# SNAP Work Requirement and Criminal Recidivism

Kaidi Wu[1]
Department of Economics, Michigan State University

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Abstract

Under the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996, work requirements were imposed on able-bodied adults without dependents (ABAWDs) to continuously receive Supplemental Nutrition Assistance Program (SNAP) benefits, with the option for waivers under certain local labor market conditions. In this paper, I study the effects of SNAP ABAWD work requirement on criminal recidivism using administrative prison records on offenders released from 2011 and 2017. Exploiting the timing of each offender's release from prison, the approval of SNAP work requirement waivers, and the age cut-off of ABAWDs, I find that being released to a county with SNAP work requirement reduces the risk of recidivism. While counties with ABAWD time limit have higher recidivism rates overall, ex-prisoners who are just below the upper bound of ABAWD age requirement have a lower rate of recidivism due to property crimes than those who aged out of work requirement at release.

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[1] Kaidi Wu (wukaidi@msu.edu) is a graduate student in the Economics department at Michigan State University.

## 1. Introduction

In 2019, the number of incarcerated individuals in the United States exceeded two million, which was a 500 percent increase from four decades earlier. As a result, the country now has one of the largest incarcerated populations and highest incarceration rates globally (Sawyer et al., 2019). Each year, more than 600,000 offenders are released from US prisons (Carson, 2021). The reentry into their communities is coupled with a series of vulnerabilities including chronic diseases (Mallik-Kane & Visher, 2008), food insecurity (Testa & Jackson, 2019), homelessness (Fontaine, 2013), and limited job prospects (Travis et al., 2014). These barriers to successful reentry These obstacles to successful reentry result in recidivism rates of two-thirds within three years, with half of ex-offenders returning to prison (Durose et al., 2015). Consequently, ex-offenders are contributing a growing share to overall crime rates (Rosenfeld et al., 2005).

While public benefits play an essential role in the transition among released prisoners, the Personal Responsibility and Work Opportunity Act (PRWORA), also known as the 1996 welfare reform, mandated work requirements on welfare recipients to reduce dependency and encourage work. Specifically, the reform imposed a time limit for ABAWDs (able bodied adults aged 18-49 without dependents) to receive food stamp benefits, limiting them to three months in a 36-month period unless they work or participate in a work program at least 80 hours per month. Ex-offenders are disproportionately impacted by this policy because childless adults make up half of the prison population (Maruschak et al., 2021).

The work requirement can have mixed effects on recidivism among ex-prisoners. On the one hand, according to the canonical crime model following Becker (1968) which assumes crime as rational behavior, individuals commit crimes when the expected utility from criminal behaviors exceeds that of non-criminal activities. The work requirement raises the opportunity cost of obtaining public assistance, so ex-prisoners may resort to crimes to achieve a higher utility level. On the other hand, the requirement may reduce the time devoted to illegal activities among ex-prisoners who strive to remain eligible, resulting in lower recidivism rates among released ABAWDs. Whether work requirements promote or discourage recidivism remains an empirical question.

This paper studies how work requirements linked with the Supplemental Nutrition Assistance Program (SNAP) affect recidivism. The focus is on SNAP due to its significance to the formerly incarcerated population and the variation in the administration of the work requirement. Firstly, SNAP is the largest food assistance program in the United States, serving more than 1 in 10 individuals among the general population. It plays a vital role in supporting reentry by providing basic food assistance and supplementing inadequate income. Additionally, the SNAP

Employment and Training (E&T) program offers robust and targeted interventions that could help alleviate the significant employment barriers faced by some formerly incarcerated individuals (Wolkomir, 2018). Secondly, the welfare reform bill provides states with flexibility to apply for a SNAP time limit waiver for areas with a high unemployment rate or inadequate job opportunities. Moreover, states can exempt up to 15% of non-waived ABAWDs who have depleted their eligibility. During the great recession, a blanket waiver was implemented through September 2010 via the American Recovery and Reinvestment Act (ARRA). States began reinstating their work requirements as employment began to recover. This study aims to evaluate the effect of the SNAP work requirement on recidivism of ex-offenders by utilizing administrative data of federal and state prison records from 2011 to 2017, exploiting the temporal and geographical variation in work requirement status and the ABAWD upper age cutoff in a triple difference approach.

I find that ex-prisoners released to areas with work requirements have higher probability of recidivism regardless of age. Compared with those who aged out of ABAWD upon release, ex-prisoners who are below the upper age cutoff are less likely to be reincarcerated within one year of release when released to a county with SNAP work requirement. Decomposing by the type of prior crimes, I find the lower recidivism rates among younger ex-prisoners are driven by the lower recidivism among property crime offenders. The analysis by the type of returning offense shows the ABAWD time limit reduces the risk of committing property crimes after release. These results provide evidence in support of the time allocation effect of SNAP work requirements.

This paper is relevant to two strands of research. First, it contributes to research about the impact of social welfare programs on criminal behaviors. Prior work finds that access to social safety net lowers crime and recidivism (Agan & Makowsky, 2018; Beach & Lopresti, 2019; Berk et al., 1980; Berk & Rauma, 1983; Carr & Packham, 2019; Foley, 2011; He & Barkowski, 2020; Mallar & Thornton, 1978; Palmer et al., 2019; Wen et al., 2017; Yang, 2017a). This paper builds upon these findings and further investigates the work requirement component of the social safety net. Second, it complements recent literature on the debate over work disincentives of SNAP. Prior work has shown that access to SNAP discourages labor supply using early rollout of the program and changes in SNAP administration (East, 2018; Hoynes & Schanzenbach, 2012; Tuttle, 2019). While research finds work requirements discourage SNAP participation (Ganong & Liebman, 2018; Gray et al., 2023; Mulligan, 2012; Ribar et al.; Wilde, 2000; Ziliak et al., 2003), its impact on employment and work effort among general population is less clear (Cuffey et al., 2022; Han, 2022; Harris, 2021; Ritter, 2018). By examining the impact of work requirements on ex-prisoners, who are potential SNAP participants, this study provides insight into the effects of work requirements that may not be observed in analyses of the general population.

Additionally, given the policy aim of reducing dependency on benefit programs, it is important to investigate whether work requirements promote work or impose harm on public safety by screening out vulnerable populations.

The rest of the paper proceeds as follows. Section 2 introduces the background of SNAP work requirements. Section 3 discusses previous literature. Section 4 describes data used in analysis. Section 5 lays out the empirical strategy and section 6 presents results. Section 7 concludes.

## 2. Background

### 2.1 The ABAWD Time Limit

SNAP is a crucial food assistance program in the United States, providing supports to over 35 million low-income individuals as of 2019, including working and non-working families, children, and those who are unable to work due to age or disability. To qualify for SNAP, individuals aged 16-59 must meet general work requirements, unless they are exempt for reasons such as disability. These requirements include registering for employment, accepting job offers, participating in E&T when assigned by the State, and not quitting a job or reducing work hours below 30 hours per week without good reason.

Moreover, the ABAWD time limit, established by the PRWORA in 1996, only applies to a subset of SNAP recipients who are between the ages of 18 and 49, live in households without children, are not pregnant, and are physically or mentally capable to work. These individuals must meet an additional work requirement by working or participating in a qualifying work program for at least 20 hours a week or by participating in a workfare program. Participants subject to the ABAWD work requirement will lose eligibility for SNAP if they receive benefits for three months within a 36-month period and fail to meet the work requirement.

The ABAWD time limit applies to a relatively small percentage of individuals who receive SNAP benefits. According to Stavrianos and Nixon (1998), prior to the implementation of the time limit in 1996, able-bodied adults without children accounted for approximately 3.8% of SNAP participants. Although the number of such adults receiving benefits had already been declining along with the overall SNAP caseload before the implementation of the time limit, the number fell by about 40% within the first year of the ABAWD provisions taking effect, with most of the decrease occurring within the first two to three months. Participation continued to decline at a slower pace through 1998 and 1999 (Czajka et al., 2001). As is shown in Figure 1, the share of ABAWDs among SNAP participants remained at 4 percent for years before the Great Recession in 2008. Although the ABAWD time limit affects only a small portion of the general SNAP

recipients, it is relevant to criminal recidivism because the population consists mostly of homeless individuals, ex-offenders, or those with drug or alcohol dependency issues (Wheaton et al., 2021).

*[Figure 1 here]*

### 2.2 Waivers and Reinstatement of the Time Limit

The ABAWD time limit can be waived in areas with an unemployment rate of over 10 percent or limited job opportunities, as permitted by the PRWORA. These areas can be the entire state, county, or a combination of counties and towns, as long as their combined unemployment rates satisfy the required threshold. However, the ABAWD waiver only waives the work requirement specific to ABAWDs but not the general work requirement. Additionally, states have the discretion to cover a limited number of participants who may lose eligibility due to the work requirement.

Following the Great Recession, the ARRA temporarily suspended the time limit nationwide from April 1, 2009, to September 30, 2010, with the option for states to extend the waiver to September 30, 2011. Due to the persistently high unemployment rates, many states continued to waive the time limit in subsequent years. Figure 2 presents the number of counties with ABAWD time limit reinstated after the expiration of the national waiver. From 2011 to 2019, the number of counties subject to the ABAWD time limit increased over time. While some counties obtained waivers intermittently, the majority of counties did not receive a waiver after the limit was reinstated.

*[Figure 2 here]*

The observed changes in the population of SNAP participants who are ABAWDs shown in Figure 1 can be attributed to the trend in ABAWD time limit waivers. The national time limit waiver led to an increase in the share of the ABAWD population among SNAP recipients. However, as states started to reinstate the ABAWD time limit, the share gradually dropped in subsequent years, indicating the correlation of the work requirement with SNAP participation among ABAWDs.

## 3. Literature Review

This paper relates to the literature related to crime, specifically the impact of social benefit programs on criminal behavior. Tuttle (2019) studies the SNAP drug ban which excludes drug

felons from receiving benefits since the PRWORA. The enactment of the drug ban increases recidivism among drug traffickers, as ex-prisoners may turn to criminal activities to supplement lost welfare income. Yang (2017a) uses more recent variation in opting out of the SNAP drug ban to find access to SNAP lowers recidivism among drug felons. In addition, SNAP payment timing affects local crime rates. Carr and Packham (2019) show that theft increases during the last week of the benefit cycle, and staggering payments to different households reduces theft at grocery stores in Illinois. Using data from multiple cities, Foley (2011) also finds the cyclicality in financially motivated crimes that corresponds to SNAP payment schedules.

Other welfare programs also affect crime rates. Studies using experimental data show that immediate access to transitional aid such as unemployment benefits upon release from prison reduces property crimes (Berk et al., 1980; Mallar & Thornton, 1978). Similarly, more generous access to unemployment benefits has been found to lead to smaller increases in trade-related property crimes during periods of increased import competition (Beach & Lopresti, 2019). In addition to food and financial assistance, access to medical benefits also has the positive externality of controlling crime. He and Barkowski (2020) find the Medicaid expansion under the Affordable Care Act is negatively associated with burglary, vehicle theft, homicide, robbery, and assault among childless adults. Focusing on the Health Insurance Flexibility and Accountability (HIFA) waivers component of the Medicaid expansion, Wen, Hockenberry, and Cummings (2017) find offering substance use disorder treatment reduces robbery, aggravated assault and larceny theft.

In addition, research has explored the impact of labor market on recidivism among ex-offenders. Agan and Markowsky (2018) use administrative prison release records to demonstrate that an increase in the minimum wage reduces one-year prison reentry rates associated with property and drug crimes. Moreover, the availability of state Earned Income Tax Credits reduces recidivism among women. Using the same dataaet, Yang (2017b) finds that improved labor market conditions, characterized by higher wages for low-skilled workers, significantly reduce the risk of recidivism. In contrast to labor market incentives that increase benefits of employment, this study contributes to the literature on crime by examining the aspect of social benefit programs that impose punishment on unemployment.

This paper also relates to the ongoing debate surrounding the work disincentives of SNAP. Previous research examining the early rollout of the food stamp program shows that access to food stamps reduces employment and hours worked (Hoynes & Schanzenbach, 2012). Focusing on the subpopulation affected by major changes in SNAP rules during the 1996 welfare reform, East (2011; 2018) finds strong evidence of labor supply disincentives among immigrants. To promote work and reduce dependence on welfare transfers, a 3-month time limit for benefits

every 36 months was instituted for ABAWDs not working or participating in work programs at least 20 hours a week. The work requirements are proved to discourage SNAP participation. For example, in a descriptive analysis of participation patterns during 1994 to 1998, Genser (1999) finds SNAP participation among nonimmigrant childless unemployed adults fell by 59 percent. Additionally, the work requirement reduces program participation by 53 percent among Virginia residents subject to work requirements (Gray et al., 2023). Ribar et al. (2010) also find that participation spells among ABAWDs are also shorter in addition to decreased participation. Time limit waivers were approved across areas over the years depending on local labor market conditions. Ganong and Liebman (2018) find the ABAWDs time limit waivers explain part of the increase in enrollment from 2007 to 2011.

The effect of ABAWD time limit on labor supply remains unclear. Several studies find no evidence that the ABAWD time limit affects employment or labor force participation (Cuffey et al., 2022; Han, 2022; Harris, 2021; Ritter, 2018; Stacy et al., 2018).[2] However, Harris (2021) uses American Community Survey (ACS) data from 2010 to 2017 and finds that the ABAWD time limit increases employment among ABAWDs by 1.3 percentage points. In addition, Lippold and Levin (2021) use a regression discontinuity design to compare counties just below and above the unemployment threshold required for the ABAWD waiver and find that removing the ABAWD work requirement reduced hours of work.

Two prior studies use linked SNAP administrative data and Unemployment Insurance (UI) wage records to investigate the impact of the ABAWD time limit. Gray et al. (2023) find no effect of the reinstatement of the ABAWD time limit in Virginia in 2013 on employment on average, but does find some evidence of increased earnings among participants working close to the required level to maintain eligibility. Ribar et al. (2010) discover that the ABAWD time limit increases exits into employment as well as exits into nonemployment, but did not estimate the impact on the probability of being employed. Overall, the evidence on the impact of ABAWD time limit on labor supply remains inconclusive. This paper extends previous research and contribute by providing empirical evidence of the effect of ABAWD time limits on recidivism among ex-offenders.

[2] Cuffey, Mykerezi, and Beatty (2022) examine the Current Population Survey Food Security Supplement data from 2004 to 2009 and find that the ABAWD time limit has no significant impact on employment. Similarly, Stacy, Scherpf, and Jo (2018) uses linked American Community Survey (ACS) data and administrative data from nine states between 2005 and 2015 to show that the ABAWD time limit does not affect labor force participation or hours worked. Han (2022) conducts a similar analysis using ACS data from 2005 to 2017 and finds that suspending work requirements have no impact on employment. Ritter (2018) investigates the effects of the ABAWD time limit on the employment of older ABAWDs using basic monthly Current Population Survey data from 2000 to 2016 and SNAP Quality Control data from 2003 to 2017, and finds no evidence that the time limit affects employment.

## 4. Data

### 4.1 Administrative Prison Records

The administrative prison records come from the National Corrections Reporting Program (NCRP)[3], which consists of offender-level data on admissions and releases from state prisons as well as yearend prison custody records voluntarily reported by state departments of correction. This paper uses the NCRP data from 2011 to 2017 when 43 states provided data at some point in this period.

The term records provide information on each offender's prison spell, including the date of admission and release, the state and county of prison sentence imposed, and the state and county of last known address prior to incarceration. I use the sentencing state and county as a proxy for the state and county where the offender is released to, given that over 90 percent of offenders reside in the county of conviction post-release (Raphael & Weiman, 2007). With the information on the time and location of sentence, I can match each term record with the ABAWD time limit status upon release. Additionally, the data contain further details of the prison spell, such as the offense of conviction, convicted counts, total sentence, type of prison, reason for entering prison, and reason for release.

The data include additional information on offender characteristics such as date of birth, race, sex, and highest education, with the date of birth truncated at the month level to protect confidentiality. This truncated information is helpful for approximating the offender's age at release and therefore determining their eligibility status based on the age cutoff.[4] A crucial element of this study is the unique identifier assigned to offenders within a state. The identification number allows for linking term records of the same offender if their convictions occurred in the same state. This enables the tracking of whether an ex-offender released between 2011 to 2017 returned to incarceration, defined as recidivism in this paper, in the same state within this timeframe, as well as the ability to track the time of recidivism using the admission and release time data.

[3] United States. Bureau of Justice Statistics. National Corrections Reporting Program, [United States], 2000-2017. ICPSR37608-v1. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2020-11-19. http://doi.org/10.3886/ICPSR37608.v1

[4] One major caveat of this sample is I do not observe disability status, marital status, or dependent child at release. These are not reported in the NCRP data.

*[Table 1 here]*

The analysis sample used in this study comprises all releases between 2011 and 2017 in the NCRP dataset. I restrict the sample by excluding records with missing information on county of sentencing and age, which are necessary for matching ABAWD time limit status and eligibility. In addition, I also exclude 2011 data of California because of a major policy change that sentence more convicts to county jails instead of state prison since 2011 (Agan & Makowsky, 2018). Table 1 presents the characteristics of the analysis sample, as well as ex-prisoners who returned to prison within one year and three years, respectively. Of the 3.6 million ex-prisoners, 88 percent are male, with non-Hispanic whites representing a smaller proportion of the released offenders than in the general U.S. population. Nearly 40 percent earned a high school degree and the average age at release is in the mid- thirties. Decomposing by the offense that leads to their longest sentence, similar numbers of ex-offenders committed property, violent and drug crimes. An average released prisoner served two years in prison by the time of release. Among ex-offenders returning to prison, they are more likely to be males, younger individuals, property crime offenders, and those served less time in prison during their last incarceration.

*[Table 2 here]*

Table 2 presents the rates of recidivism across various prisoner characteristics. I adjusted the sample in Table 1 so that I observe a full year post-release for all released prisoners when calculating one-year recidivism rates. Similarly, I restrict the sample to prisoners who were released during 2011-2014 so that I observe a three-year post-release period to calculate the three-year recidivism rates. Within one year of release, the recidivism rate is nearly 17 percent. Within three years of release, over 34 percent ex-prisoners are reincarcerated. Male and property crime offenders have a higher recidivism rate than their counterparts.

### 4.2 SNAP Work Requirement Waivers Records

The SNAP ABAWD time limit waivers records are obtained from the Food and Nutrition Service (FNS) through a Freedom of Information Act request. The FNS provided the approval letters sent to all states requesting a ABAWD time limit waiver during 2000 - 2017. The letters provide information on the approved areas as well as the expiration date of each waiver. To meet the unemployment rate cutoff for waiver eligibility, states can combine smaller areas that may be below the county level. Since the location information regarding the released prisoners is restricted to the county level, I code counties that have part of their area approved for the

waiver as waived. This enables me to compile a policy database of the ABAWD time limit status at the county level.

There are two caveats regarding this policy data that may result in measurement error. First, I do not observe whether states used or declined the waiver after receiving approvals. Second, states are also granted exemption to waive 15 percent of the ABAWD participants at its own discretion. I do not have information on how states use their exemptions. Therefore, if a released prisoner is sent to to an area with a lenient ABAWD exemption policy, there is a greater chance they will be exempt from the time limit even if the county does not have an AWAWD time limit waiver in place.

*[Figure 3 here]*

Figure 3 illustrates the waiver status in 2011 and 2017, categorized into fully waived, partially waived, and non-waived counties. In 2011, following the expiration of the nationwide ABAWD time limit waiver, only a handful of states reintroduced the limit due to the slow recovery of employment after the recession. Nonetheless, in these states, there were still several counties waived or partially waived from the limit due to high unemployment rates. As the economy began to recover, more and more areas saw the implementation of the time limit. By 2017, most states had either all or part of the state subject to the ABAWD time limit. The pattern corresponds with the yearly trend shown in Figure 2.

*[Figure 4 here]*

Figure 4 shows the one-year recidivism rates by age and local work requirement status among prisoners released between the ages of 20 to 80. The recidivism rates decrease with age regardless of the work requirement status in the county they are released to. In areas with the ABAWD time limit, the recidivism rates among prisoners over 40 years old are generally higher than those released to areas with time limit waivers, indicating a possible association between the ABAWD time limit and recidivism behaviors among older prisoners. The vertical line in the figure represents the upper age cutoff for ABAWDs at age 49. In areas without the time limit, there is a consistent decreasing trend in recidivism for prisoners around the age cutoff. However, in areas with the time limit, the recidivism rates remain constant for prisoners aged under the cutoff and start to decrease for prisoners aged out of the upper age cutoff. The difference in recidivism rates among prisoners subject to the time limit by local work requirement status reveals the potential impact of the ABAWD work requirement on reducing recidivism compared to older released prisoners.

### 4.3 Local Labor Market Variables

I control for other labor market variables that affect recidivism rates throughout the study. Firstly, I use annual county-level unemployment data from the Bureau of Labor Statistics[5], which is used by the FNS to determine eligibility for the time limit waiver. Secondly, I obtain quarterly data on the average monthly earnings of non-college educated men at the county level from the Quarterly Workforce Indicators data because ex-offenders mostly have less than a college degree[6]. This wage data gives a good representation of the potential wage for employment among ex-prisoners. Thirdly, I incorporate state-level and sub-state minimum wage data from Vaghul and Zipperer (2016) to reflect general labor market regulations in the areas the prisoners were released. Fourthly, I include data on state Earned Income Tax Credits (EITC) data from the Tax Policy Center[7], as EITC also plays a role in labor market incentives. Additionally, I control for living costs by adding quarterly housing price index at the state-level from the Federal Housing Finance Agency.[8]

Finally, I control for factors that affect criminal behaviors but not directly relate to the labor market variables. I measure police supply by the number of sworn police officers per 1,000 population from the Law Enforcement Officers Killed or Assaulted (LEOKA) data from the Federal Bureau of Investigation.[9] I additionally include policy data on the status of SNAP drug bans to isolate the impact of the ABAWD work requirement using data reported in Yang (2017a).

## 5. Method

To identify the effect of ABAWD time limit on a potentially eligible population of ex-offenders, I leverage the temporal and geographical change in the ABAWD work requirement as well as the upper age cutoff for ABAWDs in a triple-difference framework. Specifically, I estimate the following equation with pooled ordinary least squares (OLS)

$$Y_{ict} = \beta_0 + \beta_1 \cdot Limit_{ct} + \beta_2 \cdot Below50_{it} + \beta_3 \cdot Limit_{ct} \cdot Below50_{it} + \beta_4 \cdot X_{ct} + \beta_5 \cdot Z_i + \alpha_c + \gamma_t + \varepsilon_{ict}$$

[5] Bureau of Labor Statistics (BLS). (n.d.). Local Area Unemployment Statistics. Retrieved from https://www.bls.gov/lau/

[6] U.S. Census Bureau, Center for Economic Studies, Longitudinal Employer-Household Dynamics Program (2019). Quarterly Workforce Indicators [dataset]. Retrieved from https://lehd.ces.census.gov/data/

[7] Tax Policy Center. (n.d.). State-by-State Earned Income Tax Credit. Retrieved from https://www.taxpolicycenter.org/statistics/state-state-earned-income-tax-credit

[8] Federal Housing Finance Agency. (n.d.). FHFA House Price Index (HPI). Retrieved from https://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index-Datasets.aspx

[9] Federal Bureau of Investigation. (n.d.). Law Enforcement Officers Killed and Assaulted (LEOKA). Retrieved April 15, 2022, from https://www.fbi.gov/services/cjis/ucr/leoka

where the outcome of interest, $Y_{ict}$, is an indicator of recidivism of individual $i$ released to county $c$ on year and month $t$ within one year or three years of release. $Limit_{ct}$ stands for the ABAWD time limit reinstatement in county $c$ and year-month $t$. $Below50_{it}$ is an indicator of individual $i$ being under age 50 at the time of release on year-month $t$. $X_{ct}$ is a vector that contains a series of local labor market and policy variables, such as county unemployment rates, minimum and low-skilled wages, EITC policy indicators, housing price indexes, density of policy officers, and SNAP drug ban status. $Z_i$ is a vector of individual characteristics including gender, race, and an indicator of a high school degree. $\alpha_c$ and $\gamma_t$ are county and year-month fixed effects respectively. Standard errors are clustered at the state level to account for correlations within a state caused by the unobserved state court system differences.

The validity of the research design depends on the exogeneity of the reinstatement of the ABAWD time limit across counties where the prisoners are released to, as well as the exogeneity in their age eligibility for ABAWDs at prison release. The exogeneity of age eligibility is trivial because the ABAWD age cutoff is predetermined and the age at release is not self-selected. The concern about endogeneity in time limit reinstatement stems from the fact that the eligibility for the time limit waiver is determined by local unemployment rate. When the limit status is colinear with local unemployment rates, the effect of SNAP work requirement is confounded with the effect of local labor market conditions on criminal recidivism. Further, state SNAP agencies may manipulate county grouping to meet the unemployment rate cutoff. This creates variation in limit status regardless of county unemployment for better identification. However, it also introduces confounders that affect the state's waiver application decision. To address these concerns, I control for county unemployment rates and other state-level policy variables in the regression. In addition, using prisoners released at an age above the ABAWD age cutoff as a control group also controls for common trend caused by the unobserved confounders.

## 6. Results

### 6.1 Main Results

Table 3 presents the main results of the effect of the work requirement. The sample consists of ex-prisoners released during 2011 to 2017 who aged between 45 to 54 at the time of release. Column 1 shows the results for one-year recidivism, defined as returning to prison within one year after release. The first row presents the main effect of age, which indicates that being below the ABAWD age cutoff increases the risk of returning to prison within one year by 0.6 percentage points. This is consistent with the decreasing trend in recidivism by age demonstrated in Figure 4. The time limit increases the one-year recidivism rate among all ex-

prisoners in the sample by 1.5 percentage points. This implies when released to areas with limited access to SNAP, ex-prisoners are more likely to prison even if the local labor market conditions and demographic characteristics are similar to those in areas with work requirement waivers.

The focus of the analysis is on the interaction effect of being below the ABAWD age cutoff and the time limit. The results show a significant negative impact on one-year recidivism. Among individuals released at an age younger than 50, being released to areas with the ABAWD time limit reduces the probability of returning to prion within one year by 0.7 percentage points. Given an average recidivism rate of 14 percent, this represents a 5 percent decrease in the one-year recidivism rate. This indicates the recidivism reducing effect of the work requirement among those subject to the age requirement.

Column 2 shows the result with three-year recidivism. I restrict the sample to ex-prisoners released during 2011 to 2014 to ensure a sufficient post-release follow-up period. The findings are consistent with those for one-year recidivism rates, but with larger effects sizes. The work requirement reduces the risk of returning to prison within three years of release by 1 percentage point among those below the ABAWD age cutoff compared to those aged out of the age requirement. The difference is statistically significant at the 1% significance level.

*[Table 3 here]*

### 6.2 Robustness

Table 4 presents the results of the robustness checks where I modify the analysis sample. Panel A and Panel B show the results for one-year recidivism and three-year recidivism, respectively. Column 1 replicates the findings in Table 3 as a reference. The next two columns display the results with the alternative samples.

*[Table 4 here]*

One concern of the main analysis is the inclusion of offenders released multiple times during the sample period in the pooled OLS. Individual level fixed behavioral patterns could bias the results if not accounted for. For example, if waived areas have a higher share of repeat offenders among all released prisoners and these repeat offenders tend to be below the ABAWD age cutoff, the estimated recidivism reduction effect of the SNAP time limit may be biased upward. I use an alternative sample consisting of the first observation of prison release among all prisoners during 2011 to 2017. The results are presented in Column 2 of Table 4. For

one-year recidivism, excluding records of repeat offenders leads to a similar estimate of the effect of SNAP time limit. The point estimate of a 0.5 percentage point decrease translates into a 6 percent lower one-year recidivism rate across first-time release records. However, the effect on three-year recidivism does not hold after excluding multi-time release records during the sample period. This indicates that longer-term effect of the time limit is at a higher risk of bias due to not accounting for individual level correlations when including all prisoners in the analysis.

Another concern is that the released prisoner may age out of the ABAWD age cutoff during the post-release observation period. For example, if a prisoner is released at the age of 49 years and 6 months old, he/she is classified as below the age cutoff in the analysis. In six months after release, the prisoner turns 50 and is not subject to the time limit anymore. Since the outcome measure is whether returning to prison in one year or longer observation period, the change in age eligibility status will cause downward bias. To mitigate the concern, I exclude prisoners released at the age of 49 for the analysis of one-year recidivism, and those released at an age between 47 and 49 for the analysis of three-year recidivism. The results are presented in Column 3 of Table 4. Using the remaining prisoners who do not change age eligibility in the post-release analysis period, I find similar results with the main analysis for one-year recidivism. The time limit lowers the probability of returning to prison within one year by 0.6 percentage points. With a 14-percentage point average risk of one-year recidivism, this is a 4 percent decrease in the recidivism rate. While there is also a 0.6 percentage point decrease in the risk of returning to prison within three years when released to counties with a SNAP time limit, the difference is not statistically significant.

Modification of the samples by excluding the population with potential risk of bias, the above results suggest robust results of the main analysis for one-year recidivism.

### 6.3 Effects by Offense Type

I then explore how the effect on recidivism behaviors vary by prior offense type. Table 5 presents estimates by three main types of prior conviction – property crimes, violent crimes, and drug crimes. Panel A shows the results for one-year recidivism. Column 1 presents the results for ex-prisoners convicted of property crimes. Being released to counties with ABAWD time limit and subject to the ABAWD age requirement leads to a 1 percentage point decrease in the probability of returning to prison within one year. The effect is significant at the 5 percent level. Column 2 presents results for ex-prisoners convicted of violent crimes. There is a 0.4 percentage points decrease in the risk of one-year recidivism. However, the decrease is not statistically significant. Column 3 presents results for released prisoners convicted of drug

crimes, which shows that the SNAP ABAWD time limit leads to a 0.8 percentage points decrease in the risk of one-year recidivism. The effect is statistically significant at the 10 percent level.

Panel B displays the results for three-year recidivism. The SNAP ABAWD time limit lowers the risk of returning to prison within three years, but the effect is only significant among drug crime offenders. These findings suggest that the SNAP time limit mostly affects property and drug crime offenders in the short run. And the effect persists for a longer period for drug crime offenders. Prior property crimes indicate these ex-offenders were more likely to be financially disadvantaged so that government transfers play an important role in their behaviors after release and the access to SNAP disproportionately affect property crime offenders upon release. On the other hand, drug crime offenders are faced with even more significant barriers to SNAP because of the state-level elective ban on SNAP for people with prior felony drug convictions. The additional time limit on SNAP provides more incentives for work and drives more persistent effect on recidivism behaviors.

*[Table 5 here]*

I next decompose recidivism by the types of returning offense and present the results in Table 6. Column 1 presents results for returning to prison due to property offense. The SNAP time limit lowers the rate of recidivism of property crime by 0.3 percentage points in one year and 0.4 percentage points in three years among released prisoners below the age cutoff. In terms of percentage change with regards to the average rate of recidivism of property crimes, this translates into a 6 percent decrease in one year and 4 percent decrease in three years, respectively. Column 2 shows the results for returning due to violent crimes. The SNAP time limit has no significant impact on future violent offenses in one year or in three years post-release. Column 3 indicates that the SNAP time limit reduces the risk of future drug crimes three years after release but has no significant impact within one year of release. These findings suggest the SNAP time limit reduces recidivism by preventing future conviction of property crimes after release.

*[Table 6 here]*

### 6.4 Effects by Demographic Group

In Table 7 I present the results by gender of the released prisoners. Column 1 presents the results for one-year recidivism among male prisoners. The recidivism rate among younger male prisoners released to counties with SNAP time limit is lower than older male prisoners released to the same counties. However, the result is not statistically significant. Column 2 indicates a 2-

percentage point lower probability of returning to prison within one year of release among female offenders under the ABAWD age cutoff and released to counties with time limit. This is a 20 percent decrease with regard to an average of 10 percent risk of one-year recidivism among all female offenders. The effect is statistically significant at the 1 percent level. Columns 3 and 4 present the results for three-year recidivism among male and female prisoners respectively. The results are similar with one-year recidivism. While there is a slightly lower probability of recidivism among younger male offenders below the SNAP time limit, the effect is not significant. However, the drop in three-year recidivism is significant among female offenders with a magnitude of 1.7 percentage point or 9 percent decrease compared to all female offenders.

*[Table 7 here]*

I also break down the effect by race and present the results in Table 8. Columns 1 to 3 show the results for one-year recidivism among white, black, and Hispanic offenders released between 2011 and 2016 respectively. The effect of the work limit is not significantly different from zero in all subgroups. Column 4 to 6 present the results for three-year recidivism. The time limit has large and significant impact for black offenders among the three racial subgroups, consistently suggesting its effect among socially disadvantaged groups.

*[Table 8 here]*

## 7. Conclusion

This study investigates the impact of the reinstatement of the ABAWD time limit during 2011-2017 on recidivism. I find that time limit reduced recidivism among ex-prisoners who are below to the ABAWD age cutoff compared to those who aged out of the cutoff at the time of release. Although the ABAWD time limit was temporarily suspended because of the economic downturn caused by the COVID-19 pandemic, the findings are still relevant as the economy recovers and states begin to reintroduce the time limit when the COVID-19 Public Health Emergency is lifted in 2023. While the economic context may differ post-pandemic, the results still provide some valuable insights on the SNAP program. More importantly, this research emphasizes the importance of social safety net for the reentry of ex-prisoners. Instead of providing unconditional transfers to beneficiaries, adding a component that promotes work and self-dependence also tends to be beneficial to the participants.

An important area for future research would be to explore the possible channels through which the estimated effect of the SNAP ABAWD time limit reduces recidivism among ex-prisoners.

One possible explanation for the effect is that the SNAP ABAWD time limit encourages ex-offenders to allocate their time towards job-seeking and job-training, thereby reducing the likelihood of committing crimes. To validate this channel, researchers can evaluate time use data among released prisoners. Moreover, it would be beneficial to study the heterogenous effects by the characteristics of state SNAP E&T programs. If ex-offenders have better access to E&T programs to meet the ABAWD work requirement, they are more likely to respond to SNAP time limit by spending time on job related activities. The investigation of these mechanisms can inform policy considerations regarding the administration of SNAP E&T programs as well as other safety net programs.

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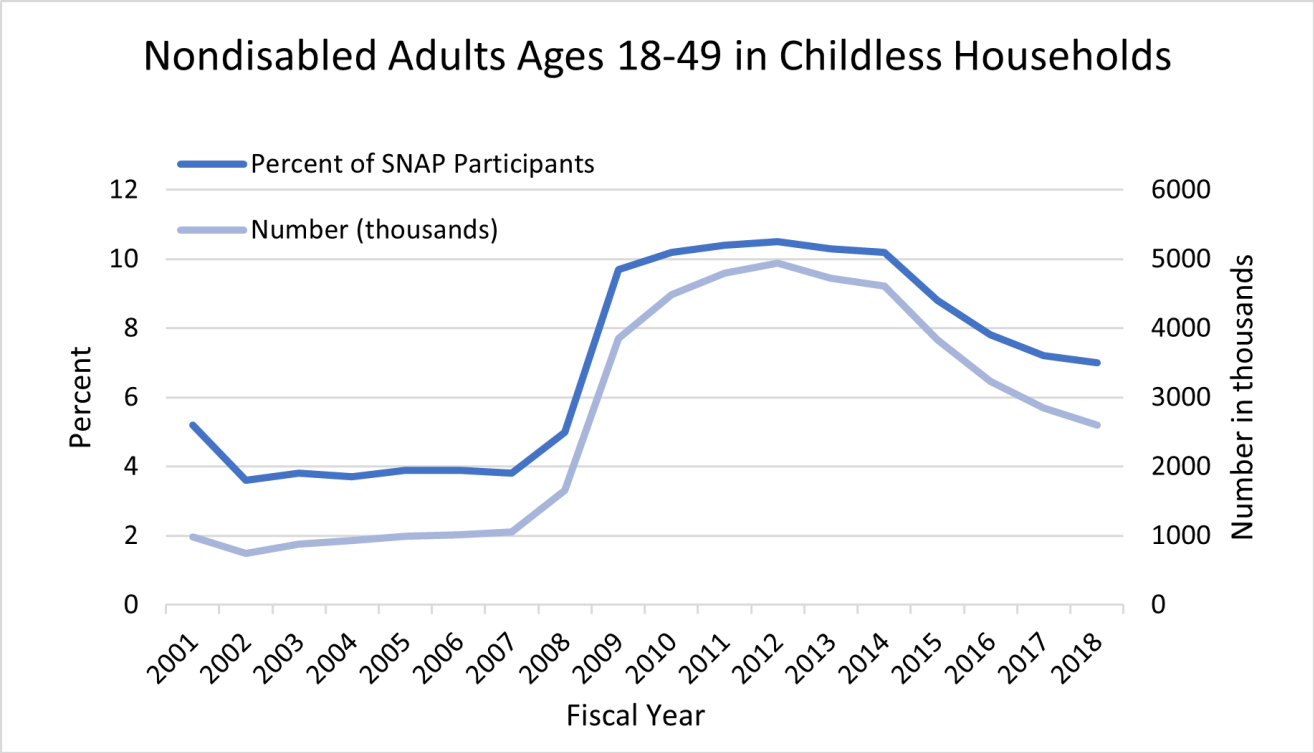
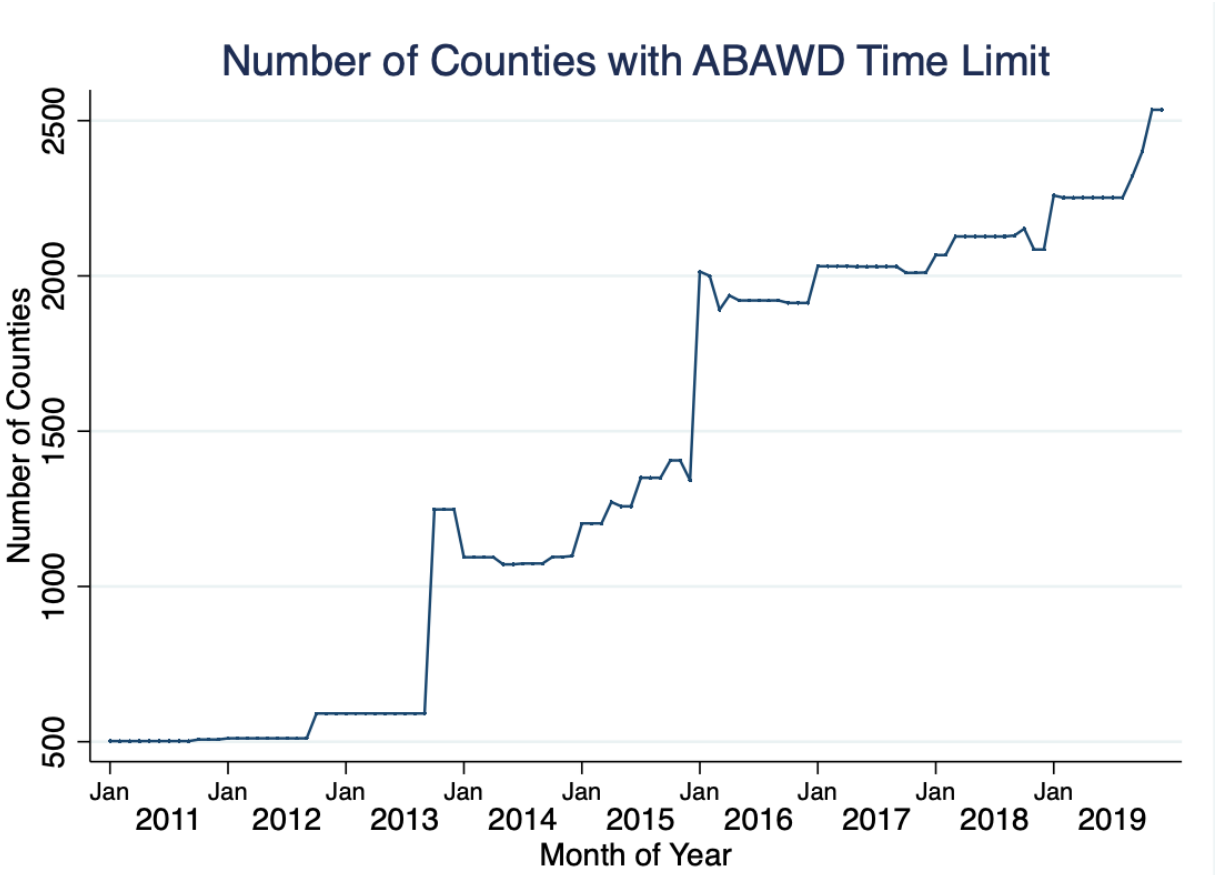
Figure 1. The Trend in Adults Ages 18-49 without Disabilities in Childless Households, 2001-2019



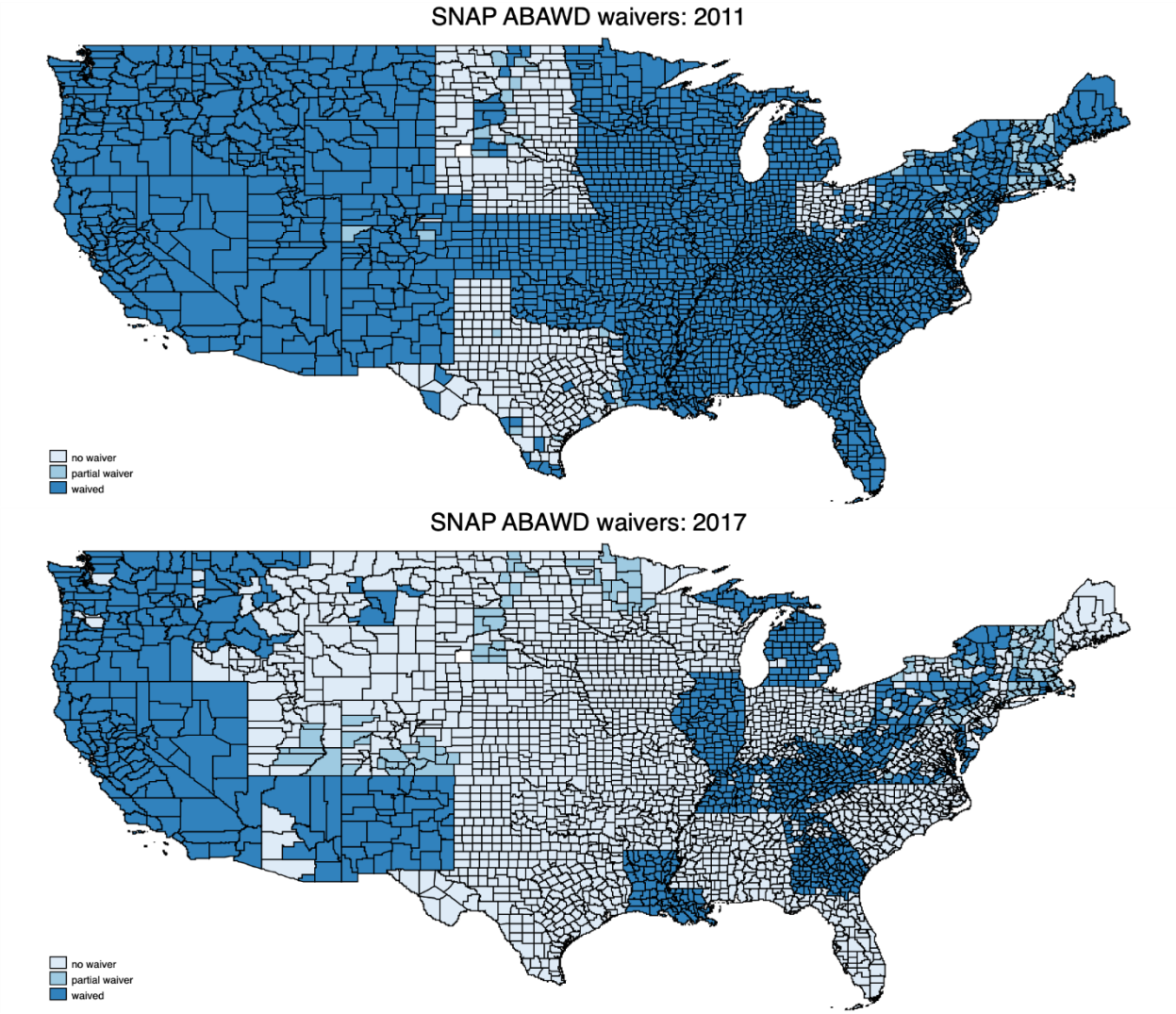

Note: The figure plots the size of population that are nondisabled, childless and aged between 18-49. Data obtained from the Food and Nutrition Service's report series of Characteristics of SNAP Households during fiscal year 2001 and 2018. The reports are available on http://www.fns.usda.gov/ops/research-and-analysis.

Figure 2. Monthly Trend of Counties Under ABAWD Time Limit, 2011-2019



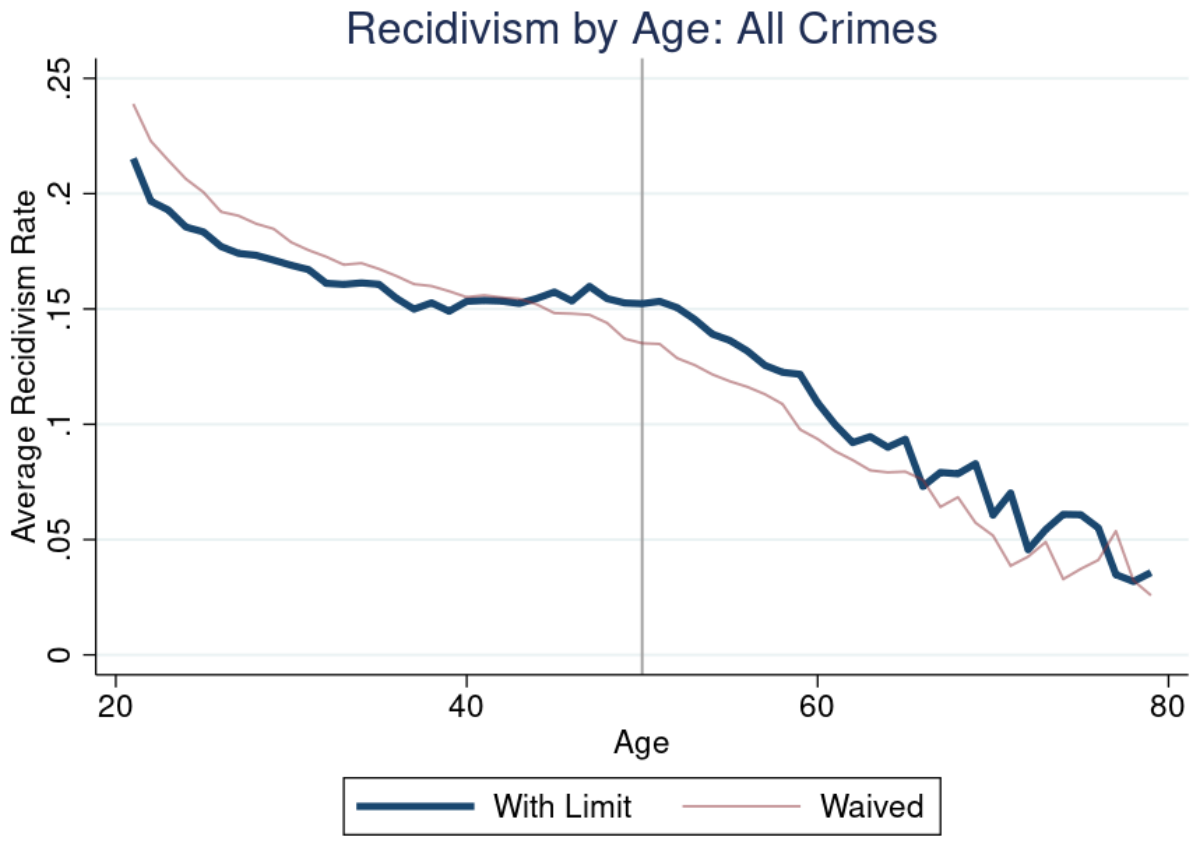

Note: The figure plots the number of counties with reinstated ABAWD time limit post-recession. Time limit status are calculated from waiver records obtained through a Freedom of Information Act request to the U.S. Department of Agriculture, Food and Nutrition Service. Counties with part of the area waived from the ABAWD time limit are coded as waived in this figure.

Figure 3. ABAWD Time Limit Waivers in 2011 and 2017




Note: The maps plot the waiver status at the county level in 2011 and 2017. The dark blue areas are fully covered by ABAWD time limit waivers. The lighter blue areas have part of the county waived. The lightest colored areas do not have any waivers in place.

Figure 4. One-year Recidivism Rates by Age and ABAWD Limit Status




Note: The figure plots the one-year recidivism rate at different age by the limit status at the county level pooling together all sample periods. One-year recidivism is defined as returning to prison within one year after release.

Table 1. Summary Statistics: Characteristics of Released Prisoners

| | All | Recidivate 1 Year | Recidivate 3 Year |
|---|---|---|---|
| Male | 0.878 | 0.900 | 0.906 |
| White | 0.475 | 0.504 | 0.480 |
| Black | 0.361 | 0.358 | 0.384 |
| Hispanic | 0.160 | 0.131 | 0.137 |
| High School Degree | 0.381 | 0.423 | 0.419 |
| Age | 36.352 | 34.344 | 34.116 |
| Admit – Property | 0.291 | 0.348 | 0.348 |
| Admit – Violent | 0.265 | 0.240 | 0.237 |
| Admit – Drug | 0.255 | 0.234 | 0.244 |
| Time Served (days) | 751.915 | 525.014 | 591.506 |
| Observations | 3,609,136 | 509,285 | 701,552 |

Note: The first column report characteristics among all prisoners released between 2011 to 2017 after sample restriction. The second and third column reports the characteristics among those who returned to prison within 1 year and 3 years of their release respectively. Violent, Property, Drug are indicators for the most serious offense for which the offender initially went to prison.

Table 2. Summary Statistics: Characteristics of Returning Prisoners

| | Recidivate 1 Year | Recidivate 3 Year |
|---|---|---|
| Overall | 0.168 | 0.343 |
| Male | 0.172 | 0.353 |
| Female | 0.137 | 0.270 |
| White | 0.177 | 0.347 |
| Black | 0.165 | 0.350 |
| Hispanic | 0.144 | 0.307 |
| High School Degree | 0.179 | 0.359 |
| Admit – Property | 0.200 | 0.402 |
| Admit – Violent | 0.153 | 0.314 |
| Admit – Drug | 0.153 | 0.320 |

Note: The table reports the recidivism rates among ex-prisoners by demographic groups and prior offense categories. “Recidivate 1 Year” indicates those released prisoners who returned to prison within 1 year of their release. The recidivism rates are calculated using all prisoners released from 2011 to 2016 so that I observe a full year after release. Similarly, 3-year recidivism rates are calculated using prisoners released during 2011-2014 so that I observe three years post-release. Violent, Property, Drug are indicators for the offense for which the offender initially went to prison.

Table 3. The Effect of ABAWD Work Requirement on Recidivism Among Released Prisoners, Age 45-54

| | Recidivate 1 Year | Recidivate 3 Years |
|---|---|---|
| Below50 | 0.006*** | 0.008*** |
| | (0.002) | (0.002) |
| Limit | 0.015** | 0.022*** |
| | (0.006) | (0.008) |
| Limit*Below50 | -0.007*** | -0.010*** |
| | (0.002) | (0.002) |
| Mean Outcome | | |
| All | 0.144 | 0.289 |
| Below50 | 0.149 | 0.302 |
| Above50 | 0.137 | 0.271 |
| Observations | 499,587 | 343,933 |

Note: The table reports regression results of equation (1) with a sample of prisoners released at the age between 45 and 54. Below50 is an indicator of being under age 50 at the time of release. The dependent variable is recidivism measured by returning to state prison within one year or three years. ABAWD time limit is at the county level. Counties with part of its area covered by a time limit waiver are classified as no limit. All specifications include the full set of control variables – demographic characteristics of the released prisoner, county fixed effects, month-of-year fixed effects, and local labor market characteristics described in section 4.3. Robust standard errors clustered at the state level in parentheses.
* p<0.01, ** p<0.05, *** p<0.10

Table 4. The Effect of ABAWD Work Requirement on Recidivism, Alternative Samples

| | Full Sample | First-time Release | Steady Age Group |
|---|---|---|---|
| | | Panel A. Recidivate 1 Year | |
| Below50 | 0.006*** | 0.006*** | 0.011*** |
| | (0.002) | (0.001) | (0.003) |
| Limit | 0.015** | 0.011* | 0.012* |
| | (0.006) | (0.005) | (0.006) |
| Limit*Below50 | -0.007*** | -0.005* | -0.006** |
| | (0.002) | (0.003) | (0.003) |
| Mean Outcome | | | |
| All | 0.144 | 0.079 | 0.144 |
| Below50 | 0.149 | 0.083 | 0.150 |
| Above50 | 0.137 | 0.075 | 0.137 |
| Observations | 499,587 | 205,966 | 447,193 |
| | | Panel B. Recidivate 3 Years | |
| Below50 | 0.008*** | 0.025*** | 0.039*** |
| | (0.002) | (0.007) | (0.005) |
| Limit | 0.022*** | 0.004 | 0.008 |
| | (0.008) | (0.012) | (0.009) |
| Limit*Below50 | -0.010*** | -0.002 | -0.006 |
| | (0.002) | (0.007) | (0.005) |
| Mean Outcome | | | |
| All | 0.289 | 0.173 | 0.285 |
| Below50 | 0.302 | 0.183 | 0.309 |
| Above50 | 0.271 | 0.160 | 0.271 |
| Observations | 343,933 | 146,559 | 228,714 |

Note: The table reports regression results of equation (1) with different samples of prisoners released at the age between 45 and 54. Column 1 reports the results obtained with the full sample. It is a duplicate of the results in Table 3 listed for reference purpose. Column 2 presents the results with a sample of the first term record among all prisoners observed during 2011 – 2017. Column 3 shows the results with a sample excluding those who changed age eligibility status within one year / three years after release for the analysis of one-year / three-year recidivism. The average recidivism rates among all prisoners and subgroups by age eligibility are listed below the estimation results.

Robust standard errors clustered at the state level in parentheses.

* p<0.01, ** p<0.05, *** p<0.10

Table 5. The Effect of ABAWD Work Requirement on Recidivism, Age 45-54, By Prior Offense

| | Property Crime | Violent Crime | Drug Crime |
|---|---|---|---|
| | Panel A. Recidivate 1 Year | | |
| Below50 | -0.002 | 0.010** | 0.005 |
| | (0.004) | (0.004) | (0.004) |
| Limit | 0.013 | -0.002 | 0.031*** |
| | (0.008) | (0.009) | (0.007) |
| Limit*Below50 | -0.010** | -0.004 | -0.008* |
| | (0.004) | (0.004) | (0.004) |
| Mean Outcome | | | |
| All | 0.177 | 0.132 | 0.129 |
| Below50 | 0.180 | 0.139 | 0.135 |
| Above50 | 0.173 | 0.123 | 0.122 |
| Observations | 144,916 | 125,594 | 125,346 |
| | Panel B. Recidivate 3 Years | | |
| Below50 | 0.015** | 0.016* | 0.014*** |
| | (0.006) | (0.008) | (0.004) |
| Limit | 0.014 | -0.011 | 0.026*** |
| | (0.011) | (0.002) | (0.009) |
| Limit*Below50 | -0.008 | -0.009 | -0.015** |
| | (0.008) | (0.008) | (0.006) |
| Mean Outcome | | | |
| All | 0.353 | 0.258 | 0.267 |
| Below50 | 0.362 | 0.273 | 0.281 |
| Above50 | 0.339 | 0.240 | 0.248 |
| Observations | 101,198 | 84,200 | 87,392 |

Note: The table reports regression results of equation (1) with a sample of prisoners released at the age between 45 and 54 by their prior offense. The type of prior offense is determined by the most serious offense that led to longest sentence for each term record. The three primary offense type are categorized using the Uniform Crime Reporting (UCR) offense codes provided in the raw data set. Panel A and Panel B present results for one-year and three-year recidivism respectively. All specifications include the full set of control variables. Robust standard errors clustered at the state level in parentheses.

* p<0.01, ** p<0.05, *** p<0.10

Table 6. The Effect of ABAWD Work Requirement on Recidivism, Age 45-54, By Returning Offense

| | Property Crime | Violent Crime | Drug Crime |
|---|---|---|---|
| | Panel A. Recidivate 1 Year | | |
| Below50 | 0.002** | 0.001 | 0.002* |
| | (0.001) | (0.001) | (0.001) |
| Limit | 0.003 | -0.000 | 0.010** |
| | (0.003) | (0.002) | (0.004) |
| Limit*Below50 | -0.003** | -0.001 | -0.002 |
| | (0.001) | (0.001) | (0.001) |
| Mean Outcome | | | |
| All | 0.050 | 0.033 | 0.032 |
| Below50 | 0.051 | 0.034 | 0.034 |
| Above50 | 0.048 | 0.031 | 0.030 |
| Observations | 499,587 | 499,587 | 499,587 |
| | Panel B. Recidivate 3 Years | | |
| Below50 | 0.003*** | 0.001 | 0.002 |
| | (0.001) | (0.001) | (0.001) |
| Limit | 0.006 | 0.002 | 0.012** |
| | (0.005) | (0.003) | (0.006) |
| Limit*Below50 | -0.004*** | -0.002 | -0.003** |
| | (0.001) | (0.001) | (0.001) |
| Mean Outcome | | | |
| All | 0.101 | 0.062 | 0.068 |
| Below50 | 0.105 | 0.065 | 0.071 |
| Above50 | 0.095 | 0.059 | 0.062 |
| Observations | 343,933 | 343,933 | 343,933 |

Note: The table reports regression results of equation (1) with a sample of prisoners released at the age between 45 and 54 by returning offense. Below50 is an indicator of being under age 50 at the time of release. The dependent variable is recidivism measured by returning to state prison within one year or three years. ABAWD time limit is at the county level. Counties with part of its area covered by a time limit waiver are classified as no limit. All specifications include the full set of control variables – demographic characteristics of the released prisoner, county fixed effects, month-of-year fixed effects, and local labor market characteristics described in section 4.3.

Robust standard errors clustered at the state level in parentheses.

* p<0.01, ** p<0.05, *** p<0.10

Table 7. The Effect of ABAWD Work Requirement on Recidivism, By Gender

| | Recidivate 1 Year | | Recidivate 3 Years | |
|---|---|---|---|---|
| | Male | Female | Male | Female |
| Below50 | 0.010*** | 0.007* | 0.030*** | 0.032*** |
| | (0.003) | (0.004) | (0.004) | (0.004) |
| Limit | 0.013* | 0.027*** | 0.020** | 0.028** |
| | (0.007) | (0.009) | (0.010) | (0.011) |
| Limit*Below50 | -0.004 | -0.020*** | -0.005 | -0.017** |
| | (0.003) | (0.006) | (0.005) | (0.008) |
| Mean Outcome | | | | |
| All | 0.150 | 0.099 | 0.301 | 0.200 |
| Below50 | 0.155 | 0.107 | 0.314 | 0.217 |
| Above50 | 0.143 | 0.087 | 0.283 | 0.173 |
| Observations | 439,111 | 60,477 | 302,303 | 41,631 |

Note: The table reports regression results of equation (1) with a sample of prisoners released at the age between 45 and 54 by gender. Below50 is an indicator of being under age 50 at the time of release. The dependent variable is recidivism measured by returning to state prison within one year or three years. ABAWD time limit is at the county level. Counties with part of its area covered by a time limit waiver are classified as no limit. All specifications include the full set of control variables – demographic characteristics of the released prisoner, county fixed effects, month-of-year fixed effects, and local labor market characteristics described in section 4.3.

Robust standard errors clustered at the state level in parentheses.

* p<0.01, ** p<0.05, *** p<0.10

Table 8. The Effect of ABAWD Work Requirement on Recidivism, By Race

| | Recidivate 1 Year | | | Recidivate 3 Years | | |
|---|---|---|---|---|---|---|
| | White | Black | Hispanic | White | Black | Hispanic |
| Below50 | 0.011** | 0.007*** | 0.013*** | 0.042*** | 0.021*** | 0.023*** |
| | (0.004) | (0.002) | (0.003) | (0.005) | (0.002) | (0.005) |
| Limit | 0.018** | 0.008 | 0.005 | 0.028*** | -0.002 | 0.012 |
| | (0.007) | (0.009) | (0.007) | (0.009) | (0.013) | (0.015) |
| Limit*Below50 | -0.007 | -0.005 | 0.001 | 0.001 | -0.011** | -0.001 |
| | (0.005) | (0.003) | (0.006) | (0.006) | (0.004) | (0.010) |
| Mean Outcome | | | | | | |
| All | 0.135 | 0.161 | 0.122 | 0.268 | 0.324 | 0.254 |
| Below50 | 0.141 | 0.166 | 0.127 | 0.284 | 0.334 | 0.263 |
| Above50 | 0.127 | 0.156 | 0.115 | 0.247 | 0.310 | 0.241 |
| Observations | 251,564 | 187,896 | 59,721 | 171,004 | 133,840 | 39,820 |

Note: The table reports regression results of equation (1) with a sample of prisoners released at the age between 45 and 54 by race. Below50 is an indicator of being under age 50 at the time of release. The dependent variable is recidivism measured by returning to state prison within one year or three years. ABAWD time limit is at the county level. Counties with part of its area covered by a time limit waiver are classified as no limit. All specifications include the full set of control variables – demographic characteristics of the released prisoner, county fixed effects, month-of-year fixed effects, and local labor market characteristics described in section 4.3. Robust standard errors clustered at the state level in parentheses.
* p<0.01, ** p<0.05, *** p<0.10