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Working Paper

Do SNAP work requirements work?

Upjohn Institute Working Paper, No. 19-297

Provided in Cooperation with:

W. E. Upjohn Institute for Employment Research, Kalamazoo, Mich.

Suggested Citation: Harris, Timothy F. (2019) : Do SNAP work requirements work?, Upjohn Institute Working Paper, No. 19-297, W.E. Upjohn Institute for Employment Research, Kalamazoo, MI, <https://doi.org/10.17848/wp19-297>

This Version is available at:

<https://hdl.handle.net/10419/202894>

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2019

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Citation

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December 13, 2018

ABSTRACT

The American Recovery and Reinvestment Act waived Supplemental Nutrition Assistance Program (SNAP) work requirements nationally in 2010 and broadened the eligibility for receiving waivers in subsequent years for Able-Bodied Adults without Dependents (ABAWD). From 2011 to 2016, many states voluntarily imposed work requirements, while other areas became ineligible for waivers because of improved economic conditions. Did the work requirements increase employment as intended, or did the policy merely remove food assistance for ABAWD who—despite an improving economy—still could not find employment? Using data from the American Community Survey from 2010 to 2016, I analyze the influence of work requirements on employment and SNAP participation for ABAWD. I find that work requirements significantly decreased SNAP participation and marginally increased employment for ABAWD using Difference-in-Difference-in-Differences estimation. This study contributes to the current policy debates on the effectiveness of expanding or instituting work requirements for welfare programs.

JEL Classification Codes: J21, J68, H42, H75

Key Words: Supplemental Nutrition Assistance Program, SNAP, Food Stamps, work requirements, eligibility, employment

Acknowledgments: I gratefully acknowledge funding from the W.E. Upjohn Institute for Employment Research in the form of an Early Career Research Award (ECRA). I would like to thank Bibek Adhikari, German Blanco, Jeremiah Harris, Robert Hartley, Yue Li, Dimitrios Nikolaou, Adrienne Ohler, Christopher Swann, Lewis Warren, and Aaron Yelowitz for their comments and Lydia Tetteh and Kenneth Pomeyie for their research assistance. In addition, I would like to thank the Food and Nutrition Services at the USDA for assistance compiling data on county-level waivers.

INTRODUCTION

The Supplemental Nutrition Assistance Program (SNAP)—previously known as Food Stamps—requires individuals deemed Able-Bodied Adults without Dependents (ABAWD) to work at least 20 hours per week to receive benefits.¹ In response to high unemployment rates during the Great Recession, the U.S. Department of Agriculture (USDA) implemented a nationwide waiver of the work requirement for fiscal year 2010 and expanded eligibility for the waivers in subsequent years. From 2011 to 2016, several states—despite qualifying for waivers either entirely or partially—did not apply for waivers from the federal government, while some other localities that were receiving waivers became ineligible as economic conditions improved. In this study, I use the time and geographical variation created by staggered reimplementations of work requirements, in addition to variation from an age cutoff, to analyze the effect of work requirements on both employment and SNAP participation.

The analysis is motivated by recent proposals to implement or expand work requirements for welfare programs. The controversial House version of the 2018 Farm Bill proposed expanding the upper age cutoff for SNAP work requirements and led to gridlock in Congress. Related to this proposed expansion, the Welfare Reform and Upward Mobility Act currently under consideration would extend SNAP work requirements to households with dependents.² In addition to these work requirements for SNAP, the Centers for Medicare and Medicaid Services

¹ ABAWD are defined as adults aged 18 to 49 who are neither pregnant nor living in a home with minor children. Married or cohabitating individuals may be considered ABAWD. The 2008 Farm Bill officially changed the name of the Food Stamps Program to SNAP. For consistency, I will refer to the food assistance program as SNAP throughout.

² See <https://www.congress.gov/bills/115/congress-house/bills/2832> for more information on the Welfare Reform and Upward Mobility Act.

provided new guidance in January 2018 that allows states to impose work requirements for Medicaid recipients.³ Work requirements are further being considered for housing aid (public housing) from the Department of Housing and Urban Development (HUD).⁴

Work requirements are designed to increase employment and decrease dependency on government assistance (Besley and Coate 1992). This study addresses two main questions regarding the effectiveness of SNAP work requirements. First, how did the work requirements influence the number of ABAWD receiving SNAP? Second, did the work requirements increase employment for ABAWD?

To address the SNAP participation question, I first use SNAP Quality Control (QC) data in conjunction with time and geographic variation from the implementation of work requirements. The Difference-in-Differences (DD) estimation shows that the reimposition of work requirements significantly decreased the number of ABAWD receiving SNAP benefits by 20.3 percent. Nonetheless, a locality's work requirement waiver availability is based on local labor market conditions, which—even after controlling for labor market conditions—potentially biases the results due to legislative endogeneity. Consequently, I additionally analyze the influence of work requirements on SNAP participation using data from the American Community Survey (ACS), which allows for the use of an additional source of variation created by the age cutoff for work requirements. Specifically, I compare the response of individuals aged 45–49 who are impacted by work requirements to that of individuals aged 50–54 who are not impacted by work requirements in a Difference-in-Difference-in-Differences (DDD) framework. The

³ Arkansas, Indiana, Kentucky, New Hampshire, and Wisconsin have approved waivers, and nine other states have submitted applications to have work requirements for Medicaid. See <https://www.kff.org/medicaid/issue-brief/medicaid-waiver-tracker-approved-and-pending-section-1115-waivers-by-state/>.

⁴ See <https://www.whitehouse.gov/wp-content/uploads/2018/02/budget-fy2019.pdf> for more information.

results also indicate that the work requirements significantly decreased SNAP participation (9.8 percent).

The decrease in SNAP participation could be the result of either positive exits—individuals become employed and earn enough to be disqualified from SNAP—or negative exits—individuals do not meet the work requirement and are disqualified from SNAP. The worst-case scenario would be if negative exits caused the entire decrease in ABAWD participation. This would imply that SNAP benefits were removed from individuals who did not find employment, which could potentially increase food insecurity.

To analyze how the reimposition of work requirements influences the employment status of ABAWD, I use a similar framework once again using ACS data. The DD results show no statistically significant impact of work requirements on employment. However, the baseline DDD specification shows that the imposition of work requirements causes a minimal yet statistically significant increase in the employment rate for ABAWD (0.6 percent). Nonetheless, as is common with this type of analysis, the truly affected population constitutes only a fraction of the sample used in the analysis, implying that the treatment effect may be understated (Bertrand, Duflo, and Mullainathan 2004). Consistently, I find a larger while still modest employment effect (2.0 percent increase) when I analyze a restricted sample of individuals who are more likely to be influenced by the work requirement.⁵

The combined participation and employment results illustrate that while the work requirements increased employment and in a sense “worked,” they also disproportionately

⁵ For comparison, Schochet, Burghardt, and McConnell (2008) found that Job Corps increased the employment rate by 2.4 percentage points (3.5 percent). Estimated impacts of expansions in the Earned Income Tax Credit (EITC) ranges from no effect to a 7.2 percentage point increase in the employment rate (Eissa and Liebman 1996; Meyer and Rosenbaum 2001; Hotz and Scholz 2006; Cancian and Levinson 2006).

decreased SNAP participation. The results from the restricted sample indicate that for every five ABAWD that stop receiving SNAP benefits as the result of work requirements only one additional individual became employed. Consequently, it is likely that work requirements adversely affected a significant portion of the impacted population.

This study contributes to the literature on the consequences of transfer programs. In general, the influence of transfer programs on labor supply has been well studied (Danziger, Haveman, and Plotnick 1981; Moffitt 1992; Hoynes 1997; Moffitt 2002). Several studies have analyzed the overall impact of food assistance programs on labor force participation (Fraker and Moffitt 1988; Hagstrom 1996; Keane and Moffitt 1998; Hoynes and Schanzenbach 2012; Rosenbaum 2013). In addition, there is a well-established theoretical literature exploring the complications and conditions under which work requirements may be optimal for means-tested programs (Barth and Greenberg 1971; Browning 1975; Lurie 1975; Fortin, Truchon, and Beausejour 1993; Besley and Coate 1995; Parsons 1996; Brett 1998; Cuff 2000; Moffitt 2003, 2006; Kaplow 2007; Beaudry, Blackorby, and Szalay 2009).

The empirical literature on the influence of SNAP work requirements focuses primarily on the SNAP participation effect. Using state-level data, Ziliak, Gundersen, and Figlio (2003) and Ganong and Liebman (2018) found that waivers for work requirements increase enrollment for SNAP.⁶ There is, however, little empirical analysis on the influence of SNAP on employment due to minimal cross-state or over-time variation (Hoynes and Schanzenbach 2012).⁷ The most

⁶ Ziliak, Gundersen, and Figlio (2003), analyzing an early time period, find that SNAP caseloads vary with changes in work requirements but call for substate analysis that takes into account local economic conditions. Ganong and Liebman (2018) found that the American Recovery and Reinvestment Act (ARRA), which waived work requirements nationally, increased enrollment by 1.9 million participants.

⁷ See Fang and Keane (2004) and Herbst (2017) for studies on the influence of Temporary Assistance for Needy Families (TANF) work requirements.

closely related study is Ribar, Edelhoch, and Liu (2010), which analyzes administrative Food Stamps data from South Carolina linked to unemployment insurance earnings from 1996 to 2005. They find that *duration* of Food Stamp enrollment significantly decreases due to work requirements and that individuals who faced worked requirements were more likely to exit SNAP and have earnings.⁸ This study contributes to the empirical literature by analyzing the influence of work requirements across the country—rather than a single state—in the postrecession period using quasi-experimental techniques and county-level variation.⁹ Furthermore, the study’s results on the influence of work requirements on SNAP enrollment and employment are particularly informative for policy proposals to expand work requirements to older individuals.¹⁰

POLICY BACKDROP AND CHANGES

The Food and Nutrition Service (FNS) of the USDA administers SNAP, and disbursements are made by the states. Households qualify for SNAP benefits based on income and asset tests.¹¹

⁸ Given that Ribar, Edelhoch, and Liu (2010) use administrative data on recipients, the analysis captures the policy’s influence on SNAP participants but not the influence of individuals on the margin of participation in SNAP.

⁹ An unpublished working paper, Stacy, Scherpf, and Jo (2018), also analyzes the impact of work requirements using similar variation. The study’s underlying sample, empirical estimation, and results differ from those used in this analysis.

¹⁰ A majority of states with approved or pending waivers to apply work requirements for Medicaid have work requirements that apply to individuals older than 50. See <https://www.kff.org/medicaid/issue-brief/medicaid-waiver-tracker-approved-and-pending-section-1115-waivers-by-state/>.

¹¹ Assets with a value over \$2,250 disqualify individuals from receiving SNAP. Federal guidelines specifically exclude home value from asset calculations used in the test. See <https://www.fns.usda.gov/snap/eligibility>. Furthermore, the test excludes most retirement and pension plans and counts the market value of cars over \$4,650 toward assets.

Work requirements for ABAWD SNAP recipients were instituted under the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA).¹² In particular, the act required ABAWD to work 80 hours a month, participate in a work program for 80 hours a month, or comply with a workfare program to be eligible for SNAP. Active job search does not satisfy the work requirement. Recipients are eligible to receive a total of three months of SNAP benefits in a 36-month period without meeting the work requirement. Under the law, state governments may request waivers for local areas (typically counties) or for the entire state based on the locality's economic conditions.

States may also combine geographical areas when submitting waiver applications, which has led to significant gerrymandering of areas submitted to the USDA to increase waiver coverage.¹³ For example, a state may group a high-unemployment county with a low-unemployment county to receive a waiver for the combined geographical area.

For the analysis, I use the waiver status defined at the county level.¹⁴ There are many different ways to qualify for a waiver, including: “(1) an unemployment rate over 10 percent for the latest 12-month (or 3-month) period; (2) a historical seasonal unemployment rate over 10 percent; (3) a Labor Surplus Area designation from DOL (Department of Labor); (4) a 24-month average unemployment rate 20 percent above national average; (5) a low and declining employment-population ratio; (6) a lack of jobs in declining occupations or industries; (7)

¹² Non-ABAWD have minimal work requirements, including not voluntarily quitting or reducing hours and accepting a position if offered.

¹³ See *Wall Street Journal* (2018) for further discussion.

¹⁴ Waivers that are granted at a smaller geographic level, such as city, are counted in the analysis if the population of the city (or group of cities) constitutes a majority of a county's population based on the 2010 Decennial Census. Waivers granted to Native American Reservations were not included in the analysis. A county is classified as having a work requirement if the county had work requirements for at least three quarters of the year.

described in an academic study or publication as an area with a lack of jobs; or (8) qualifies for extended unemployment benefits” (BLS, 2017).

In 2008, Congress passed the Temporary Emergency Unemployment Compensation (EUC) program, which extended through December 28, 2013.¹⁵ The Bush administration clarified that states that qualified for EUC would also be eligible for statewide work requirement waivers for SNAP. Eligibility for EUC satisfied the criteria regardless of actual take-up of the EUC. States were eligible to qualify for a 12-month waiver up to 12 months from the “trigger date.”¹⁶ Consequently, a majority of states qualified for statewide waivers up to January 2016 based on a trigger notice from December 2013.¹⁷ For a majority of the states, the ending of the EUC program in 2014 translates directly into the reimposition of work requirements in 2016. Although some other qualifications for receiving a waiver mentioned above were used, waivers based on EUC constituted a vast majority of all justification for waivers by state governments over the sample period.

In response to high unemployment rates, the American Recovery and Reinvestment Act (ARRA) of 2009 temporarily suspended the time limit for waivers in all states from April 2009 through September 2010 (the entirety of fiscal year 2010). This policy change provides the starting point for the analysis, as all states had the same waiver status in 2010. Figure 1 highlights the significant change in ABAWD participation showing a sharp increase from the ARRA suspension of time limits in conjunction with the Great Recession.

¹⁵ See https://ows.doleta.gov/unemploy/supp_act.asp.

¹⁶ The 6 percent requirement to be tier 2 started in June 2012. See <https://www.cbpp.org/research/food-assistance/waivers-add-key-state-flexibility-to-snaps-three-month-time-limit>. When all states were eligible for both the first and second tiers of EUC, USDA required states to be eligible for at least the third tier to qualify for a waiver. Trigger Notice reports (weekly): https://ows.doleta.gov/unemploy/supp_act.asp.

¹⁷ Appendix Figure A1 illustrates the year states were no longer eligible for statewide waivers based on qualifying for EUC.

I construct data on work requirement waiver status from official approval letters sent from the USDA to individual states in response to state applications for waivers from 2010 to 2016. Figure 2 illustrates the year in which work requirements were imposed following the nationwide waiver in 2010 from the ARRA.¹⁸ There is significant variation originating primarily at the state level and less—while still considerable—variation at the county level.¹⁹

The decision to impose work requirements is endogenous to the state's political environment and also labor market conditions. For reference, Figure 3 shows the county unemployment rate in 2010 based on data from the Bureau of Labor Statistics (BLS). The correlation between this figure and Figure 2 highlights the importance of controlling for local labor market conditions in the analysis. The figure also highlights significant heterogeneity in local unemployment rates in many circumstances while the waiver application was filed and approved at a state level.

There is a correlation between states that impose work requirements earlier and the year states fail to qualify for EUC-based waivers. Nonetheless, a total of 14 states voluntarily impose work requirements while they still qualify for statewide waivers.²⁰

States are also allotted discretionary exemptions to the waiver requirement equal to 15 percent of the state's projected caseload of ABAWD. For each exemption, the state may extend eligibility for one month for an ABAWD that would otherwise be ineligible.²¹ These exemptions

¹⁸ The maps use shapefiles from the Census Bureau. See https://www.census.gov/geo/maps-data/data/cbf/cbf_counties.html.

¹⁹ See Appendix Figure A2 for waiver status by year throughout the sample period.

²⁰ Appendix Table A1 lists the states that voluntarily imposed work requirements along with the year they were imposed and the year that they no longer qualified for statewide waivers based on EUC.

²¹ See <https://www.fns.usda.gov/snap/abawd-15-percent-exemptions>.

are rolled over from year to year if not used.²² The use of these exemptions potentially lessens the employment effects from the reimposition of work requirements and will consequently be controlled for in the empirical specifications.

State Incentives

To understand the decision of states to apply for waivers, it is imperative to recognize the incentives faced by state governments. The federal government pays for the benefits of SNAP recipients, while the administrative costs are split between the federal and state governments. If states do not apply for waivers, then the amount of benefits from the federal government likely decreases as fewer individuals qualify for the program. All else equal, administrative costs decrease with a decline in the number of recipients.

Nonetheless, administrative costs could also increase with work requirements, given the administrative burden associated with verifying employment (eligibility determination), tracking the number of months in a three-year period an individual has received SNAP benefits without meeting the work requirement, determining the use of 15 percent exemptions for ABAWD, and administering job training programs. Overall, it is reasonable to assume that the administrative burden increases in the absence of waivers.

If state-level costs likely increase and benefits funded by the federal government decrease, why would states voluntarily implement SNAP work requirements? Statements by state officials suggest that the decision is determined by political ideology rather than finances. Kansas and Maine are examples of states that voluntarily enforced work requirements despite

²² The Balanced Budget Act of 1997 (BBA) and Agricultural Research, Education, and Extension Act of 1998 (AREERA) added the 15 percent exemptions and expanded funds to provide work program opportunities to ABAWD.

qualifying for statewide waivers. The Kansas Department for Children and Families Secretary, Phyllis Gilmore, justified the work requirement by saying, “We know that employment is the most effective way to escape poverty. . . . As long as federal work requirements are met, no one will lose food assistance; the law only affects those individuals who are capable of working and have no dependent children.”²³ Maine’s governor, Paul LePage, in a press release announcing the decision to not apply for a waiver, said, “People who are in need deserve a hand up, but we should not be giving able-bodied individuals a handout. . . . We must continue to do all that we can to eliminate generational poverty and get people back to work. We must protect our limited resources for those who are truly in need and who are doing all they can to be self-sufficient” (Chokshi 2014).

Individual Incentives

The work requirements are designed in part to incentivize ABAWD to find employment with earnings that would allow for self-sufficiency without SNAP benefits. For a household of one, these “positive exits” would occur if the recipient worked the required 80 hours per month at an hourly rate of \$16.34 (gross monthly income limit is \$1,307).²⁴

As ABAWD find work and earn income, the SNAP allotments taper off. The maximum allotment for a household of one is \$192, and the minimum amount is \$16. Someone making roughly the federal minimum wage (\$7.25 per hour) for 80 hours a month would receive approximately \$100 a month in SNAP benefits. Throughout the entire earnings profile, as

²³ <http://www.dcf.ks.gov/Newsroom/Pages/09-04-2013.aspx>.

²⁴ SNAP benefits (allotments) are calculated based on the maximum amount allowed less 30 percent of net income. Net income for ABAWD is calculated by taking gross income less 20 percent of earned income less \$160 (standard deduction for a household of one) less housing costs in excess of half of the post deduction value.

ABAWD work more, total income (wage earnings plus SNAP allotments) unambiguously increases. Nonetheless, in the absence of a work requirement, for some individuals, the disutility associated with working may be sufficiently high to overcome the additional compensation. The implementation of a work requirement could theoretically induce those individuals at the margin to seek gainful employment. Given that this study focuses on ABAWD, many confounding factors from multiple-program participation are irrelevant. For example, ABAWD would not qualify for Temporary Assistance for Needy Families (TANF) and Women and Infants and Children (WIC). The Earned Income Tax Credit (EITC) would serve to encourage ABAWD to find employment rather than discourage earnings.²⁵ Nonetheless, housing vouchers issued through the Department of Housing and Urban Development (HUD)—which adjust based on income—could decrease the monetary gains from working. Although multiple-program participation might provide disincentives for employment, these programs will bias the results only inasmuch as there are changes that are correlated with the reimposition of work requirements.

Overall, the imposition of work requirements should unsurprisingly incentivize work for ABAWD. Nonetheless, for the policy to be effective, it necessitates employability by ABAWD receiving SNAP benefits. Criminal backgrounds (felony charges, probation/parole, Driving Under the Influence convictions), history of drug use, terminations from previous employment, lack of education, and lack of work history are all complications that could prevent ABAWD

²⁵ Variation of the EITC at the state level is minimal for ABAWD. Any underlying differences in EITC by a state would be picked up by the locality fixed effects, inasmuch as there were no changes to the state-level EITC programs during the sample period.

from getting employment despite effort on their part. Furthermore, incorrect assignment of ABAWD status or perceived misassignment could provide a hurdle for employment.²⁶

Another consideration is that some ABAWD might be employed, but their employment is not properly reported. If individuals report their income on tax forms, the potential lost income due to taxes might be greater than the SNAP benefits they would receive if they accurately reported being employed.²⁷

DATA

Quality Control Administrative Data, 2010–2016

To analyze how work requirements influence participation in SNAP by ABAWD, I use SNAP QC data. States are required to select a random sample of households that participate in SNAP using methodology approved by the FNS for quality control purposes.²⁸ The required number of observations collected at the state level is a function of the statewide caseload, with sample requirements ranging from 300 to 1,200 cases per year. The data are assigned weights to create a representative sample of SNAP participants at the state level.²⁹

²⁶ One in three ABAWD in Franklin County, Ohio, reported a physical or mental limitation but were not classified as disabled and were consequently subject to work requirements, according to a survey conducted by the Ohio Association of Foodbanks. See http://admin.ohiofoodbanks.org/uploads/news/ABAWD_Report_2014-2015-v3.pdf.

²⁷ For EITC, the maximum credit available for individuals without a qualifying child is \$510. Federal Insurance Contributions Act (FICA) taxes, currently at 12.4 percent, might serve as an adequate incentive to not report income to the FDA to qualify for SNAP benefits. Individuals faced with under the table employment must weigh the benefits of reporting employment (SNAP allotments plus EITC) in comparison to the additional costs (payroll taxes).

²⁸ See Klerman and Danielson (2011) for an example of SNAP QC data use in a DD framework.

²⁹ These data are further used to assign 15 percent exemptions based on the estimated number of ABAWD.

The original sample consists of 345,867 households surveyed in the years 2010 to 2016. Table 1 presents summary statistics by year for the 71,522 surveyed individuals that are classified as ABAWD.³⁰ Over the sample period, the proportion of males has decreased slightly. From 2013 to 2016, the proportion of Hispanic ABAWD has increased, whereas the proportion of non-Hispanic blacks has decreased.³¹ The table further shows that the largest share of ABAWD recipients is high school graduates (53.5 percent in 2016), with the next largest group consisting of high school dropouts (24.6 percent in 2016).

Recipients with college degrees account for only 3.7 percent of the sample. Nonetheless, there is still a significant portion of the sample that did not report their highest level of education. Overall, these data give a general idea of the basic characteristics of ABAWD receiving SNAP benefits.

The table also shows a decreasing trend in the use of job training programs over the sample period and a slight increase in the proportion of ABAWD from households classified as “working poor.” In 2015 and 2016 respectively, 22.7 percent and 26.0 percent of ABAWD on SNAP were employed.³² The change in working status could be a result of increased opportunities from the recovery or potentially due to the reimplementation of work requirements. Lastly, the table shows an increase in the number of ABAWD receiving SNAP benefits (based on the weighted sample sizes) from 2010 to 2013, followed by a decreasing trend thereafter. The average monthly benefit for ABAWD in 2016 was \$163.³³

³⁰ Technically, the group is classified as “nondisabled adults aged 18 through 49 who live in childless households.”

³¹ The change in the proportion with an unreported race in early years convolutes a discussion of earlier changes in race/ethnicity.

³² The individual-level working statistic was added in 2015.

³³ See <https://fns-prod.azureedge.net/sites/default/files/snap/nondisabled-adults.pdf>.

I aggregate these data to the state level using the weights provided by the FSN, which I use to analyze the influence of work requirements on ABAWD enrollment. Appendix Table A3 shows the weighted count of ABAWD by state from 2010 to 2016.

American Community Survey PUMS, 2010–2016

To analyze both the program participation and employment responses of ABAWD, I use the ACS. The ACS is a nationwide survey administered by the Census Bureau that asks detailed questions about population, employment, and individual characteristics. The ACS samples approximately one percent of the U.S. population. Like the Decennial Census, participation in the ACS is mandatory, and participants can complete the survey online or by mailing in a paper questionnaire. The ACS identifies all 50 states and the District of Columbia and additionally identifies localities known as Public Use Microdata Areas (PUMAs) that can be mapped into counties.³⁴ The major reasons for using the ACS include the availability of fine geographic information and large sample sizes, which are essential for analyzing the impact of a policy on a relatively small population (1.7 percent of the working age population in 2016). While a panel dataset would be ideal for this analysis, sample sizes are prohibitively small in commonly used panel surveys.

I use data from 2010 to 2016, starting with a sample of 13.3 million unique working-age individuals (age 18 to 64). I exclude individuals with disabilities and individuals with a minor living in the household to identify a sample of ABAWD. Furthermore, I exclude students from

³⁴ There are approximately 2,300 PUMAs that are areas with at least 100,000 people nested entirely within a state. I use a crosswalk from the Missouri Data Center to assign observations from PUMAS into counties. For PUMAs that map into multiple counties, I assign the observation to the county that has the largest population based on the 2010 Decennial Census. See <http://mcdc.missouri.edu/websas/geocorr14.html>.

the sample, as they are generally ineligible for SNAP benefits.³⁵ In addition, I limit the sample to U.S. citizens in the continental United States who are not institutionalized, active duty military, or in foster care. Given that college graduates constitute only a small minority of ABAWD receiving SNAP, I exclude them from the sample. In section VI, I analyze the sensitivity of the results to the choice of further sample restrictions.

Table 2 compares the ACS sample with the QC sample.³⁶ Overall, the ACS sample largely aligns with the QC data with regard to gender and age. Nonetheless, the ACS sample notably has a larger share of whites, a lesser proportion of high school dropouts, and a significantly higher employment rate. In addition, the ACS has a significantly larger weighted sample size than the QC data, which implies that any employment effect found will likely be understated, as many unaffected individuals are included in the ACS sample. Nonetheless, the policy will affect not only those that are ABAWD receiving SNAP but also those individuals that are on the margin of receiving SNAP as an ABAWD.

WORK REQUIREMENTS AND SNAP PARTICIPATION

Difference-in-Differences

Prior to analyzing the influence of work requirements on employment, I first analyze the policy's effect on the SNAP participation of ABAWD. I use the two different samples to estimate the impact of work requirements on SNAP participation. The QC data allow for a direct analysis of the influence on ABAWD program participation but do not allow for county-level analysis or

³⁵ See <https://www.fns.usda.gov/snap/facts-about-snap> for more information.

³⁶ See Appendix Table A2 for summary statistics by year for the ACS sample.

estimation that uses variation created by the upper age limit for work requirements. In contrast, the ACS sample can use county-level variation and analyze differences around the age 49 cutoff. Nonetheless, the ACS contains limited information on SNAP participation. The survey asks if anybody in the household received SNAP in the last 12 months. Given that the question is asked at the household level, the estimated effect of work requirements would be biased toward zero, as an individual ABAWD may lose SNAP but another member of the household continues to receive the benefit. Furthermore, given that the question inquires about receipt of SNAP over the last 12 months, respondents could have lost SNAP benefits due to the reimposition of work requirements in the year of the survey, but still accurately report receiving the benefit in the last year. Once again, this imprecision in measurement could bias the influence of work requirements toward zero. Lastly, given that the truly “treated” population composes a fraction of the ACS sample, any treatment effect will be diluted and biased toward zero. Notwithstanding these biases, I conduct the analysis on the ACS sample, as it allows for estimation using county-level and age-limit variation and allows for a more direct comparison to the employment analysis conducted hereafter on the same data.

For the analysis of the QC sample, I estimate the following regression:

$$(1) \quad ABAWD_{jt} = \beta_1 WorkReq_{jt} + \beta_2 X_{jt} + \alpha_j + \gamma_t + \varepsilon_{jt}$$

where $ABAWD_{jt}$ is the number of ABAWD in state j during time t (fiscal year) per 1,000 individuals in the state. $WorkReq_{jt}$ is an indicator for the state reimposing work requirements.³⁷

The vector X_{jt} contains time-varying state controls, including the unemployment rate (from

³⁷ I construct the indicator by taking the proportion of counties with work requirements weighted by county population and the number of months during a fiscal year that the work requirements were in effect. If the percent of the population/fiscal year is larger than 50 percent, then the dummy variable indicates that there is a work requirement for the state.

the BLS), Quarterly Workforce Indicators aggregated to the annual level (from the Census Bureau), political party of the state legislature and governor (Republican, Democrat, or split), and an indicator for Medicaid expansion under the Affordable Care Act (ACA). Furthermore, the vector includes the number of 15 percent exemptions granted by the state. As states grant more individual exemptions, the influence of the work requirement is lessened. Locality fixed effects will pick up underlying stigma associated with SNAP and state-level administration of the program.³⁸ Any changes in these characteristics will bias the results only inasmuch as they are correlated with the decision to impose work requirements.

This estimation will establish whether exits from SNAP were due to the reimposition of work requirements. Inasmuch as there is legislative endogeneity (impose work requirements because of a better labor market) after controlling for labor market conditions, the negative exits will be mitigated and the positive exits will be exacerbated. Consequently, it is unclear the direction of any bias originating from legislative endogeneity would have on the estimated effect of work requirements on SNAP participation.

Figure 4 provides graphical evidence for a significant effect of work requirements on program participation. Figures 4a, 4b, 4c, and 4d plot the number of ABAWD in states that imposed work requirements in 2013 (New Hampshire, Utah, Vermont, and Wyoming), 2014 (Iowa, Kansas, Minnesota, Ohio, Oklahoma, and Virginia), 2015 (Maine and Wisconsin), and 2016 (Alabama, Arkansas, Colorado, Florida, Idaho, Indiana, Maryland, Massachusetts, Mississippi, Missouri, New York, Pennsylvania, South Carolina, and Washington), respectively. Overall, there was a distinct decrease in the number of ABAWD receiving SNAP following the

³⁸ Previous studies have found that state-level administration, including recertification frequency, leniency of exemptions and rules, and categorical eligibility, influences SNAP participation (Kornfeld 2002; Kabbani and Wilde 2003; Ratcliffe, McKernan, and Finegold 2008; Ribar, Edelhoch, and Liu 2008, 2010).

implementation of work requirements for states that reimposed the work requirements in 2013, 2014, and 2016. For 2015, the number of ABAWD was already decreasing prior to the implementation. Nonetheless, the rate of decrease increases following the reimposition of work requirements. Although these figures do not explicitly model the changes in the ABAWD population in other states, they do suggest that work requirements had a significant effect on program participation.

For the analysis of SNAP participation using the ACS sample, I estimate the following regression:

$$(2) \quad SNAP_{ijt} = \delta_0 + \delta_1 WorkReq_{jt} + \delta_2 Z_i + \delta_3 X_{jt} + \alpha_j + \gamma_t + \varepsilon_{ijt}$$

where $SNAP_{ijt}$ is an indicator for SNAP participation for individual i in locality j in year t and $WorkReq_{jt}$ is one if the locality has a work requirement in place (i.e., does not have an active waiver).^{39, 40} X_{jt} is a vector containing locality labor market variables, including the county unemployment rate (from the BLS), the number of stable jobs per 1,000 individuals (from Quarterly Workforce Indicators), political affiliation of state legislature/governor, and an indicator for Medicaid expansion under the ACA. Z_i is a vector of individual characteristics, including gender, race, age bin, education, household composition, homeownership status, and wage income of family members. Locality and time fixed effects are given, respectively, by α_j and γ_t .

Table 3 presents the DD results for both QC and ACS data analysis. The first column reports the results from the QC analysis and shows that work requirements decreased the number

³⁹ As previously discussed, the individual indicator for SNAP participation is derived from a household-level survey question and is consequently measured with error.

⁴⁰ I designate a locality as having a work requirement if there is an active waiver for three months or less for the calendar year.

of ABAWD receiving SNAP per 1,000 by 2.71 from a base of 13.4 (20.2 percent).⁴¹ The second column illustrates a consistent qualitative result, with work requirements decreasing SNAP participation by 1.1 percentage points (8.4 percent) for the ACS sample. The difference in magnitude between the two results could be due to the attenuation bias described for the ACS sample above.

To evaluate the parallel trends assumption, I further estimate the following event study model for the QC model.

$$(3) \quad ABAWD_{jt} = \sum_{a=-m}^q \eta_a WorkReq_{jt}(t = k + a) + \theta_1 X_{jt} + \alpha_j + \gamma_t + \varepsilon_{jt}$$

where m is the number of “leads” and q is the number of “lags” of the treatment effect. Failure to reject the hypothesis that $\eta_a = 0 \forall a < 0$ provides support for the parallel trends assumption. Following the same general setup as given in Equation 3, I also estimate an event study for the ACS sample.

Figure 5 presents the results for both models. The figure shows that the null hypothesis of no influence prior to the reimposition of the work requirement cannot be rejected in support of the parallel trends assumption for both the QC and ACS models. The QC event study shows a significant decrease in the number of ABAWD in the year of reimposition of work requirements, with the effect becoming statistically significant thereafter. For the ACS model, the effect remains statistically significant for the first couple of years following the reimposition of the work requirement but becomes statistically insignificant by the third year.

⁴¹ When only states that qualified for a statewide waiver based on EUC were analyzed (i.e., only voluntary work requirements imposed), the point estimate and level of significance were nearly identical.

Difference-in-Difference-in-Differences

Even after controlling for local labor market conditions, there is still the concern of legislative endogeneity. If states imposed work requirements due to improving economic conditions not captured by the control variables, then the results on SNAP would be biased downward, leading to findings of larger effects. Alternatively, if states impose work requirements in response to increasing dependence on welfare programs, then the results could be biased toward zero. The following DDD specification leverages the age cutoff for work requirements to mitigate these concerns of legislative endogeneity.

$$(4) \quad SNAP_{ijt} = \Gamma_0 + \Gamma_1 WorkReq_{jt} \times 1(Age \leq 49_i) + \Gamma_2 WorkReq_{jt} + \Gamma_3 1(Age \leq 49_i) + \Gamma_4 X_{jt} + \Gamma_5 Z_i + \alpha_j + \gamma_t + \varepsilon_{ijt}$$

where $WorkReq_{jt}$ is one if locality j has a work requirement in year t and $1(Age \leq 49_i)$ equals one if the individual is less than or equal to age 49. The sample is restricted to individuals aged 45 to 54, with the control group being individuals aged 50 to 54 who were not subject to the work requirement regardless of the waiver status. The main coefficient of interest is Γ_1 . This analysis is informative for individuals around age 49 but is not necessarily representative of the entire sample. Nonetheless, the results for this age group are especially relevant, as the proposed Farm Bill increases the age limit for work requirements from age 49 to age 59.

Table 4 reports the finding from the DDD along with results from stratified samples. The first column shows that work requirements significantly decreased SNAP participation by 0.9 percentage points (9.8 percent). The remaining columns show that males and individuals without a high school diploma have the largest decrease. The results also show that whites appear to be more impacted relative to blacks, but there is a considerable difference in the sample sizes analyzed.

WORK REQUIREMENTS AND EMPLOYMENT

The above analysis provides evidence that work requirements caused ABAWD to exit SNAP. Nonetheless, the estimation does not establish if exits were positive—individuals met the work requirements and earned an adequate income to be disqualified from SNAP—or negative—individuals did not meet the work requirements and were disqualified from SNAP. The merits of imposing work requirements are greater if the exits were primarily positive, and the value diminishes if the exits were mostly negative.

The regression specifications are the same as those presented in Equations 2 and 4, except I use an indicator for being employed as the dependent variable.⁴² Similar justification for the use of the DDD is also valid. If states imposed work requirements because of improving economic conditions not captured by the control variables, then the results on employment would be biased upward, leading to findings of larger employment effects. Alternatively, if states impose work requirements in response to increasing dependence on welfare programs, then the results could be biased toward zero. Consequently, the preferred specification is the DDD, which mitigates concerns of legislative endogeneity.

Table 5 presents the results for the estimated effect of work requirements on employment. The first column reports the DD estimate, which does not have a statistically significant response. The second column reports the DDD estimate and indicates that the work requirement caused a 0.5 percentage point increase in the employment rate (0.6 percent). The latter columns present stratified results and show a statistically significant albeit economically insignificant

⁴² I use “civilian employed, at work” from the employment status recode variable for my indicator of employment.

response for males (0.8 percent increase). The impacts on females, whites, and blacks all have statistically insignificant coefficients. There is, however, a statistically and economically significant response for high school dropouts (2.9 percent increase). The significant response for this group could be due to the subsample containing individuals that a SNAP work requirement is more likely to influence relative to the full sample analyzed.

RESTRICTED SAMPLE ANALYSIS

As the policy should influence only those individuals that were receiving SNAP benefits or that are on the margin of qualifying for SNAP, I restrict the sample based on earned income (for those that are employed in the sample).⁴³ There is a trade-off between restricting the sample too far such that it is unrepresentative of the affected population and not restricting the population enough such that the impact of the policy is diluted by the inclusion of non-affected individuals in the sample. To illustrate, it is highly unlikely that an individual who makes \$100,000 a year would be influenced by a work requirement for SNAP, and their inclusion in the sample would bias the treatment estimate toward zero. Alternatively, if the sample were restricted too much, then the estimates of the treatment effects would not be representative of the effects on the population. To determine appropriate income restrictions, I use information obtained from the Survey of Income and Program Participation (SIPP). The SIPP is a nationally representative survey that follows respondents over time. After limiting the sample to ABAWD, I analyze the wage earnings of ABAWD (conditional on being employed) that were enrolled in the SNAP

⁴³ Ingram and Horton (2016) find that the average annualized wage of employed ABAWD that exit the SNAP program in Kansas was \$13,304.

program in the previous wave. The underlying assumption to any restriction on wage earnings is that the employment decision of individuals with high earning potential (or high earnings) is likely unaffected (or minimally affected) by any work requirement for SNAP.⁴⁴

Table 6 present the results for the DDD estimates of the influence of work requirements on SNAP participation and employment based on different levels of restrictions. The first column includes the estimates from the main specification again for comparison. The second and third columns restrict wage earnings to be less than the 95th percentile (\$56,000) and 75th percentile (\$28,000) of wage earners based on the earnings distribution of individuals that exited SNAP in the SIPP sample. The fourth column limits the sample to individuals whose family's wage earnings were not in the upper quartile for the remaining sample ($> \$50,000$), as individuals would not be as influenced by the work requirement if they could rely on family members for financial support. The same restrictions are subsequently applied for the SNAP regressions.

As shown in the first half of the table, the point estimate for the DDD coefficient for the employment effect consistently increases with more restrictive samples, and the mean employment rate consistently decreases. The increase in the point estimate along with the decrease in the mean employment rate causes the percent change in employment to increase from 0.6 percent to 2.0 percent. These results are consistent with the treatment effect being diluted in the main specifications due to the inclusion of individuals that are likely not treated. Given these trends, it is likely that if the sample could be restricted to the truly impacted population, then the point estimate would increase and the mean employment rate would decrease, further resulting in an even larger percent change in employment.

⁴⁴ Appendix Figure A3 shows the distribution of wage earnings for this population with a median wage income of \$19,207.

In the latter half of the table, the point estimate for the influence of work requirements on SNAP participation increases in magnitude (more negative) as more sample restrictions are applied. However, by construction, the sample has a higher proportion of SNAP recipients with the addition of restrictions. Consequently, the estimated percent change in SNAP participation is stable across the sample restrictions.

ROBUSTNESS AND ALTERNATIVE OUTCOMES

Table 7 analyzes the sensitivity of the results to changes in the age range used for the outcome of employment. The first column reports the baseline result with an age range from 45 to 54 for comparison. The second and third columns restrict the sample to individuals aged 47 to 52 and 48 to 51 respectively. The point estimates are stable across the first three columns, but the standard errors increase, resulting in statistically insignificant effects. The latter three columns replicate the analysis again but use the restricted sample based on individual and family earnings. For these regressions, the standard errors once again increase, but the results remain statistically significant. Overall, the point estimates appear to be relatively stable with changes in the sample age ranges used, but the standard errors increase in part because of the accompanying decrease in sample size.

Table 8 conducts a similar analysis for the specifications that analyze the influence of work requirements on SNAP participation. As shown, the point estimates decrease slightly with the more restrictive samples without the corresponding increase in standard errors shown in the previous table.

To test if the work requirement is influencing a demographic that it should not, I analyze how able-bodied adults *with* dependents—who are not directly impacted by a SNAP work

requirement—respond to the changes. As shown in Table 9, able-bodied adults *with* dependents do not respond to changes in work requirements, providing additional support that the effects found on employment and SNAP participation are due to the work requirements.

In addition to working, ABAWD receiving SNAP may satisfy the work requirement by participating in a qualified job training program. If the use of these programs increased due to the reimposition of work requirements, then the policy’s impact would be understated by only analyzing employment responses. To gauge the influence of these programs, I once again use QC data and run the same regression as presented in Equation (1), except the dependent variable is the percent of ABAWD using job training programs at the state level. Table 10 presents the results, which do not indicate a statistically significant response to the use of job training programs from work requirements. Therefore, although increased use of job training programs is a potential confounding factor for the main analysis, these results lessen the concern.

Another possible way that an ABAWD could not work but still receive SNAP benefits is through reclassification as a disabled individual (i.e., not “Able-Bodied”). The second column of Table 10 presents the results of regressing Social Security Disability Insurance (SSDI) applications at the state level on work requirements and labor market conditions.⁴⁵ Even though on the margin work requirements might theoretically increase disability applications, there is not a statistically significant response in the number of individuals applying for SSDI as a result of the reimposition of work requirements based on this specification.

⁴⁵ I use SSDI applications from SSA State Agency Monthly Workload Data as the dependent variable. See <https://www.ssa.gov/disability/data/ssa-sa-mowl.htm>.

DISCUSSION OF RESULTS

Overall, for the DD specification using the entire age range for ABAWD, work requirements decreased SNAP participation and did not have a statistically significant impact on employment for ABAWD. However, the DDD analysis that focuses on individuals around the age 49 cutoff finds both a significant impact on SNAP participation and employment. Nonetheless, I find that the SNAP participation effect is larger than the employment effect. Taken literally, the estimated percent changes from the restricted samples (see Table 6) imply that for every five individuals who stop receiving SNAP because of the work requirement there is only one individual that becomes employed (9.8 percent decrease in SNAP and a 2.0 percent increase in employment).⁴⁶ It is important to note that some of the increase in employment could come from individuals that met work requirements but still qualified for SNAP benefits. Furthermore, the magnitudes vary, depending on the sample analyzed. Lastly, these local average treatment effects are not necessarily representative of the effect on the entire ABAWD population but are particularly informative for policy debates surrounding the expansion of work requirements to older individuals.

CONCLUSION

Following the Great Recession, states and localities reinstated work requirements for ABAWD receiving SNAP benefits. The reimplementation of work requirements provided the

⁴⁶ This finding from the restricted sample is similar to the finding from the analysis conducted on the high school dropout sample without earning restrictions (See Tables 4 and 5).

unique variation necessary to estimate the impacts of work requirements on both SNAP participation and employment rates. I find that work requirements significantly decreased the number of ABAWD receiving SNAP benefits and increased employment for the oldest group of ABAWD (around age 49). Overall, the work requirements to a certain extent “worked” in that they decreased SNAP participation and increased employment. Nonetheless, the magnitudes of the increase in employment are modest, whereas the decrease in SNAP participation is fairly robust.

How applicable are these results to other proposed or implemented work requirements? Arguably, ABAWD should be the most responsive to work requirements, as they do not have dependents at home, have no disabilities, and are of a working age. Policies that seek to expand work requirements to other households—such as those with dependents—likely will have smaller employment effects than those found in this study. Nonetheless, the monetary value of SNAP benefits is modest in comparison to other means-tested programs, including Medicaid and housing vouchers. All else equal, the incentive to find employment increases as the value of the potential lost benefit increases. Lastly, in comparison, SNAP work requirements for ABAWD are more stringent than work requirements proposed for Medicaid work requirements. For example, in Arkansas, recipients may satisfy the requirement through volunteer activities or job search, neither of which satisfy SNAP work requirements. This increased flexibility should mitigate negative exits from the program but potentially lessen positive exits. Overall, this study is informative for other proposed work requirements, but it is important to take into account and study the influence of these differences.

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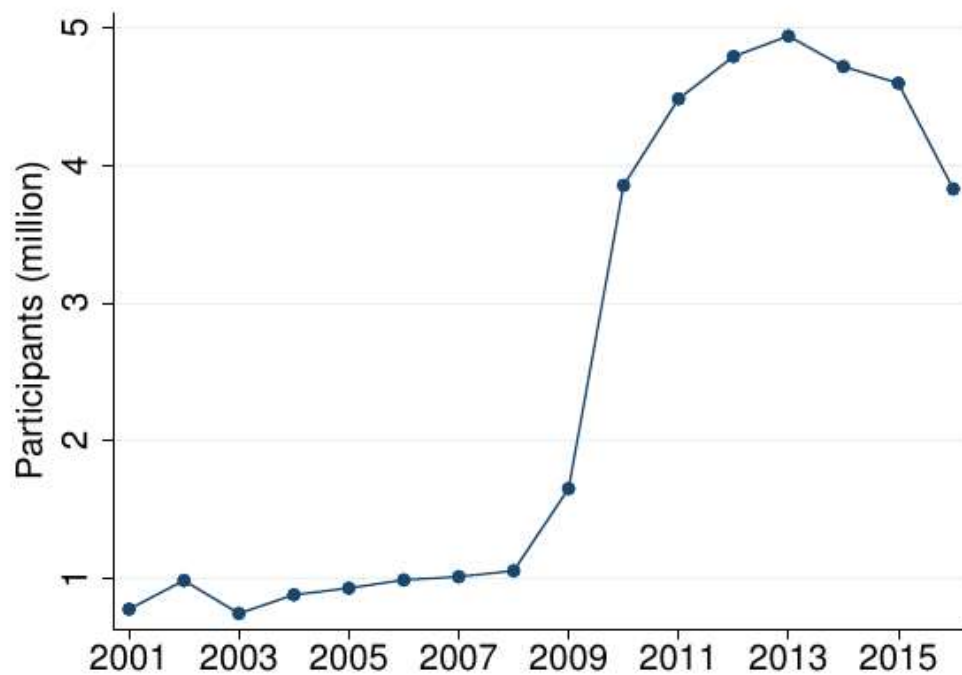
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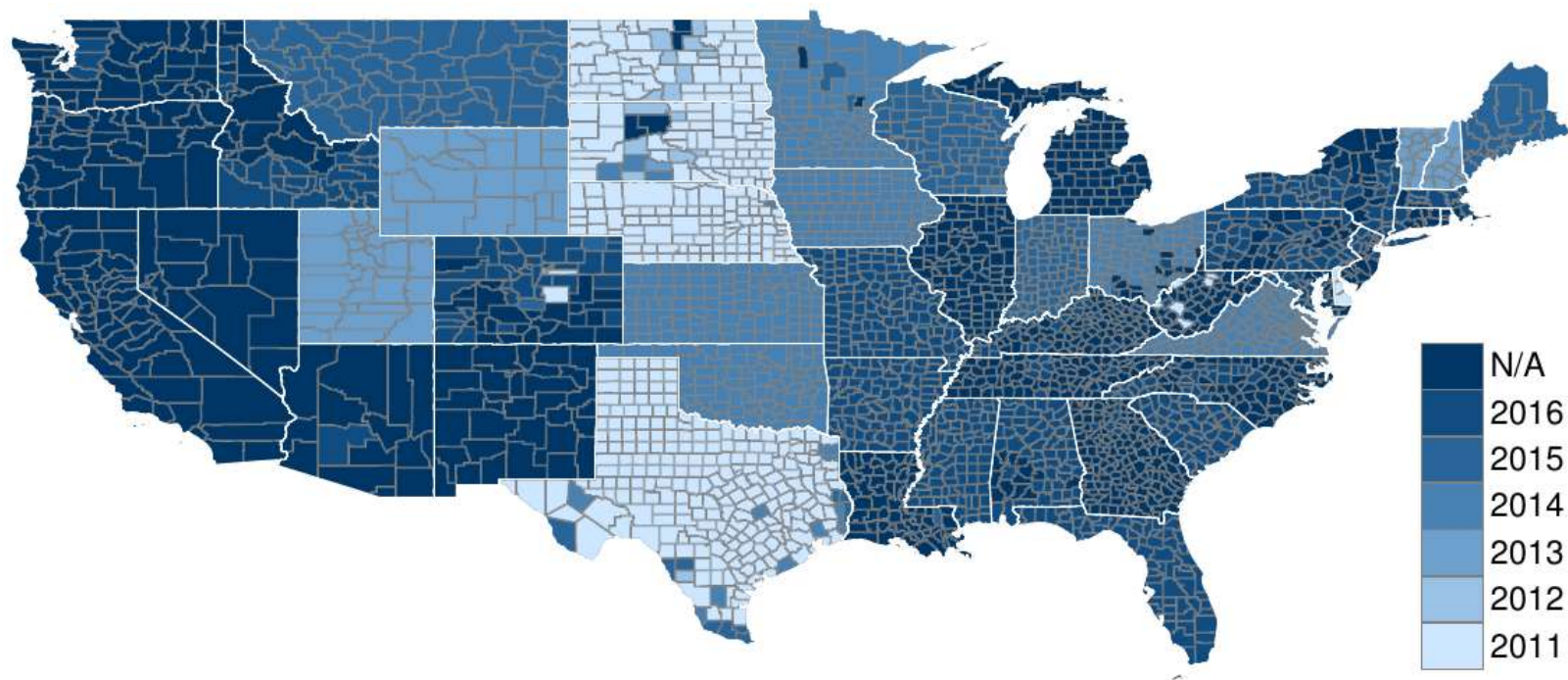
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Figure 1 ABAWD SNAP Participation



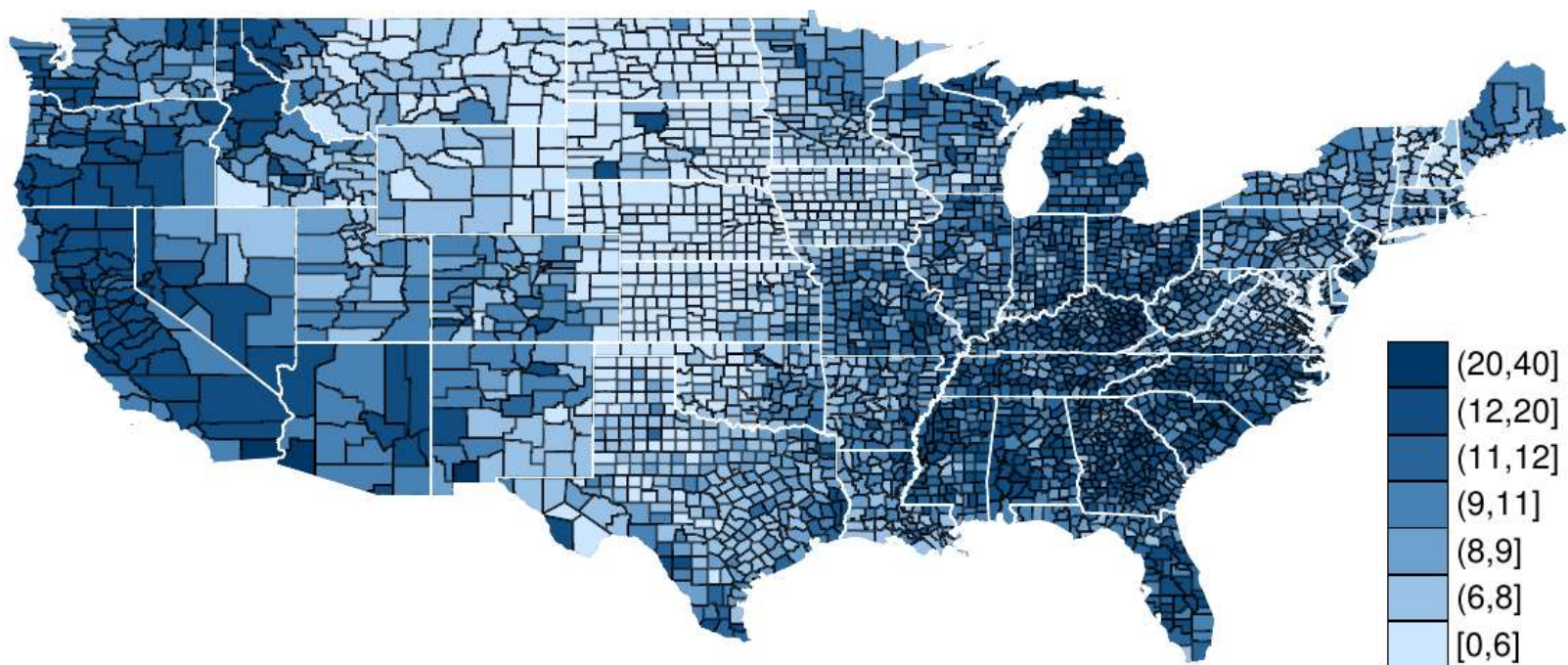
NOTE: Data from the “Characteristics of Supplemental Nutrition Assistance Program Households” reports for fiscal years 2001 to 2016 published by the USDA.

Figure 2 Year Work Requirements Were Reimposed



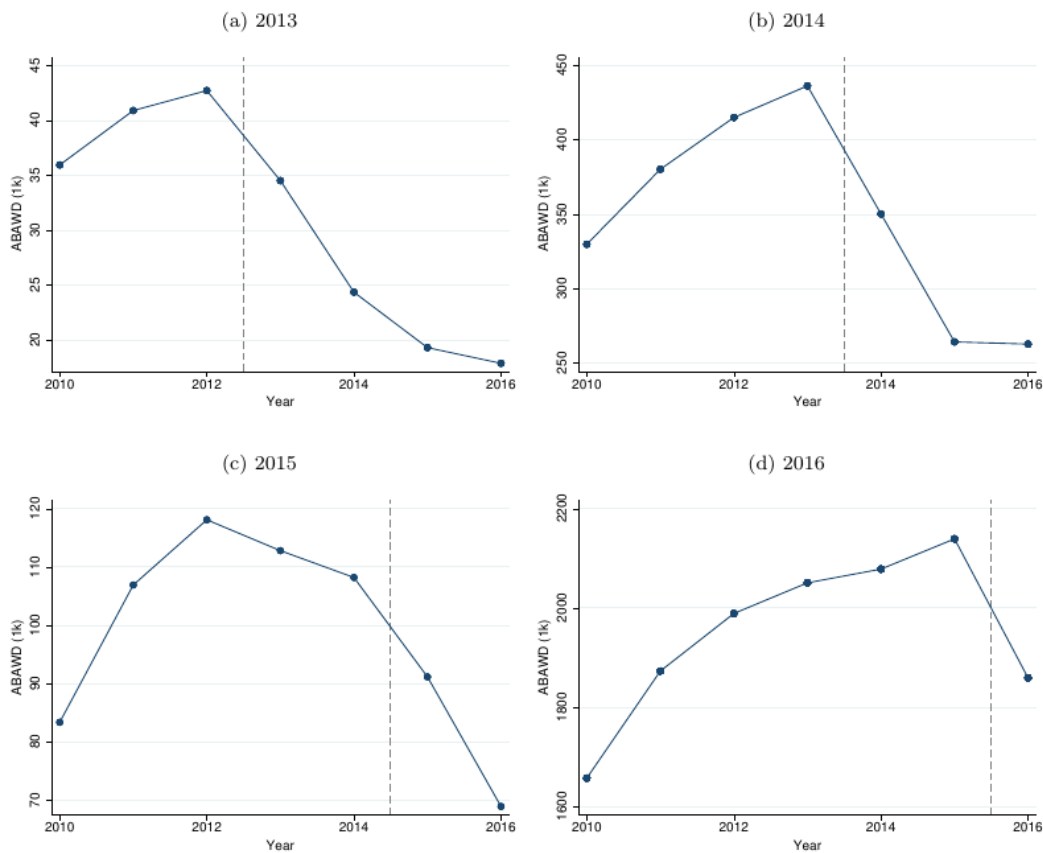
NOTE: Work requirement waiver status is derived from official approval letters sent from the USDA to individual states in response to state applications for waivers from 2010 to 2016. N/A signifies that the work requirements were still waived in 2016.

Figure 3 County Unemployment Rate 2010



NOTE: Data is from the Bureau of Labor Statistics (BLS) Local Area Unemployment Statistics.

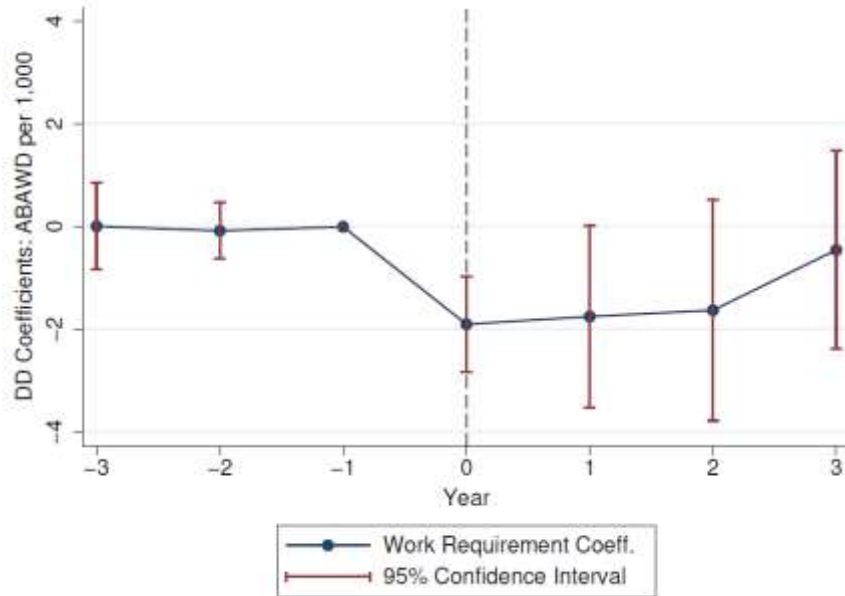
Figure 4 ABAWD by Work Requirement Reinstatement Year



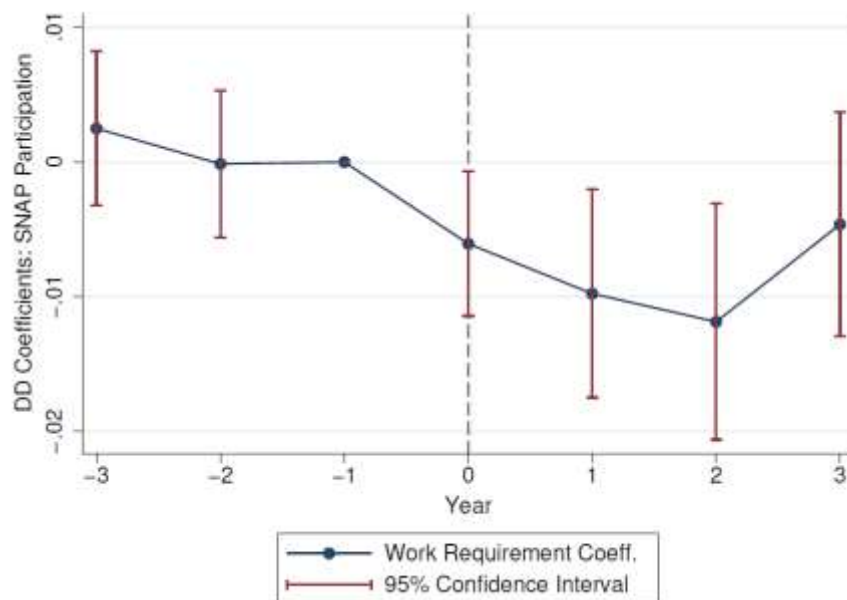
NOTE: The figures include the combined count of ABAWD for states that reinstated the work requirements in a given year. New Hampshire, Utah, Vermont, and Wyoming started imposing work requirements in 2013; Iowa, Kansas, Minnesota, Ohio, Oklahoma, and Virginia started imposing work requirements in 2014; Maine and Wisconsin started imposing work requirements in 2015; Alabama, Arkansas, Colorado, Florida, Idaho, Indiana, Maryland, Massachusetts, Mississippi, Missouri, New York, Pennsylvania, South Carolina, and Washington started imposing work requirements in 2016.

Figure 5 Event Study, Dependent Variable: Number ABAWD per thousand

(a) Quality Control Sample



(b) ACS Sample



Note: Figure (a) reports the results from the event study based on the Quality Control Administrative Data from 2010 to 2016 restricted to ABAWD. Figure (b) shows the findings of the event study conducted using ACS data. Both specifications use time $t-1$ as the omitted category.

Table 1 ABAWD Summary Statistics for SNAP Quality Control Database

	2010	2011	2012	2013	2014	2015	2016
Gender							
Male	0.57	0.58	0.58	0.58	0.56	0.57	0.54
Female	0.43	0.42	0.42	0.42	0.44	0.43	0.46
Age							
Age 18–24	0.30	0.30	0.30	0.30	0.29	0.28	0.26
Age 25–29	0.16	0.16	0.15	0.15	0.17	0.18	0.17
Age 30–34	0.11	0.11	0.12	0.12	0.12	0.13	0.13
Age 35–39	0.09	0.10	0.10	0.10	0.11	0.11	0.12
Age 40–44	0.15	0.14	0.14	0.14	0.13	0.13	0.13
Age 44–49	0.19	0.20	0.18	0.18	0.18	0.17	0.18
Race/Ethnicity							
White (Non-Hispanic)	0.38	0.39	0.39	0.43	0.42	0.42	0.42
Black (Non-Hispanic)	0.27	0.28	0.28	0.33	0.32	0.31	0.30
Hispanic	0.08	0.08	0.08	0.09	0.11	0.12	0.13
Other Race	0.05	0.05	0.06	0.04	0.04	0.04	0.05
Unreported Race	0.22	0.20	0.19	0.10	0.11	0.10	0.11
Education							
Less than High School Grad	0.27	0.27	0.26	0.25	0.25	0.24	0.25
High School Grad	0.50	0.50	0.52	0.53	0.51	0.53	0.53
Postsecondary Education	0.10	0.11	0.10	0.10	0.10	0.10	0.10
College Grad	0.04	0.03	0.04	0.04	0.04	0.04	0.04
Unreported Education	0.10	0.09	0.08	0.08	0.10	0.09	0.09
Employment/Training							
Job Training Program	0.25	0.25	0.22	0.18	0.22	0.19	0.19
Working Poor Household	0.23	0.24	0.27	0.25	0.27	0.26	0.29
Obs.	11,204	11,363	11,110	10,746	9,778	9,316	8,005
Weighted Obs. (millions)	3.519	4.090	4.382	4.538	4.333	4.265	3.529

NOTE: The sample is composed of randomly selected households/individuals that receive SNAP benefits from the SNAP Quality Control Database. The survey is administered through Food and Nutrition Services of the USDA.

Table 2. Summary Statistics, ABAWD Sample

	SNAP QC	ACS Sample
Gender		
Male	0.57	0.62
Female	0.43	0.38
Age		
Age 18–24	0.29	0.23
Age 25–29	0.16	0.17
Age 30–34	0.12	0.12
Age 35–39	0.10	0.10
Age 40–44	0.14	0.14
Age 44–49	0.18	0.23
Race/Ethnicity		
White (non-Hispanic)	0.41	0.64
Black (non-Hispanic)	0.30	0.17
Hispanic	0.10	0.14
Other race/ethnicity	0.05	0.05
Unreported Race	0.15	.
Education		
Less than High School Grad	0.25	0.12
High School Graduate	0.52	0.50
Postsecondary Education	0.10	0.38
College Graduate	0.04	.
Unreported Education	0.09	.
Employment and Earnings		
Job Training Program	0.22	.
Working Poor Household	0.26	.
Employed	.	0.76
Employed for 20 hrs. per week	.	0.74
Hours worked per week	.	33.31
Annual Wage (\$1k)	.	25.41
Observations	71,522	1,308,444
Weighted Obs. (millions)	28.7	156.8

NOTE: The SNAP QC sample is composed of randomly selected households/individuals that receive SNAP benefits from the SNAP Quality Control Database. The survey is administered through Food and Nutrition Services of the USDA. The ACS sample includes individuals aged 18 to 64 that are U.S. citizens in the continental states, that do not have minor children in the household, who are not students, who do not have a college degree, and who are not institutionalized or in foster care. Individual-level sample weights were used in the calculations.

Table 3 Influence of Work Requirements on SNAP

Dependent Variable:	QC Data ABAWD per 1,000	ACS Data SNAP Participation
Work Requirement _{<i>j,t</i>}	-2.711*** (0.561)	-0.011*** (0.003)
Observations	343	1,308,444
Mean Dependent Var.	13.4	12.5%
Implied Percent Δ	-20.3%	-8.4%

NOTE: The QC specification controls for time-varying state characteristics, including state unemployment rate (from the BLS), number of stable jobs, political party of the state legislature and governor (Republican, Democrat, or split), an indicator for expanding Medicaid under the Affordable Care Act (ACA), and the number of 15 percent exemptions granted by the state. State and year fixed effects were also included. The ACS sample includes U.S. citizens in the continental states that do not have minor children in the household, who are not students, who do not have a college degree, and who are not institutionalized or in foster care. Controls for county-level labor conditions (unemployment and stable jobs), number of state 15 percent exemptions, political party of state governor/legislature, and state Medicaid expansions were included. Individual and household controls include race/ethnicity, education, household structure, wage earnings of other family members, and homeownership. County and year fixed effects were also included. Standard errors for both models are clustered at the state and year level using cgmreg (Cameron, Gelbach, and Miller 2011) and are shown in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4 Influence of Work Requirements, Dependent Variable: SNAP Participation

	Full Sample	Male	Female	White	Black	HS Dropout	HS Graduate
Work Requirement $_{j,t}$ × Age 45–49 $_i$	–0.009*** (0.003)	–0.012*** (0.004)	–0.006* (0.003)	–0.010*** (0.003)	–0.011 (0.008)	–0.021*** (0.006)	–0.008** (0.004)
Work Requirement $_{j,t}$	–0.003 (0.003)	–0.004 (0.003)	–0.003 (0.004)	–0.004* (0.002)	–0.003 (0.007)	–0.007 (0.010)	–0.005* (0.003)
Observations	882,064	435,328	446,736	673,018	98,188	106,034	458,177
Mean SNAP Participation	9.2%	9.1%	9.2%	7.0%	22.1%	19.7%	8.7%

NOTE: The sample includes U.S. citizens in the continental states that do not have minor children in the household, who are not students, who do not have a college degree, and who are not institutionalized or in foster care. Individual and county level controls along with county and year fixed effects were included but not reported here. Standard errors are clustered at the state and year level using cgmreg (Cameron, Gelbach, and Miller 2011) and are shown in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5 Influence of Work Requirements, Dependent Variable: Employed

	DD Age 18–49		DDD Age 45–54					
	Full Sample	Full Sample	Male	Female	White	Black	HS Dropout	HS Graduate
Work Requirement $_{j,t}$ × Age 45–49 $_i$		0.005* (0.003)	0.007* (0.004)	0.003 (0.005)	0.003 (0.004)	0.007 (0.008)	0.018** (0.008)	0.004 (0.004)
Work Requirement $_{j,t}$	0.001 (0.002)	–0.003 (0.002)	–0.002 (0.002)	–0.004 (0.004)	–0.001 (0.003)	–0.005 (0.008)	–0.002 (0.009)	–0.003 (0.004)
Observations	1,308,444	882,064	435,328	446,736	673,018	98,188	106,034	458,177
Mean Employment	76.4%	78.0%	81.4%	74.7%	79.3%	71.6%	63.3%	78.3%
Implied Percent Δ	0.2%	0.6%	0.8%	0.4%	0.4%	1.0%	2.9%	0.5%

NOTE: The sample includes U.S. citizens in the continental states that do not have minor children in the household, who are not students, who do not have a college degree, and who are not institutionalized or in foster care. Individual and county level controls along with county and year fixed effects were included but not reported here. Standard errors are clustered at the state and year level using cgmreg (Cameron, Gelbach, and Miller 2011) and are shown in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 6 Sample Restrictions and the Influence of Work Requirements

Dependent Variable	Employed				SNAP			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Work Requirement j,t × Age 45–49 i	0.005* (0.003)	0.007* (0.004)	0.009** (0.004)	0.012*** (0.004)	–0.009*** (0.003)	–0.011*** (0.003)	–0.015*** (0.005)	–0.019*** (0.007)
Work Requirement j,t	–0.003 (0.002)	–0.005 (0.003)	–0.007 (0.004)	–0.007 (0.006)	–0.003 (0.003)	–0.004 (0.003)	–0.004 (0.005)	–0.002 (0.006)
Observations	882,064	725,180	445,104	312,915	882,064	725,180	445,104	312,915
Mean Employment	78.0%	73.8%	59.6%	57.1%	9.2%	10.7%	15.0%	19.6%
Implied Percent Δ	0.6%	1.0%	1.5%	2.0%	–9.8%	–10.1%	–10.1%	–9.8%
Wage < 95th Percentile (\$56k) Wage < 75th Percentile (\$28k)		✓		✓		✓		✓
Family Wage < \$50k				✓				✓

NOTE: The sample includes U.S. citizens in the continental states that do not have minor children in the household, who are not students, who do not have a college degree, and who are not institutionalized or in foster care. Individual and county level controls along with county and year fixed effects were included but not reported here. Standard errors are clustered at the state and year level using cgmreg (Cameron, Gelbach, and Miller 2011) and are shown in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 7 Sample Restrictions and the Influence of Work Requirements

Age:	45–54	47–52	48–51	45–54	47–52	48–51
Work Requirement _{<i>j,t</i>}	0.005*	0.005	0.004	0.012***	0.013*	0.015*
× Age 45–49 _{<i>i</i>}	(0.003)	(0.004)	(0.004)	(0.004)	(0.007)	(0.008)
Work Requirement _{<i>j,t</i>}	–0.003	–0.003	–0.001	–0.007	–0.008	–0.008
	(0.002)	(0.003)	(0.003)	(0.006)	(0.005)	(0.006)
Observations	882,064	535,565	360,225	312,915	188,386	126,637
Mean Employment	78.0%	78.3%	78.4%	57.1%	57.6%	57.7%
Implied Percent Δ	0.6%	0.7%	0.5%	2.0%	2.2%	2.6%
Wage < 75th Percentile (\$28k)				✓	✓	✓
Family Wage < \$50k				✓	✓	✓

NOTE: The sample includes U.S. citizens in the continental states that do not have minor children in the household, who are not students, who do not have a college degree, and who are not institutionalized or in foster care. Individual and county level controls along with county and year fixed effects were included but not reported here. Standard errors are clustered at the state and year level using cgmreg (Cameron, Gelbach, and Miller 2011) and are shown in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 8. Sample Restrictions and the Influence of Work Requirements

Age:	45–54	47–52	48–51	45–54	47–52	48–51
Work Requirement _{<i>j,t</i>}	–0.009***	–0.007***	–0.006**	–0.019***	–0.016***	–0.017**
× Age 45–49 _{<i>i</i>}	(0.003)	(0.002)	(0.003)	(0.007)	(0.006)	(0.007)
Work Requirement _{<i>j,t</i>}	–0.003	–0.003	–0.004**	–0.002	–0.001	–0.002
	(0.003)	(0.002)	(0.002)	(0.006)	(0.007)	(0.005)
Observations	882,064	535,565	360,225	312,915	188,386	126,637
Mean Employment	9.2%	9.2%	9.2%	19.6%	19.9%	19.9%
Implied Percent Δ	–9.8%	–7.9%	–6.0%	–9.8%	–8.2%	–8.3%
Wage < 75th Percentile (\$28k)				✓	✓	✓
Family Wage < \$50k				✓	✓	✓

NOTE: The sample includes U.S. citizens in the continental states that do not have minor children in the household, who are not students, who do not have a college degree, and who are not institutionalized or in foster care. Individual and county level controls along with county and year fixed effects were included but not reported here. Standard errors are clustered at the state and year level using cgmreg (Cameron, Gelbach, and Miller 2011) and are shown in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 9 Placebo Test: Able-Bodied Adults with Dependents

Dependent Variable:	Employed	SNAP
Work Requirement $_{j,t}$ × Age 45–49 $_i$	–0.000 (0.004)	–0.001 (0.005)
Work Requirement $_{j,t}$	–0.001 (0.003)	–0.002 (0.004)
Observations	473,585	473,585
Mean Dependent Variable	78.5	16.0

NOTE: The sample includes U.S. citizens in the continental states that have minor children in the household, who are not students, who do not have a college degree, and who are not institutionalized or in foster care. Individual and county level controls along with county and year fixed effects were included but not reported here. Standard errors are clustered at the state and year level using cgmreg (Cameron, Gelbach, and Miller, 2011) and are shown in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 10 Work Requirements, Job Training Programs, and SSDI

<i>Dependent Variable:</i>	ABAWD using Job Training (%)	SSDI Applications (per 1k)
Work Requirement	0.017 (0.017)	0.003 (0.044)
Unemployment Rate	-0.034*** (0.012)	0.065** (0.027)
Stable Jobs (per 1,000)	-0.001 (0.002)	0.001 (0.004)
Average Monthly Earnings (\$1k)	-0.094 (0.158)	-0.235 (0.335)
Exemptions Used (per 1,000)	-0.001 (0.001)	< 0.001 (0.002)
Expanded Medicaid (ACA)	-0.052* (0.026)	0.074 (0.052)
Republican Governor	0.002 (0.016)	-0.056 (0.041)
Republican Legislature	-0.009 (0.020)	-0.042 (0.055)
Democratic Legislature	0.007 (0.016)	-0.014 (0.070)
Observations	343	343

NOTE: State and year fixed effects were included but not reported here. Standard errors are clustered at the state level and are shown in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.

Appendix

Table A1 States That Voluntarily Imposed Work Requirements

	Work Requirement Imposed	Not Eligible for EUC Waiver
Texas	2011	2016
Delaware	2011	2016
Vermont	2013	2015
New Hampshire	2013	2015
Wyoming	2013	2015
Utah	2013	2015
Oklahoma	2014	2015
Ohio	2014	2016
Virginia	2014	2015
Iowa	2014	2015
Kansas	2014	2015
Minnesota	2014	2015
Maine	2015	2016
Wisconsin	2015	2016

NOTE: Work requirement waiver status is derived from official approval letters sent from the USDA to individual states in response to state applications for waivers from 2010 to 2016. EUC waiver status is based on trigger notices from the U.S. Department of Labor. See https://ows.doleta.gov/unemploy/euc_trigger/.

Table A2 ACS Summary Statistics, ABAWD Sample

	2010	2011	2012	2013	2014	2015	2016
Gender							
Male	0.61	0.61	0.62	0.62	0.62	0.62	0.62
Female	0.39	0.39	0.38	0.38	0.38	0.38	0.38
Age							
Age 18–24	0.22	0.22	0.23	0.24	0.24	0.24	0.24
Age 25–29	0.16	0.16	0.17	0.17	0.18	0.18	0.19
Age 30–34	0.11	0.12	0.12	0.13	0.13	0.13	0.13
Age 35–39	0.11	0.10	0.10	0.10	0.10	0.11	0.11
Age 40–44	0.15	0.15	0.15	0.14	0.14	0.13	0.13
Age 44–49	0.26	0.25	0.24	0.22	0.21	0.20	0.20
Race/Ethnicity							
White (non-Hispanic)	0.68	0.67	0.65	0.64	0.63	0.62	0.61
Race/Ethnicity							
White (non-Hispanic)	0.68	0.67	0.65	0.64	0.63	0.62	0.61
Black (non-Hispanic)	0.16	0.16	0.17	0.17	0.17	0.17	0.17
Hispanic	0.12	0.13	0.13	0.14	0.15	0.16	0.16
Other race/ethnicity	0.05	0.04	0.05	0.05	0.05	0.05	0.06
Household							
Live with Parents	0.26	0.27	0.28	0.29	0.30	0.30	0.31
Live with Spouse	0.27	0.26	0.25	0.23	0.23	0.22	0.22
Live with Partner	0.12	0.11	0.11	0.12	0.12	0.12	0.12
Education							
Less than High School Grad	0.13	0.13	0.12	0.12	0.12	0.12	0.12
High School Graduate	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Postsecondary Education	0.37	0.37	0.38	0.38	0.38	0.38	0.38
Employment and Earnings							
Employed	0.74	0.74	0.75	0.75	0.77	0.78	0.79
Employed for 20 hrs. per week	0.72	0.72	0.73	0.73	0.74	0.75	0.76
Hours worked per week	33.08	32.89	33.10	33.00	33.33	33.73	34.05
Annual Wage (\$1k)	26.07	25.01	24.95	24.85	25.06	25.77	26.15
Annual Wage (\$1k) if > \$0	32.65	31.42	31.08	30.93	30.85	31.52	31.75
Observations	196,098	189,271	187,346	186,635	184,727	183,474	180,893
Weighted Obs. (millions)	22.410	22.183	22.199	22.419	22.500	22.591	22.460

NOTE: The sample includes individuals aged 18 to 64 that are U.S. citizens in the continental states, that do not have minor children in the household, who are not students, and who are not institutionalized or in foster care. The sample further excludes those observations with postsecondary education, individuals that make more than \$28,000 annually, or whose family members make more than \$50,000. Individual-level sample weights were used in the calculations.

Table A3 Number of ABAWD by State 2010–2016

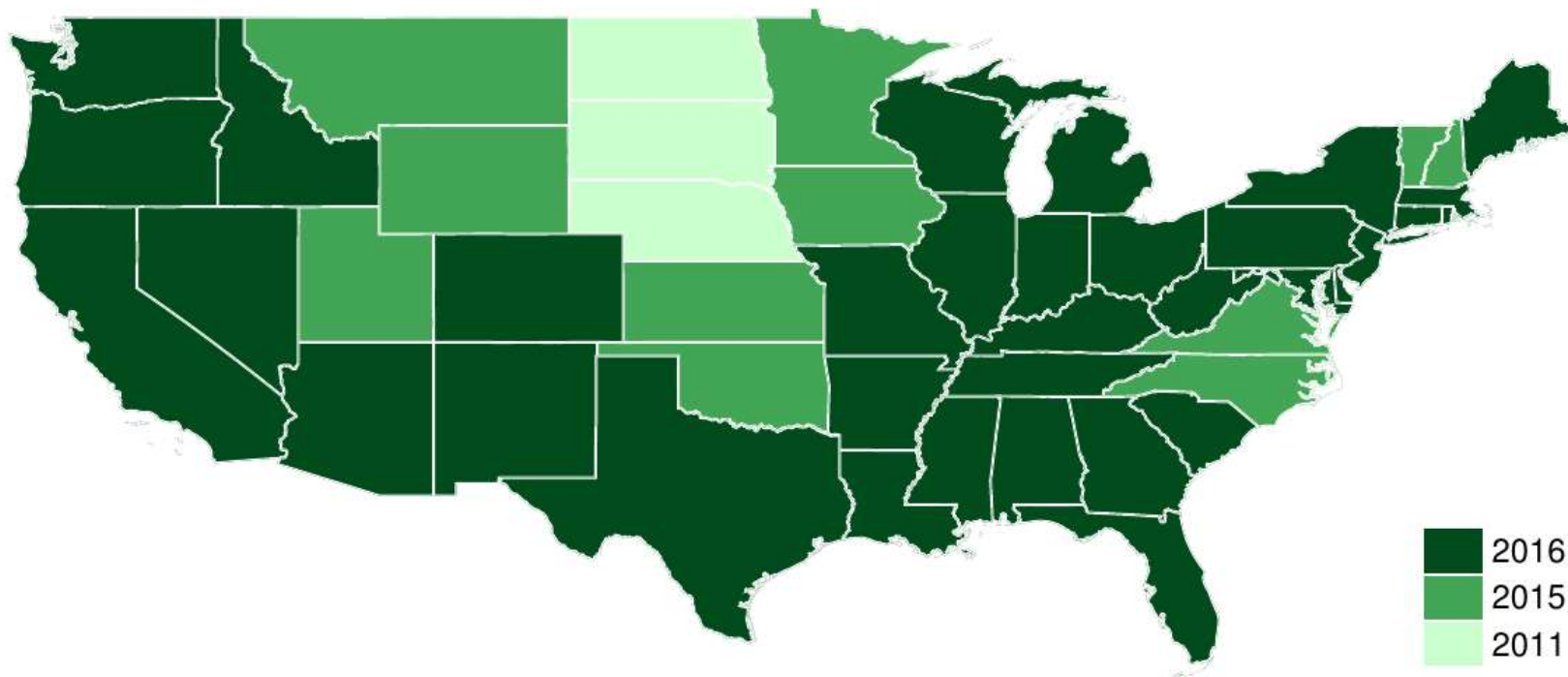
	2010	2011	2012	2013	2014	2015	2016
Alabama	55,127	76,036	79,960	83,326	82,008	75,581	67,681
Alaska	7,777	9,698	10,233	8,622	8,946	7,128	7,118
Arizona	99,586	98,528	104,766	81,667	85,631	76,416	90,743
Arkansas	37,899	41,556	42,539	45,402	42,566	44,692	29,237
California	316,247	331,100	406,258	461,174	509,940	588,573	521,476
Colorado	25,275	28,815	29,887	30,708	33,432	36,167	30,782
Connecticut	43,898	43,850	49,211	47,828	51,451	58,766	41,007
Delaware	8,692	11,710	13,938	13,855	13,948	11,173	9,492
District of Columbia	20,789	21,791	22,439	22,178	21,805	22,675	17,683
Florida	306,496	411,954	477,177	500,352	464,544	499,789	267,333
Georgia	134,778	165,244	209,694	184,796	179,655	185,256	134,278
Guam	1,131	1,415	2,059	1,960	1,630	2,023	2,012
Hawaii	14,244	16,201	18,362	17,605	20,352	18,558	12,864
Idaho	13,385	19,195	18,648	18,488	11,305	9,655	8,352
Illinois	170,420	180,975	187,952	217,729	256,358	250,768	214,329
Indiana	59,809	63,178	70,824	69,086	72,816	64,864	40,848
Iowa	35,351	37,131	47,680	45,938	42,252	40,050	31,635
Kansas	23,579	26,783	29,819	31,200	15,419	10,128	9,852
Kentucky	65,967	83,427	94,157	92,014	89,473	78,089	57,492
Louisiana	60,777	70,862	68,030	82,408	68,278	61,738	76,492
Maine	21,448	26,951	26,468	22,837	18,428	9,608	7,784
Maryland	61,388	76,325	74,386	94,394	86,265	95,733	65,908
Massachusetts	59,447	67,901	71,141	86,970	75,193	60,105	45,105
Michigan	241,771	249,110	212,689	209,297	201,161	189,783	174,622
Minnesota	42,470	42,857	46,539	52,723	39,349	29,787	29,590
Mississippi	44,472	51,292	58,036	64,737	62,201	67,374	38,555
Missouri	76,547	91,208	87,195	86,007	73,934	71,779	52,767
Montana	10,160	11,868	12,741	12,338	11,482	10,212	7,239
Nebraska	10,549	10,142	10,007	8,734	9,796	8,757	8,665
Nevada	24,547	30,867	33,957	33,267	41,493	43,570	50,042
New Hampshire	6,922	8,118	8,509	5,429	4,905	4,276	2,993

Table A3 Number of ABAWD by State 2010–2016 (continued)

	2010	2011	2012	2013	2014	2015	2016
New Jersey	45,965	58,450	55,143	54,759	50,001	49,787	38,785
New Mexico	24,115	32,530	37,218	37,801	34,562	35,847	34,534
New York	189,492	221,137	210,382	248,925	207,740	224,832	178,066
North Carolina	126,989	168,038	168,091	181,852	164,756	167,153	130,656
North Dakota	4,232	4,047	3,600	3,071	3,183	2,145	2,526
Ohio	121,596	155,317	155,513	154,845	121,985	110,482	115,414
Oklahoma	47,553	44,693	51,565	58,828	44,406	34,428	38,648
Oregon	107,408	132,217	130,172	134,554	110,854	119,374	103,390
Pennsylvania	113,490	126,389	145,767	148,904	150,425	131,128	146,613
Rhode Island	12,365	15,438	16,439	17,730	19,061	17,203	19,007
South Carolina	79,928	89,418	93,573	94,393	67,711	62,220	43,363
South Dakota	7,958	7,549	7,302	7,551	6,433	6,855	6,422
Tennessee	126,999	153,609	151,969	149,546	150,389	146,249	111,423
Texas	108,499	127,556	136,712	113,806	117,489	101,751	127,701
Utah	19,454	22,390	22,983	17,984	12,085	8,494	9,412
Vermont	7,522	8,400	9,176	9,222	5,998	5,139	4,097
Virginia	59,384	73,538	83,997	92,831	86,940	39,518	37,782
Washington	125,834	135,425	153,211	155,059	157,750	145,736	125,761
West Virginia	24,318	24,956	27,924	29,665	31,952	37,779	35,812
Wisconsin	61,917	79,966	91,632	89,968	89,773	81,546	61,143
Wyoming	2,052	1,997	2,058	1,888	1,378	1,410	1,388

NOTE: The table is derived from the SNAP Quality Control Database, which is composed of randomly selected households/individuals that receive SNAP benefits.

Figure A1 Year Ineligible for Statewide Waiver Based on EUC



NOTE: EUC waiver status is based on trigger notices from the U.S. Department of Labor. See https://ows.doleta.gov/unemploy/euc_trigger/.

Figure A2 ABAWD Work Requirement State Waiver Status 2010–2016

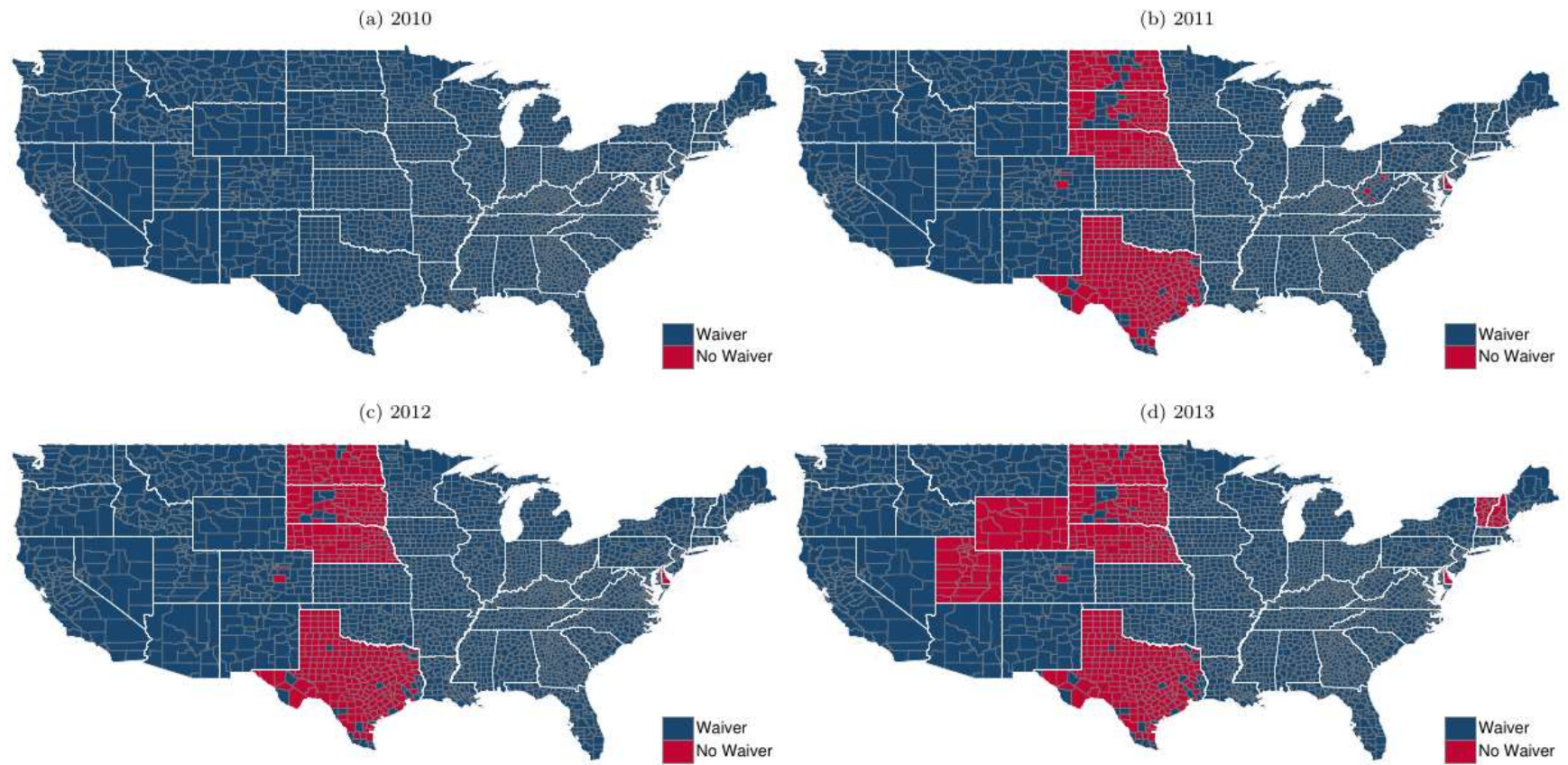


Figure A2 (Continued)

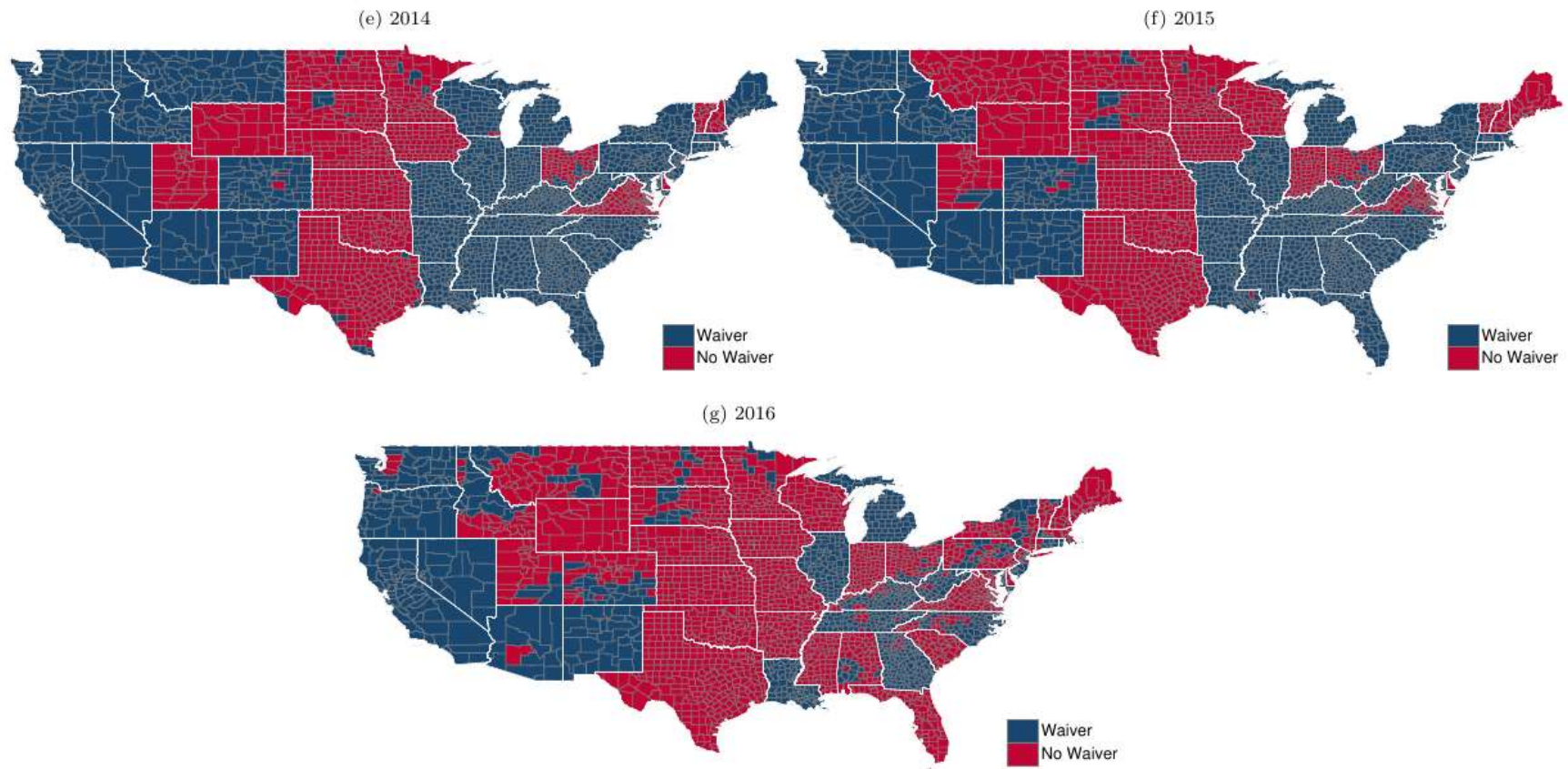
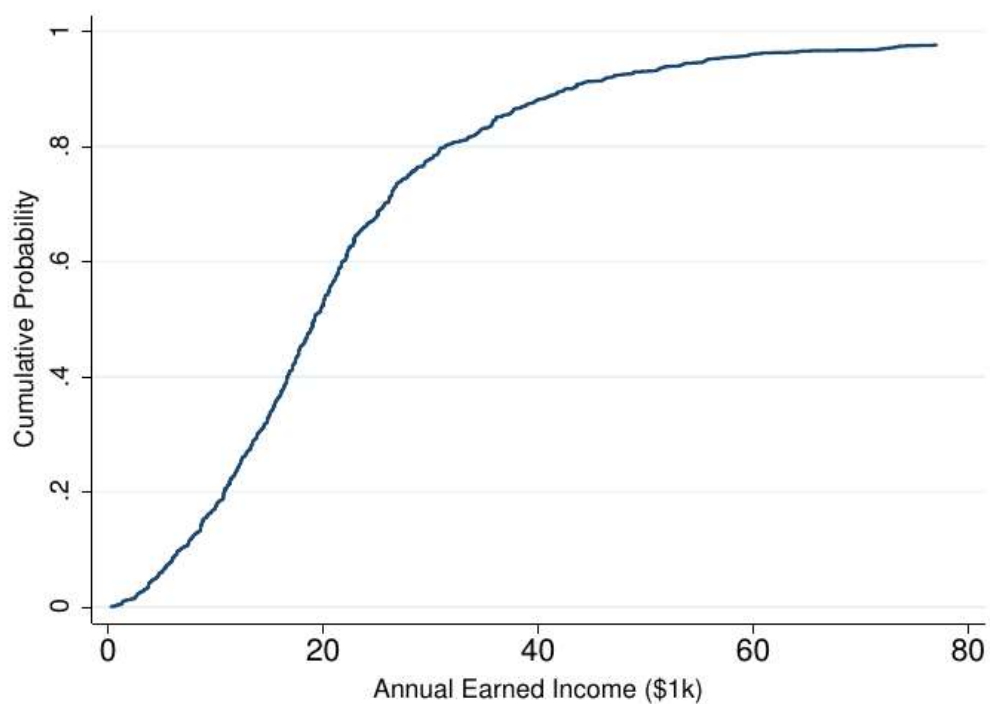


Figure A3 CDF of Earnings of ABAWD from SIPP



NOTE: Data are from the 2004 and 2008 panels of the Survey of Income and Program Participation. The sample includes 1,214 individuals aged 18 to 64 who do not have a disability, do not have minor children in the household, and who received SNAP benefits in the previous wave of the sample. Individual-level sample weights were used in the calculations.