficient estimate reduces to *β* = 0.285 but remains significant at 0.1%.

Increases in felony-history share appear to cause significant increases in the share of prime-age adults not employed.

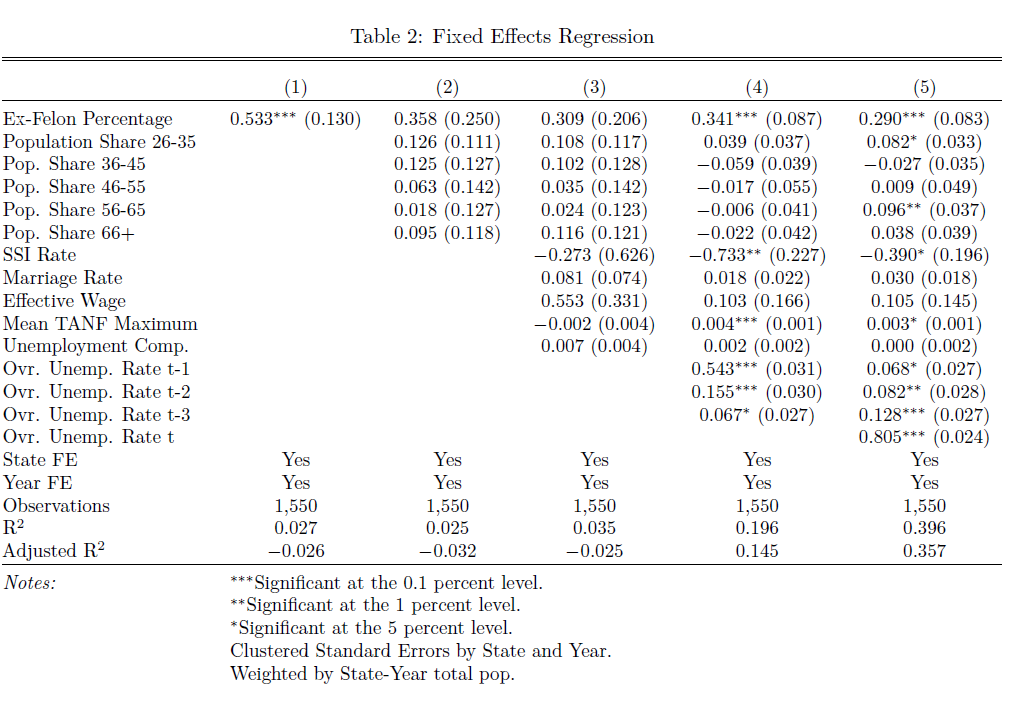


Table 3 uses alternative outcomes. Specification (1) analyzes the idle share. The idle are a subset of the not employed, those who are neither in school nor actively searching for work (unemployed). This analysis uses the Table 2: Specification (5), the richest one. The estimated 0.274 effect is very similar on idleness rate as on not-employed rate (0.285), suggesting that the bulk of the not-employed effect is due to idleness. In specification (2) we use unemployment rate as the outcome and follow Table 2: Specification (4) in omitting the contemporaneous overall unemployment rate as a predictor. A 1 percentage point higher felony-history share is associated with a 0.1 increase in the unemployment rate in this model. We use the Can’t Find Work rate as the outcome in specification (3). This is only available in 8 years and the estimate has the expected sign but is not significant.

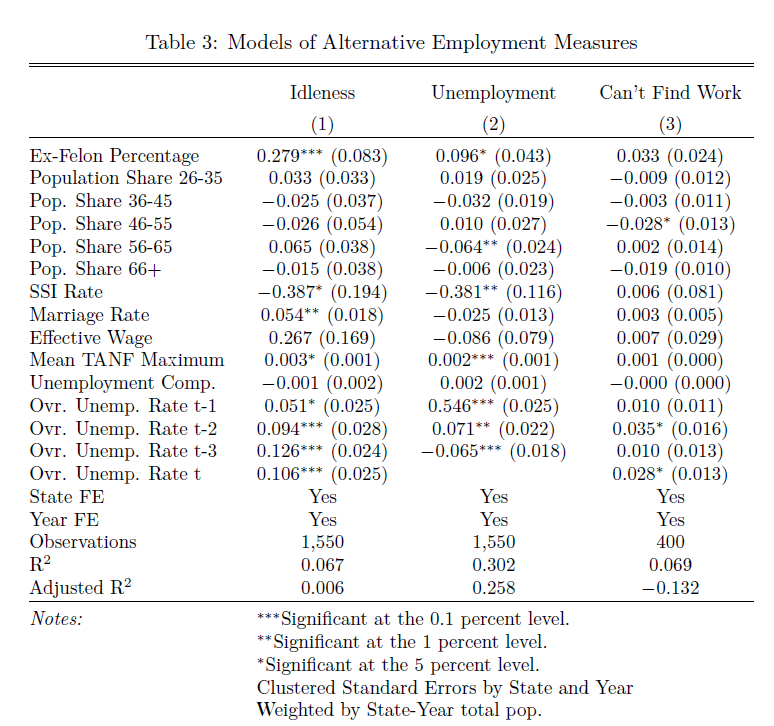
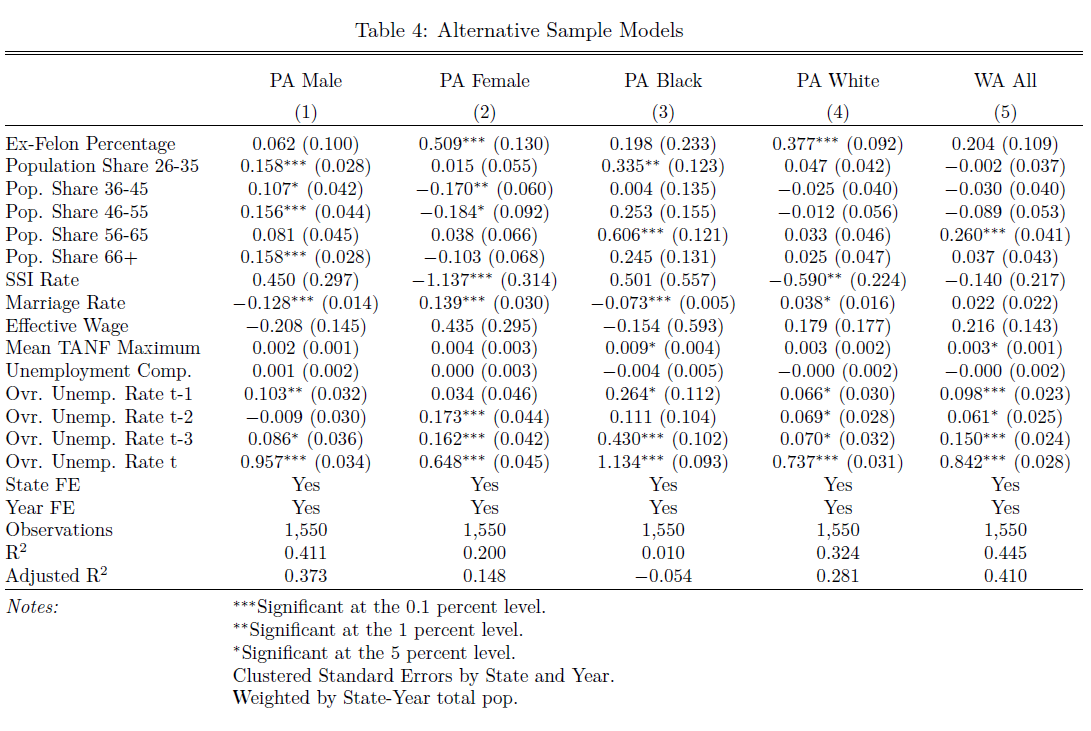
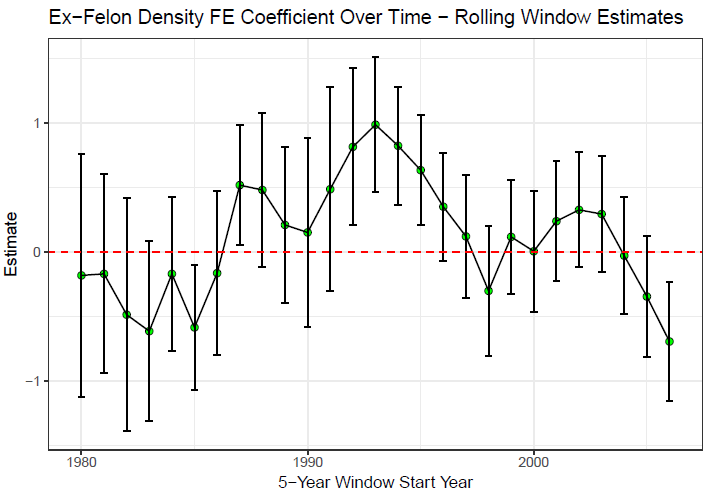
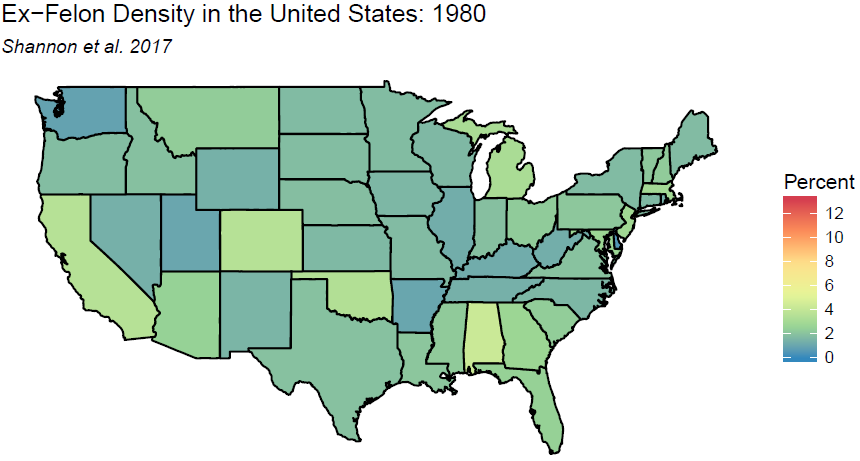


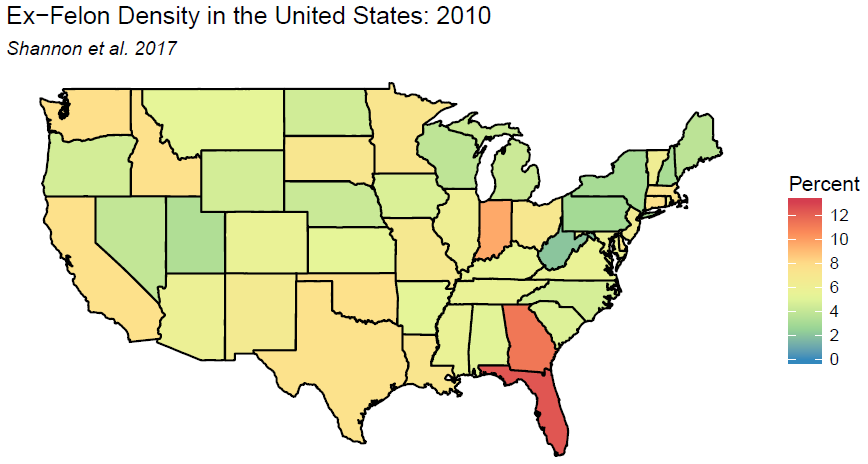
Table 4 reproduces the analysis of Table 2: specification (5) but using alternative subpopulations.



Estimated effects over time: plot point estimate and confidence interval for Table 2, final specification but estimated on rolling 10-year (5-year?) subsamples plotted with year on the horizontal and estimates on vertical.







Bibliography

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Shannon, Sarah. 2017. “Punishment, Religion, and the Shrinking Welfare State for the Very Poor in the United States, 1970-2010.” Socius. 3:1-16.

1. In 2010, prime-age adults (25-54 years old) made up 54% of the U.S. adult population. Younger adults (18-24) made up 13%; older, working-age adults (55-64) made up 16%, and 65+ were 17%. In 1980, working age adults (25-64) were 66% of all adults. [↑](#footnote-ref-1)