The Effects of Work Requirements on the Employment and Income of TANF Participants

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Abstract

Experiments conducted in the mid-1990s show that a combination of work requirements and work supports substantially increased the employment of cash assistance recipients in Aid to Families with Dependent Children, the predecessor program to Temporary Assistance for Needy Families (TANF) while having little effect on recipients' average income. There is little evidence on the effects of TANF's work requirements, though, and recent research on other means-tested programs demonstrates that their work requirements have had little effect on employment and have substantially reduced the number of people receiving the benefits they provide. I use administrative data to examine how Alabama's recent expansion of its TANF work requirement to the parents of children between the ages of 6 months and 11 months affects their employment and income. I find that recipients of TANF in Alabama begin searching for jobs earlier, which leads to an increase of 11 percentage points in their employment rate during the months they are in TANF. In addition, the requirement increases their earnings but reduces the amount of cash assistance they receive, primarily by removing nonworking families from the program. On net, my analysis suggests that average income rises for TANF recipients in Alabama but so does the frequency with which families have neither earnings nor cash assistance.

Notes and Definitions

Unless this paper indicates otherwise, all years referred to are federal fiscal years, which run from October 1 to September 30 and are designated by the calendar year in which they end.

Some of the figures in this paper use shaded vertical bars to indicate periods of recessions. (A recession extends from the peak of a business cycle to its trough.)

A **TANF recipient** is a person who receives recurring cash payments through the Temporary Assistance for Needy Families program. TANF funds many other services, sometimes for people who are not receiving recurring cash payments.

An **able-bodied adult** is a person over the age of 17 who does not receive disability benefits (either through Supplemental Security Income or Disability Insurance).

A **parent** is a person who lives with one or more dependents under the age of 18.

A **child** is a dependent who is under the age of 18.

The **time limit** is the 60-month limit on TANF receipt over a parent's lifetime.

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Introduction

Temporary Assistance for Needy Families (TANF) is the primary source of cash payments for low-income, able-bodied families with children in the United States. The benefits TANF participants receive typically decline as their earnings rise, a feature common in other means-tested programs as well. To counter that incentive for participants to work less, parents are generally required to work or prepare for work to remain eligible for cash payments through TANF.

During the mid-1990s, policymakers expanded work requirements to cover most parents who receive cash payments. From 1993 through 1996, most states used waivers to add work requirements and make other changes to TANF's predecessor program, Aid to Families with Dependent Children (AFDC). Those waivers encouraged states to use randomized control trials to evaluate the effects of those changes on recipients' employment and income. The initial findings from early AFDC waiver experiments informed the overhaul of federal policy through the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), which converted AFDC into TANF in 1997. For a family to receive cash payments from TANF, all able-bodied parents in it generally must participate in work or prepare for work.

After PRWORA expanded the work requirements and made other changes to cash assistance, the number of families receiving such assistance declined precipitously. Whereas 12.5 million people received cash payments from AFDC in 1996, only 1.8 million received payments through TANF in 2021. During those two-and-a-half decades, a growing portion of families headed by single mothers—the main population served by both AFDC and TANF—reported receiving no earnings or cash assistance for extended periods of time.

The extensive literature on AFDC/TANF struggles to isolate the effects of work requirements and primarily examines policy changes that occurred more than 20 years ago. The AFDC waiver experiments show that a combination of work requirements and work supports increased employment and had little effect on average income for single-parent families in the mid-1990s (Hamilton and others 2001). Because employment and training services were expanded as well, it is unclear how much of the observed effects on employment and income can be attributed to the work requirements. Recent studies of other means-tested programs have been able to isolate the effect of work requirements because those programs provide few work supports. They find that work requirements in the Supplemental Nutrition Assistance Program (SNAP) and Medicaid substantially reduce the number of people receiving benefits while increasing employment little, if at all (Wheaton and others 2021, Gray and others 2023, Han 2022, and Sommers and others 2019). Those findings raise the possibility that TANF's work requirements reduce the amount of cash assistance received by low-income families without substantially boosting their earnings.

To fill that gap in the literature, this paper examines the consequences of a recent expansion of work requirements using administrative data from the Department of Health and Human Services (HHS). In 2018, Alabama extended its work requirement to the parents of children between the ages of 6 months and 11 months. To estimate the causal impact of the policy change on employment and income of those families (that is, the treatment group), I apply a difference-in-

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difference approach, in which the control group consists of families whose youngest child was slightly too old to be affected by the expansion. That approach also can test whether Alabama combined the expansion of its work requirement with more access to work supports, which I find no evidence of. The analysis uses longitudinal data from HHS on program participation, earnings, and various other income sources for all the families enrolled in Alabama's TANF program.

I find that the expansion of Alabama's work requirement increases employment and earnings and reduces cash assistance among parents of children between the ages of 6 months and 11 months. They begin searching for jobs earlier, which leads to an increase of 11 percentage points (or 29 percent) in their employment rate during the months they are in TANF. While some families earn more, other families remain jobless and are removed from TANF for violating the work requirement. The reduction in cash assistance appears smaller than the increase in earnings, on average, but I cannot directly estimate the net effects of those changes on income using the difference-in-difference approach.

To provide a comprehensive interpretation of the various findings from the difference-in-difference analysis, I use instrumental variables to estimate the effects of the work requirement over the year after families enter TANF. In a novel extension of Angrist's and Imbens' (1995) model with variable treatment intensity, I use interactions between the postexpansion period and the age of the youngest child at entry into TANF to identify exogenous variation in the portion of months that a family is subject to the work requirement. That approach suggests that the work requirement increases average (pretax) income by about $123 per month (or 19 percent), largely because earnings rise more than cash assistance falls, on average. And I estimate that the work requirement increases the income families receive from the earned income tax credit (EITC) and child tax credit (CTC) by roughly $71 per month. Those gains are concentrated among families who find employment more quickly. In contrast, I find evidence that the work requirement increases the portion of months families have neither earnings nor cash assistance.[1]

Multiple tests indicate that my findings are not driven by factors other than the work requirement. The difference-in-difference approach I use is robust to the inclusion of the traits of recipients and local unemployment rates, and it controls for the time limit. In addition, it does not detect significant effects when I only use data from before the work requirement's expansion, which further supports that my results are not driven by the ongoing recovery from the 2007–2009 recession.

My findings for the effects on TANF entry and exit suggest that the work requirement accounts for a modest portion of the decline in the number of recipients over the past 25 years. Researchers have found that most of the 85 percent decline in TANF cases can be accounted for by income-eligible families not participating in the program, but they have not quantified the

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[1] My data only allow me to estimate the effect of the work requirement over the year after it is imposed. Other research indicates that those effects diminish in subsequent years (Hamilton and others 2001) and that decreasing the amount of cash assistance provided to children can reduce how much they earn in adulthood (Aizer and others 2016).

extent to which the work requirement reduces participation. In Alabama, the number of TANF cases has declined by 87 percent, whereas I find that its work requirement reduces spell lengths by about 19 percent among the families subject to it and has little effect on entry. Those results suggest that the work requirement reduced participation by about 9 percent (.19 x .44) in 2018 because about 44 percent of families were subject to it. (In most cases, the families are exempt because the parents are disabled or absent, which results in the family only receiving benefits on behalf of their children.)

Background

I provide a brief overview of work requirements in cash assistance programs and the literature on how they affect income and employment. For a detailed description of those programs and the voluminous literature on them, including how they affect child development, see Ziliak (2016).

Institutional Setting

The largest cash assistance program in the United States was overhauled in the mid-1990s to promote employment. Before 1993, families rarely lost cash payments because the parents were not working. From 1993 to 1996, many states used waivers to add work requirements to AFDC. Then PRWORA replaced AFDC with TANF, which was implemented in 1997. TANF differs from AFDC in that all states must have work requirements, parents are generally limited to 60 months of cash assistance over their lifetime, states can disregard more earnings when calculating cash payments, and they can divert program funding from cash assistance to a wide array of work supports and other services. Like its predecessor, TANF primarily serves families headed by single mothers with little education.[2]

Since 1993, employment among single mothers has risen substantially, but the number of people receiving cash assistance has fallen by more, leaving more families without earnings or cash assistance. From 1993 to 2000, the employment rate for less-educated single mothers increased by 16 percentage points, whereas the employment rate of their childless counterparts increased by 3 percentage points (see Figure 1). The reforms to AFDC/TANF probably contributed to that rise, as did the expansion of the earned income tax credit (Fang and Keane 2004, Grogger 2003, and Meyer and Rosenbaum 2001). The AFDC/TANF reforms appear to have precipitated a larger change in the number of cash assistance recipients (Parolin 2021), which fell by 58 percent from 1993 to 2000 (see Figure 2). That decline generally continued through the subsequent two decades even though employment was no longer rising after 2000. That divergence in trends

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[2] Families without dependents are not eligible for TANF, and two-parent families and families headed by single fathers rarely choose to participate in the program.

probably contributed to the rise in the portion of less-educated single mothers without earnings or cash assistance for extended periods (see Figure 3).[3]

PRWORA may have contributed to those trends by imposing minimum criteria for work requirements and by offering states the discretion to make their requirements more stringent. Federal law requires a certain percentage of single parents in each state's TANF program—50 percent, before adjustments are made—to have 20 hours of employment or to participate in activities that could lead to employment quickly, such as a job search, each week.[4] Generally, states can exclude parents from that work participation rate if they are caring for disabled family members or if their family only receives benefits on behalf of the children because of the parents' immigrant status, disability status, or because they do not live with their children. In addition, states have the option of excluding single parents of children under the age of one from the requirement. About half of the states choose a lower age threshold for exemption from the work requirement. Starting in 2018, Alabama joined those states by applying its work requirement to parents whose youngest child is between 6 months old and 11 months old.

Like many other states, Alabama incentivizes employment through a stringent work requirement and by disregarding a substantial portion of parents' earnings when determining the amount of cash assistance that they receive. Most parents are at risk of having their families removed from Alabama's program if they do not immediately begin working or participating in work-related activities for at least 20 hours per week.[5] For parents who obtain employment, their earnings generally do not count against the amount of cash assistance they receive for the first 12 months they are in the program. By altering parents' budget constraints (see Figure S1), those policies can increase employment by raising the returns from working 20 or more hours per week (substitution effect) or by increasing the marginal utility of income for parents who lose benefits (income effect).

Alabama's program is like many other states' programs in three additional ways, which suggests the findings in this paper might generalize to those states. First, most parents are not employed when they enter the program because most employed parents have earnings above the threshold for initial eligibility. Second, Alabama provides substantial work supports to TANF recipients, including employment and training services, subsidized child care, and transportation assistance. Third, Alabama has not adjusted the size of its cash payments to keep pace with inflation.[6]

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[3] Meyer and others (2021) find that earnings and cash assistance are underreported in the Current Population Survey. I adjust upward the number of single mothers with earnings by using reports of employment in the previous week from multiple interviews covering the same years, and I adjust the percentage of single mothers who receive recurring cash payments so that it matches the administrative data.

[4] That threshold rises to 30 hours per week for single parents with no children younger than 6 years old. About half of the families in TANF have a child younger than 6 years old.

[5] Instead of expelling the families from TANF, sometimes Alabama imposes partial sanctions—under which the cash payment is reduced by 50 percent—for the first violation of the work requirement.

[6] In 2018, Alabama provided an average monthly benefit of $268, which ranked 40th among the states. The state at the median, Pennsylvania, provided $352 per month.

Instead, it has diverted TANF funding from cash assistance to other services, including work supports.

In addition to TANF, two other means-tested programs have implemented work requirements. In SNAP, some able-bodied adults without dependent children risk being removed from the program if they are not working or in job training for at least 20 hours per week.[7] And in Medicaid, several states attempted to use waivers to add work requirements to the program in 2018 and 2019; among them, Arkansas had a requirement in place the longest, at 9 months.[8]

Related Literature

This paper contributes to several strands of the literature by using recent data to disentangle the effects of work requirements from changes to work supports. As well as contributing to the literature on employment and income effects, I add to the research on the causes of the long-term decline in the number of families receiving cash assistance by estimating the effects of the work requirement on entry into TANF. This paper uses the age of the youngest child in the family to estimate the effects of work requirements, whereas a series of studies starting with Grogger and Michalopoulos (2003) used that age to estimate the effects of the time limits (another component of welfare reform).

Extensive research shows that a combination of work requirements and work supports boosted the employment of AFDC recipients in the mid-1990s. Policymakers encouraged the states that used waivers to add work requirements to AFDC to conduct randomized controlled trials, which researchers used to evaluate the reforms the states made. Those waiver experiments indicate that the reforms boosted employment, which led to a rise in average earnings that was about equal to the reduction in cash assistance (Hamilton and others 2001). Other studies have used quasi-experimental approaches to estimate the effects of the waivers from national survey data (Moffitt 1999, Schoeni and Blank 2000, and Meyer and Rosenbaum 2001). Their findings are generally consistent with those of the waiver experiments. However, the studies were not able to isolate the effects of the work requirements because they coincided with other policy changes, such as increases in subsidized child care and expanded employment and training services (Freedman and others 2000).

More recent research on TANF offers limited insight into the effects of work requirements on current recipients of cash assistance. Like the AFDC waiver experiments, the implementation of TANF involved a combination of changes—to work requirements, work supports, and other policies. Several studies have used structural models to simulate the contributions of time limits,

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[7] In response to the COVID-19 pandemic, the Congress suspended the work requirement for SNAP until the month after the public health emergency declaration is lifted. That declaration is currently scheduled to end in April 2023. The Administration has announced that it plans to extend the emergency declaration to May 11, however, and then let it expire. In addition, 35 states responded to the pandemic by suspending their work requirements for TANF (Shantz and others 2022).

[8] The courts set aside the work requirements of several states, and then the Biden administration rescinded all waiver approvals in 2021.

work requirements, and earnings disregards to the changes in employment and participation in the program during the 1990s. Fang and Keane (2004) and Keane and Wolpin (2010) found that work requirements played a substantial role, whereas Swann (2005) and Chan (2013) found they played a small role. The subsequent changes that some states have made to their work requirements could allow for quasi-experimental analysis, but most states' TANF programs have become small enough that such analysis would be imprecise if based on household surveys. This paper uses administrative data to precisely quantify the effect of a state's expansion of its work requirement.

Research from the past few years indicates that work requirements in SNAP and Medicaid raised employment little, if at all, while substantially reducing the amount of benefits received. In SNAP, work is only required of adults without dependent children who are less than 50 years old.[9] By applying a regression discontinuity approach based on that age threshold to administrative data from four states, Gray and others (2023) and Wheaton and others (2021) ruled out substantial increases in employment from SNAP's work requirement, though they found that it substantially reduced program participation.[10] Similarly, Sommers and others (2019) found that the work requirement Arkansas imposed on adults without dependents in Medicaid substantially reduced participation in that program, and they detected little evidence of an increase in employment. Those findings call into question whether TANF's work requirements boost earnings enough to counter the loss of cash assistance.

A substantial body of research explores the causes for the large decrease in the number of AFDC/TANF recipients, but it provides limited insights into the role of work requirements. Some researchers have found that the AFDC waivers and the implementation of TANF played a substantial role in reducing the number of recipients during the 1990s (Schoeni and Blank 2000 and Grogger and Karoly 2005), whereas others have found they did not (Figlio and Ziliak 1999 and Ziliak and others 2000). The researchers generally agree that improving economic conditions account for a substantial portion of that reduction (also see Hoynes 2000), but such improvements cannot account for much of the continued decline in TANF cases over the subsequent two decades. Parolin (2021) demonstrates that most of the decline in cases through 2016 can be attributed to fewer income-eligible families being in the program. Families tend to leave TANF sooner and are less likely to enter it. In fact, Haider and Klerman (2005) and Frogner, Moffitt, and Ribar (2009) show that low entry rates have largely contributed to the decline in TANF cases. This paper is the first to measure the reduction in spell length and program entry caused by TANF's work requirement.

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[9] In addition, most able-bodied nonelderly adults who are not working at least 30 hours a week or caring for a child under age 6 must register for work—that is, notify their state's employment office that they are available to work—and accept a suitable job if one is offered. There is little research on how those requirements affect employment and income.

[10] Recent studies that have used household surveys reached mixed results. Han (2022) found SNAP's work requirement had little effect on employment (similar to studies that used administrative data), but Harris (2021) found that SNAP's work requirement increased employment.

Data and Empirical Strategy

I use administrative data from HHS to estimate the effects of the work requirement expansion in Alabama. To control for other changes that could affect the labor market outcomes of TANF recipients, I compare the employment and income of parents affected by the expansion because their youngest child is between 6 months old and 11 months old with parents who are continuously subject to the work requirement because their child is slightly older.

Data

State agencies report their TANF data to HHS, which uses those data to calculate the work participation rate and determine compliance with the program's time limit. Federal requirements include having a sufficient work participation rate and limiting the number of months during which families receive cash payments.

The administrative data from HHS that I use cover 2012 through 2018. My main sample consists of observations for 2017 and 2018, and I use the earlier data to identify the start of spells for all families in TANF during 2017 and 2018 and to thoroughly examine trends over time.

The data provide extensive information on TANF recipients. The main data file from HHS includes monthly records of families' participation in work-related activities, earnings, other sources of income, and demographic traits, including the birth dates of all family members. The sources of cash income included are earnings, child support, and benefits from TANF, Social Security, Supplemental Security Income, unemployment insurance, and workers' compensation. Also included are benefits received from SNAP and subsidies for child care. In addition, HHS provided data files that record the circumstances of TANF recipients when they leave the program, including their reason for leaving and their income in the month they stop receiving cash payments.[11]

I focus on single-parent families in Alabama that the state can subject to its work requirement under federal law. Since 2012, Alabama has provided data for all its TANF recipients each month. (Most states redraw samples each month.) Alabama consistently uses unique family identifiers, which enables me to observe how the circumstances of those recipients change over time.[12] To focus the analysis on families who the state subjects to work requirements, I exclude families who only receive benefits on behalf of their children because the parents are ineligible as a result of their immigration status, disability status, or because they do not live with their children. Of the remaining 42 percent of TANF families, about 98 percent are headed by single parents.

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[11] Those data allow me to confirm that the TANF spell ended in the month following the last month that the family appeared in the main file.

[12] I use fine details in the data, such as recipients' dates of birth, to confirm that Alabama uses the family identifiers consistently.

Empirical Strategy

I apply a standard difference-in-difference approach to the pooled cross-sections within a year of the work requirement's expansion to quantify its average effects:

(1) $$y_{i,t} = \alpha + \beta\ treatxpost_{i,t} + \gamma\ treat_{i,t} + \delta\ post_t + X_{i,t}\ \zeta + \varepsilon_{i,t}.$$

In that regression, $y_{i,t}$ denotes an outcome—typically dollars of income or an indicator of employment—for family i in TANF during month t; $treat_{i,t}$ denotes an indicator for whether the family's youngest child is between 6 months and 11 months of age in month t; $post_t$ denotes an indicator for whether the observation belongs to the postexpansion period, 2018; $treatxpost_{i,t}$ is the interaction between those two indicators and thus the coefficient on it, β, gives the average effect of the work requirement's expansion. Other factors that could affect outcomes, such as economic conditions and the limit on lifetime benefits, are incorporated in $X_{i,t}$ for use in robustness tests.[13] I use least squares to estimate the coefficients.[14]

The analysis is complicated by families leaving the treatment group and by the lack of data for families who have left TANF. I exclude parents whose youngest child is between 12 months and 16 months of age because many of them were subject to the expansion in earlier months and thus could be experiencing lagged effects.[15] Families can also leave the treatment group because they have a newborn. Thus, I test the robustness of the results to the exclusion of those families. To gauge the implications of sample attrition from parents leaving TANF, I use equation 1 to compare the employment and income of parents in the treatment and control groups in the month they left the program.

For the control group, I consider parents whose children are either slightly too young or slightly too old to be subject to the expansion of the work requirement. Parents whose youngest child is between the ages of 0 months and 3 months are consistently exempt from the work requirement. (Parents whose youngest child is 4 months or 5 months of age are excluded from the analysis because they were occasionally subject to the work requirement in 2018.) I also consider using parents whose youngest child is between the ages of 17 months and 23 months as a control group. They are consistently subject to the work requirement and unlikely to experience lagged effects from the expansion.

The control group that I use in the regression analysis consists of the parents whose children are a bit too old to be subject to the expansion because they are similar to the parents who are subject

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[13] To account for the 60-month limit on TANF receipt over a parent's lifetime, I include an indicator for the family's having received TANF for 60 months and a second order polynomial in months of receipt. The polynomial allows for the possibility that families become more likely to exit as they approach 60 countable months because they want to bank some eligibility in case of future hardship.

[14] For binary outcomes, I check that the probit estimator generates similar results. Those results are available upon request.

[15] I expect lagged effects to be negligible among parents whose youngest child is older than 16 months. Among parents whose youngest child was 17 months old in 2018, over 75 percent of them entered TANF after that child reached 12 months of age.

to it. In the years leading up to the expansion, the trends in the employment rates are similar between the two groups (see Figure 4). That suggests that the difference of 12 percentage points in employment rates between the groups before 2018 would have changed little if not for the expansion of the work requirement. Starting in 2018, the parents of children between the ages of 6 months and 11 months were also required to work, and their employment rate quickly rose to match that of the parents of older children.

The demographic characteristics of the parents whose children are a bit too old to be subject to the expansion are similar to those of the parents who are subject to it. In both groups, nearly all parents are non-Hispanic females, about 83 percent are Black, and educational attainment is low (see Table 1). Not surprisingly, there is some indication that the parents of the older children are older themselves, but the estimated difference in age is only 0.4 years (or four months) and of marginal statistical significance.

The empirical strategy I use estimates the effects of work requirements when certain work supports are available. Like most states, Alabama focuses on work supports that promote attachment to the labor force. All parents in TANF in Alabama receive employment services, which include in-person meetings with caseworkers, career planning, and job search assistance. Some parents also receive services that address specific barriers to employment, such as transportation assistance and subsidized child care. (Working parents in TANF are generally eligible for subsidized child care, as are some parents who are looking for work.) In contrast, Alabama rarely provides work supports that would delay a parent's job search for an extended period to boost his or her skills, such as job training and subsidized employment.

The difference-in-difference approach appears to isolate the effects of work requirements because, unlike the welfare waiver experiments, Alabama provides access to work supports regardless of whether families are required to work. I use equation (1) to test for differences in such access between the treatment and control groups. For subsidized child care, I limit the sample to parents in the labor force to address simultaneous causality from only those parents being eligible for such subsidies. Both before and after the expansion, Alabama provided child care subsidies to about 46 percent of parents in the labor force whose youngest child was between the ages of 6 months and 11 months (see Table S1). Likewise, I find that parents in the treatment and control groups have similar access to vocational training and subsidized employment.

Results

I find that the expansion of Alabama's work requirement to parents of children between the ages of 6 months and 11 months increases their employment and earnings and reduces cash assistance. The size of those estimates suggests that the work requirement increases income, on average.

Effects on Cash Assistance

The work requirement appears to reduce the amount of cash assistance that families receive by decreasing the number of months that they participate in the program. After the work

requirement was expanded in 2018, the rate at which participants exit TANF about doubles among parents whose youngest child was 6 months old in the first month they are subject to the requirement (see Figure 5). Exit rates also increase among parents whose youngest child was between 7 months old and 11 months old, but by less. In contrast, exit rates generally remain about the same for parents who were not subject to the expansion because their children were either too young or too old. A notable exception is that the exit rate spikes among parents whose youngest child is 12 months old only before the expansion, when that is the first month they are subject to the work requirement. That spike is consistent with the spike that occurs after the expansion among parents who are subject to the requirement for the first time because their youngest child is 6 months old. Thus, the expansion of the work requirement appears to reduce the exit rate among parents whose youngest child is 12 months old by increasing exit rates earlier on.

After controlling for other factors that could affect program participation, I find that the expansion of the work requirement increases the portion of families leaving TANF from 10 percent to 15 percent per month, on average, across the range of ages directly subject to it (see Table 2).[16] After the work requirement was extended, the exit rate for parents whose youngest child is between the ages of 6 months and 11 months rose by 5 percentage points, to about match the exit rate for parents who were consistently subject to the requirement because their youngest child was between 17 months and 23 months old.[17] The results are robust to the inclusion of the traits of recipients, local unemployment rates, a set of indicators for spell length, and controls for the time limit. The supplemental tables show that the results are also robust to the exclusion of families who have a newborn while in TANF, which can change whether they are in the treatment group (see Table S2).

The increase in TANF exits can largely be explained by a rise in expulsions for violations of the work requirement. Other potential causes of the rise in exit rates include lost eligibility because earnings increase or failure to attend the meeting that determines continuing eligibility. The expansion of the work requirement increased the rate at which parents are expelled for violating the work requirement by 4 percentage points, which accounts for nearly 80 percent of the estimated increase in the exit rate (see Table 2).[18]

The expansion primarily reduces cash assistance by increasing exits from TANF. To roughly gauge the reduction in cash assistance from higher exit rates, I start by calculating average spell

[16] The estimation excludes the last month of the sample because I do not know whether the family continued to receive benefits in the subsequent month. To test whether that exclusion biases the results because of seasonality or for other reasons, I also estimate equation 1 excluding the last month of data for 2017. The change in the estimates is negligible (see Table S2).

[17] Because the estimate for the coefficient on *post* is negligible and the estimate for the coefficient on *treat* is -0.054 (not shown in Table 2), the estimate of 0.050 for the coefficient on *treatxpost* indicates that the expansion made the exit rates of the two groups similar.

[18] That analysis excludes the month in which families leave the program for reasons other than violations of the work requirement because it is unclear whether they would have been expelled for violating the work requirement in the absence of those other reasons.

length by the age of the youngest child when the family entered the program. Those calculations are based on the data for 2017 so that they represent spell length in the absence of the work requirement. To estimate average spell length under the expansion, I add the estimates of the differences in exit rates for families whose youngest child is between the ages of 6 months and 11 months shown in Figure 5 to the exit rates for 2017. I estimate that the expansion of the work requirement decreased average spell length from 7.62 months to 6.87 months among families who enter TANF with a child less than 12 months old. Because the average monthly TANF benefit in Alabama is $250 among exempt families, that corresponds to a loss of $187 in benefits per spell. Dividing that loss by the average spell length before the expansion gives an average reduction in cash assistance of $27 per month in TANF, which can be compared with the monthly changes in other income sources.

In addition, families who are subject to the expansion appear to receive reduced benefits during the months they remain in the program. Using equation 1, I estimate that the expansion of the work requirement reduces the size of the average monthly payment by $7 while families remain in TANF. That reduction is driven by an increase of 7 percentage points in the frequency of partial sanctions for initial violations of the work requirement, under which Alabama reduces the size of the payment the family receives.

Effects on Entry Into TANF

Work requirements might affect families by altering whether they enter TANF. For example, parents who do not expect to work might not bother completing the application process because they expect to be removed from the program quickly. And that could lead to changes in income and employment that would not be captured by analysis of TANF recipients. However, the parents of children between the ages of 6 months and 11 months continue to account for about 22 percent of entrants with young children after the work requirement was extended to them (see Figure 6).[19] That finding is consistent with research by Moffitt (2003), which did not detect a lower rate of entry among parents who were informed of the work requirement.

The work requirement does not appear to deter entry by people who are unlikely to find employment, which indicates that changes in employment among entrants will not be driven by sample selection. In addition to not reducing the number of parents who entered TANF, the expansion of the work requirement does not appear to have reduced their skill level. Specifically, the average level of education among entrants remained the same (see Figure 6).

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[19] That approach probably misses lagged reductions in reentry into TANF because families that violate the work requirement three or more times are barred from reentering the program for 12 months. Those lagged reductions cannot be large, though, because few families are removed from TANF for violating the work requirement three or more times. I estimate that such violations end 1 percent of spells after limiting the sample to families who are at risk of reentry for at least five years by only including families whose first spell ended before 2014. Thus, only 1 percent of leavers are at risk of having their reentry delayed by up to 11 months.

Effects on Employment

The work requirement appears to boost employment while parents are in TANF by increasing the rate at which they find work because they enter the labor force more quickly. Among the parents subject to the expansion of the work requirement in 2018, the employment rate rises quickly, reaching about 50 percent by the time their youngest child is 7 months old (see Figure 7). That rise in employment is precipitated by the labor force participation rate increasing from 56 percent in 2017 to 97 percent in 2018 among parents whose youngest child is 6 months old (see Figure S2). Labor force participation increases because parents find jobs more quickly and spend more time searching for jobs.[20]

The increase in employment following the expansion of the work requirement extends into the first few months that the parents are no longer directly subject to the expansion. For parents of children who are 12 months old, the employment rate is 9 percentage points higher in 2018 than in 2017. As the amount of time parents are subject to the work requirement in 2017 increases, their employment rate catches up to that of their counterparts in 2018 (see Figure 7). But the increase in the employment rate remains statistically significant until the parents' youngest child is 15 months old. To test whether those higher rates of employment are the result of the expansion, I remove from the sample parents whose youngest child is over 11 months old if they had been in TANF when their child was 11 months old or younger. After excluding those candidates for lagged effects, the employment rates are similar between 2017 and 2018 for all ages above 11 months (see Figure S3).[21]

I use equation 1 to estimate the average effects of the expansion of the work requirement on the employment of parents while they are in TANF, which I find is substantial (see Table 3). After the extension of the work requirement, the employment rate for parents whose youngest child is between the ages of 6 months and 11 months rises by 11 percentage points (or 29 percent) to roughly match the employment rate for parents who are consistently subject to the requirement because their youngest child is between 17 months and 23 months old.[22] The results are robust to the inclusion of the traits of recipients, local unemployment rates, a set of indicators for spell length, and controls for the time limit.

I examine employment at the time parents leave TANF to provide a more comprehensive understanding of the effect of the work requirement and to check for bias from sample selection.

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[20] Using equation 1, I estimate that the expansion of the work requirement increases the monthly rate of transition from nonemployment to employment from 0.11 to 0.19. In contrast, the transition rate from job search to employment decreases, which suggests that the families who search for work because of the requirement have a lower propensity for finding jobs.

[21] Few parents whose youngest child is between 17 months and 23 months of age are candidates for lagged effects, which results in their removal having little effect on the employment rate. Those parents remain in the control group used to estimate equation 1.

[22] Because the estimate for the coefficient on *post* is negligible and the estimate for the coefficient on *treat* is -0.117, the estimate of 0.111 for the coefficient on *treatXpost* indicates that the expansion made the employment rates of the two groups similar.

Because the work requirement results in more nonworking parents being expelled from TANF, lower employment during the months that families are not in the program could offset the increase they experience while in it. Relatedly, the increase in the employment rate for parents in the program could be an artifact of nonworking parents being expelled from the program instead of parents working more than they would have in the absence of the requirement.

The work requirement appears to have little effect on the employment rate at exit, which indicates that it increases employment overall. Using equation 1, I estimate that employment at exit increased by a small amount that was not statistically significant, a finding that is robust to the inclusion of variables that are potentially confounding because they are also correlated with employment (see Table 3). Although employment tends to be rare among the many families expelled for violating the work requirement, the requirement appears to increase employment among families who leave TANF for other reasons (see Figure S4). The two most common reasons those families leave the program are missing an appointment for eligibility determination and lack of cooperation in collecting child support. Using equation 1, I estimate that the work requirement reduces the risk of such closures occurring before the parent is employed by 17 percentage points.

Effects on Earnings

Alabama's work requirement boosts the earnings of the parents who remain in the program by increasing how many of them have jobs. The expansion of the work requirement to parents whose youngest child is between the ages of 6 months and 11 months increased their earnings by $130 per month (or 23 percent), on average (see Table 4). Like employment, the increase in earnings emerges among parents whose youngest child is 6 months old and extends a few months beyond the youngest child reaching 11 months of age (see Figure 8). Those gains are driven by more parents having jobs; wages change little, and hours worked fall only slightly among the employed. The decline in hours worked appears to be the result of the parents induced to work by the requirement being more likely to work part time than the parents who would have worked regardless (see Table 4). In contrast, the potential for the requirement to increase hours worked among parents who would have worked regardless is limited because 98 percent of employed parents were already working at least 20 hours a week before the expansion.

Following the expansion of the work requirement, most working recipients continue to earn little. Employed parents whose youngest child is between the ages of 6 months and 11 months have average monthly earnings of about $1,425 in both 2017 and 2018 (and median earnings of about $1,375). Earnings primarily remain low because the average wage rate stays around $10 per hour. In addition, part-time work remains the norm: Participants' workweeks average about 32 hours (and the median is about 32 hours).

Earnings in the month the parent leaves TANF also remain low following the expansion, at about $625, on average. About 60 percent of parents whose youngest child is between the ages of 6 months and 11 months had no earnings when they stopped receiving cash assistance in both 2017 and 2018. And for working parents, monthly earnings continue to average about $1,500 at exit. Pavetti, Safawi, and Trisi (2021) find that many parents in other states also continue to experience low earnings after leaving TANF.

Effects on Income

The expansion of the work requirement buoys cash income by raising earnings while families remain in TANF, but families tend to stop receiving benefits sooner, which reduces income. During the months they receive cash assistance, the increase in cash income is about the size of the increase in earnings because earnings and cash assistance are the primary sources of cash and because the work requirement rarely reduces cash payments except by removing families from the program (see Figure 9 and Table 5). There is little evidence of an effect on cash income in the month families leave TANF. Average cash income in that month is only about $625—both before and after the expansion—because of the loss of cash assistance. The work requirement hastens the loss of that assistance. That loss in cash assistance appears to offset about one-quarter of the increase in average cash income while in TANF. In the subsection "Effects on Cash Assistance," I calculate families' loss in cash assistance from less time in TANF to be $27 per month in TANF, and my estimate of equation 1 indicates that it increases average cash income by $103 a month during their time in TANF, on average. (In the next section, I directly estimate the net effect on cash income.)

The expansion appears to slightly reduce the amount of SNAP benefits families receive while in TANF. SNAP benefits are reduced by 30 percent of cash income, but multiple exceptions can cause SNAP benefits to decrease little in response to rising earnings. First, several deductions are taken from cash income, including 20 percent of earnings. Second, families can wait up to 6 months to report changes in income that do not push them over 130 percent of the poverty guideline. By regressing SNAP benefits on the contemporaneous and lagged values of cash income, I estimate that a $1 increase in cash income leads to a 6-cent reduction in SNAP benefits for TANF recipients in Alabama.[23] Similarly, Han (2022) finds that many families who had very low income continue to receive the maximum SNAP benefit after their earnings increase.

I find preliminary evidence that the expansion increased the amount of tax credits received by parents whose youngest child was between 6 months and 11 months old. Before the expansion, about 76 percent of those parents' monthly earnings were low enough that additional earnings would increase their EITC payments if they continued to earn at that rate throughout the year. A larger share of parents could be eligible for additional EITC payments because most of them do not work for 12 consecutive months. (In the next section, I estimate the net change in EITC and CTC payments.)

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[23] I find that the Hausman test using *treatxpost* as an instrument for cash income fails to reject the consistency of the least squares regression, which supports a causal interpretation. The AFDC waiver experiments tended to result in larger reductions in SNAP benefits, probably because they were conducted at a time when the loss of AFDC benefits often led to the loss of SNAP benefits for families who remained eligible for the latter program. My data do not include the amount of SNAP benefits families received in the month after exiting TANF, but CBO's (2022) analysis of data from the Survey of Income and Program Participation indicates continued eligibility for SNAP has been disentangled from continued eligibility for TANF.

Validity of the Results

I continue to examine whether the results might be driven by differences between the treatment and control groups other than the expansion of the work requirement. In the prior section, I demonstrate that the results are robust to controlling for the observed traits of recipients, local unemployment rates, spell length, and the time limit. Still, the results could be driven by continued improvements in economic conditions not captured by the unemployment rate. To examine that possibility, as well as whether other unobserved differences between the groups drive the results, I conduct a placebo test. Specifically, I apply equation 1 to the data for 2016 and 2017, a period during which the work requirement does not affect the treatment group because they are consistently exempt from it. Thus, substantial estimates of the coefficient on *treatxpost* (with *post* redefined as an indicator for 2017) would indicate that the results are driven by factors other than the work requirement, such as the ongoing recovery from the recession.

None of the changes in outcomes estimated by the placebo test are economically or statistically significant. My main analysis indicates that the work requirement has the largest effects on exits from TANF, employment, and earnings. In contrast, the point estimates from the placebo test are no greater than 1 percentage point for both the program exit rate and the employment rate, and the point estimate for the change in earnings is $26 (see Table 6).

The data suggest that the average effects I estimate for parents whose youngest child is between the ages of 6 months and 11 months might generalize to the parents of older children. I examine whether average income and the rates of employment, exit from TANF, and high school completion vary with the age of the youngest child among families that have the same exemption status.[24] Among families who are not exempt from the work requirement, those metrics differ little between the families who were subject to the expansion and the families whose youngest child is between 1 and 13 years old (see Table S3).[25] It is less clear whether those two groups of families would have had similar outcomes if they had been exempt from the work requirement. In support of such similarity is that the job finding rate varies little with the age of the youngest child among those who are exempt, but the exemption only extends to 11 months of age, which makes much of the extrapolation distant (see Figure S5).

Interpretation

To provide a more comprehensive account of the effects of the work requirement on TANF participants, I compare outcomes by the age of the youngest child when families enter the program. I include outcomes for the 12 months after those families enter the program, which allows me to incorporate lagged effects, gauge the extent to which reductions in cash assistance

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[24] Pavetti, Safawi, and Trisi (2021) find that many TANF recipients face circumstances—such as not having completed high school—that make finding a job difficult. Those circumstances can reduce the effectiveness of work requirements.

[25] In contrast, parents whose youngest child is between 14 and 18 years old appear more disadvantaged, but they only account for 6 percent of the families subject to the work requirement.

offset increases in earnings, incorporate changes in income from tax credits, and compare my results with those from the AFDC waiver experiments. But that analysis requires me to make assumptions about how employment and earnings change after families leave TANF.

Approach

I use two-stage least squares to estimate the effect of the work requirement on employment and income with the parameter β:

(2) $y_{i,t} = \alpha + \beta \, work\_required_{i,t} + age\_entry_i \, \gamma + \delta \, post_t + \varepsilon_{i,t}$

$work\_required_{i,t} = \zeta + age\_entry\mathrm{x}post_{i,t} \, \theta + age\_entry_i \, \lambda + \pi \, post_t + \mu_{i,t}$

$work\_required_{i,t}$ indicates whether family i is subject to the work requirement in month t with the sample limited to the first 12 months after entry. To identify variation in the exposure to the work requirement that is driven by the expansion, I use as instrumental variables a vector of indicators for the youngest child's months of age at entry interacted with an indicator for the postexpansion period, $age\_entry\mathrm{x}post_{i,t}$. Both equations include a vector of indicators for the age of the youngest child at entry to capture persistent differences by age, and an indicator for the postexpansion period to capture general secular trends.

I limit the sample to the cases that are likely to differ little apart from whether work is mandated. The sample consists of data from 2017 and 2018 for families whose youngest child is less than 2 years old when they enter TANF. Thus, the families who are not subject to the expansion of the work requirement because their children are a bit too old serve as a control group for families who enter with a child less than 12 months old, like in the difference-in-difference analysis.

This approach leverages similar variation to the difference-in-difference analysis, and thus the validity tests conducted for that analysis suggest that the exclusion restriction holds for the instrumental variables. The restriction is that the interaction between age at entry and the indicator for the postexpansion period, *post*, is uncorrelated with other determinants of the outcomes after controlling for age at entry and *post*. The validity of the difference-in-difference analysis also requires the exogeneity of an interaction between the age of the youngest child and *post* with contemporaneous age substituting for age at entry.

$\mathrm{Cov}(treat\mathrm{x}post,\varepsilon) = 0$ where $treat \equiv 1(6 \leq age\_contemp \leq 12)$

Contemporaneous age equals age at entry plus spell length, and thus the exogeneity of the interaction between entry age and *post* is a necessary condition for the exogeneity of the interaction between contemporaneous age and *post*.

$\mathrm{Cov}(age\_contemp\mathrm{x}post,\varepsilon) = 0$ if and only if

$\mathrm{Cov}(age\_entry\mathrm{x}post,\varepsilon) + \mathrm{Cov}(spell\_length\mathrm{x}post,\varepsilon) = 0$

My approach estimates the work requirement's effects as a linear function of the predicted portion of months the family is subject to it by using multiple instrumental variables. The expansion of Alabama's work requirement increases the portion of months families are subject to it by 0.4 if averaged across all families who entered when their youngest child was less than

12 months old. The effect of a work requirement is typically measured as the difference in outcomes between a group that is almost always subject to the requirement and a group that never is, which is captured by β under my approach because *work_required* would increase from 0 to about 1. In an extension of Angrist's and Imbens' (1995) model of variable treatment intensity, I use multiple instrumental variables to estimate β, which gives the effects of the work requirement as functions of the intensity with which it is applied.[26]

This approach complements the estimation in the previous section by allowing me to directly estimate the extent to which reductions in cash assistance offset increases in earnings and incorporate lagged effects. In the previous section, analysis by the contemporaneous age of the youngest child indicates that the expansion reduces cash assistance by hastening the exits of families from TANF. It also increases earnings by boosting employment, an effect that persists beyond the youngest child reaching 12 months of age. In this section, I estimate the net effect of the work requirement on income over the year after entry into TANF by directly estimating the reduction in cash assistance from faster exits while allowing for reentry into the program. This approach also differs in that it uses variation in the portion of months the family has been subject to the work requirement instead of whether the family is subject to it contemporaneously. That alteration allows me to incorporate the lagged effects from the expansion exposing families to the work requirement earlier.

Estimating effects over the year after entry into TANF requires imputing employment and earnings for 28 percent of the sample. I do not have data for families who have been out of TANF for more than one month. In those months, employment and earnings are considerable sources of uncertainty, whereas cash assistance is likely to be zero, and cash income from other sources is very rare.[27] My base approach sets employment and earnings in those months equal to the most recent observed value. That approach should provide a benchmark under which the work requirement has little effect on employment and earnings in the months that families are not in TANF. (Recall that the difference-in-difference analysis indicates the work requirement had little effect on employment and earnings in the month that families leave the program.) I test the sensitivity of the estimates to the imputation approach by adding employment dynamics and allowing for a higher rate of job loss among parents who had been subject to the work requirement.

Results
I find that Alabama's work requirement probably boosts employment enough to increase average income over the year after a family enters TANF. Compared with the AFDC waiver experiments,

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[26] Angrist and Imbens show that under mild assumptions, the second-stage coefficient on years of education captures the average effect of increasing schooling by a year when the first-stage equation for education includes multiple indicators for quarter of birth as instrumental variables. I can extend from estimating a uniform average effect to estimating the average effect by treatment intensity because my instrumental variables capture more of the variation in that intensity.

[27] Cash assistance is unlikely to come from other government programs in Alabama because the state does not have a separate state program or provide cash assistance for families transitioning out of TANF.

Alabama's requirement reduces cash assistance less because it provides smaller payments to families that remain in the program. The reduction in how long families receive cash assistance can account for about one-tenth of the decline in the number of cases since PRWORA's enactment.

Effects on Employment and Income

Before turning to estimating equation 2, I illustrate the identification of it using differences in employment rates. The work requirement expansion increases the percentage of months during which a family is subject to it the most for parents whose youngest child is between the ages of 4 months and 7 months when they enter the program (see Figure 9). The rise in employment is also the largest for those parents, whereas parents whose youngest child is younger than 4 months or older than 7 months at entry are less subject to the expansion and see smaller gains in employment.

I estimate that Alabama's work requirement increases families' average cash income by $123 per month (or 19 percent) over the year after entry by boosting employment. Cash income is higher, on average, because average earnings rise by $184, whereas average cash payments decline by $48 (see Table 7). The rise in earnings is driven by an increase of 12.5 percentage points in the employment rate.[28] That estimate is similar to the estimate of the employment effect from the difference-in-difference approach using the common Wald estimator. Specifically, applying equation (1) to data for the 12 months after entry yields a 4.8 percentage-point increase in employment, which represents the reduced-form estimate from two-stage least squares in which *treatxpost* is the instrument for *work_required*. Using the same equation to estimate the effect on *work_required* results in a first-stage estimate of 42.5 percentage points. Thus, the Wald estimate for the effect of the work requirement on employment is 11.3 percentage points (0.048/0.425).

The estimates are not sensitive to the imputation approach. They change little when I make large changes to the job finding and job losing rate used to impute employment for parents who have left TANF. Although those parents were assumed not to move between employment and nonemployment under imputation approach 1, they transition at rates that I estimate from the months in TANF under the second approach. I do not allow those transition rates to depend on whether the parent had been subject to the work requirement, which creates employment dynamics similar to those observed in the waiver experiments. Specifically, over the second and third year after entry into the program, the employment rate among parents who were not required to work catches up to the rate of parents who were required to work. However, the modification does not substantially change the estimates for the first year after entry because

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[28] Those estimates are consistent with the difference-in-difference analysis in that the work requirement only boosts employment and earnings during the months the families are in TANF. For example, applying the instrumental variables specification to a subsample consisting of those months indicates that the work requirement increases employment by 20.1 percentage points during those months. As that estimate is based on 65 percent of the sample, it implies that the employment boost from the months in the program can account for a 13.1 percentage-point rise in employment over the year after entry.

parents tend to be out of TANF for only a few months during that year.[29] Under the third approach, I examine whether the estimates are sensitive to the work requirement substantially reducing the stability of employment. I find that increasing the job loss rate by 25 percent for parents who were not exempt from the work requirement changes the estimates little because the additional job loss has little time to accumulate.

The work requirement appears to boost payments from the EITC and CTC. By estimating the effect of the work requirement on the quantiles of the earnings distribution, I calculate that it increases the average amount of tax credits that families receive by about $71 per month.[30] Like Bitler, Gelbach, and Hoynes (2006), I find that the policy boosts earnings the most for families near the middle of the distribution. Those families have incomes low enough to fall within the phase-in portion of EITC and CTC schedules. Thus, an additional dollar of earnings increases their EITC and CTC payments by about $0.40 and $0.15, respectively. My analysis is subject to the standard limitation in that I assume the work requirement does not change families' rank in the earning distribution.

In addition, I find evidence that Alabama's work requirement increases the number of families with very low incomes over the year after they enter TANF. The portion of months during which families did not have earnings or cash assistance rose by 7.6 percentage points. Those families typically receive SNAP benefits, but they rarely report income from other sources. One possible additional source of income for single parents who receive TANF benefits could be a working adult to whom they are not married but with whom they cohabitate.

Comparison With the Estimates From the AFDC Waiver Experiments

My estimates of the work requirement's average effect on employment over the first year after a family enters TANF are roughly similar to those from the AFDC waiver experiments. In the early 1990s, the AFDC programs in Grand Rapids, Mich., and Riverside, Calif., implemented work requirements aimed at quick attachment to the labor force (like Alabama's requirement).[31] The employment rates for the treatment groups exceeded those of the control groups by 10.7 and 16.7 percentage points, respectively (Hamilton and others 2001). Those differences are similar to my central estimate of 12.5 percentage points even though Alabama's work requirement expansion did not include an increase in access to work supports. However, that similarity does not rule out the importance of the increase in work supports in Grand Rapids and Riverside because other factors could have reduced the effectiveness of their work requirements. In

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[29] The point estimate rises by 1.7 percentage points, a change that is not statistically significant. Allowing employment transitions after parents leave TANF can increase the estimated effect on the employment rates because the parents who are subject to the work requirement leave TANF earlier and the job finding rate is higher than the job losing rate.

[30] Specifically, I apply the instrumental variable conditional quantile estimator developed by Chernozhukov, Fernandez-Val, and Kowalski (2015) to construct Wald estimates using *treatxpost* as an instrumental variable for *work_required*.

[31] Atlanta, Ga., also categorized one of its waiver programs as focused on labor force attachment, but it allowed many recipients to participate in education or training if their initial job search failed.

particular, both Grand Rapids and Riverside had high rates of unemployment at the time, whereas Alabama's unemployment rate was 4 percent in 2018. Job openings tend to be scarcer when unemployment is higher, which might lead to fewer people finding employment because of a work requirement.

I find more evidence of an increase in families' average cash income from Alabama's work requirement than the evaluations of the AFDC waiver experiments found. Some of the difference in those estimates can be explained by the larger gains in earnings for participants in Alabama's work requirement, and some can be explained by the smaller reduction in cash payments for those same participants. The reduction in cash assistance is smaller because Alabama provides smaller monthly cash payments than the programs in the AFDC waiver experiments provided. In contrast, the reduction in the number of months that cash assistance was received was larger in Alabama than in the AFDC waiver experiments.

Effects on Participation in TANF

I estimate that Alabama's work requirement reduces the number of months entrants spend in TANF by 19 percent, which suggests that it accounts for a modest portion of the decline in the number of TANF recipients over time. In Alabama, participation in TANF has decreased by 88 percent since 1996. The difference-in-difference analysis did not detect a reduction in entry into TANF from the work requirement, which suggests that it primarily reduces participation in TANF by shortening spells. I estimate that the work requirement reduces the portion of months that families receive cash assistance by 14 percentage points over the year after they enter the program, which amounts to a 19 percent reduction in participation among the families who are subject to the requirement (see Table 7). Thus, I calculate that the work requirement reduced participation by 9 percent in 2018 because about 44 percent of families were subject to it.[32] (In most cases, families were exempt because of a disabled or absent parent.) That calculation indicates the increase in participation from ending the work requirement would reverse a modest portion of the decline in participation witnessed over the past 25 years.

Discussion

This analysis is the first to estimate how TANF's work requirement affects employment and income by leveraging recent exogenous variation in the application of the work requirement while holding the other features of TANF constant, including access to employment services. The extensive literature on AFDC/TANF struggles to isolate the effects of work requirements and primarily examines policy changes that occurred over 20 years ago. I find that Alabama's work requirement increases the employment rate by about 12 percentage points over the first year after families enter the program, which elevates average income by boosting earnings and

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[32] In an average month during 2018, only 39 percent of families were subject to the work requirement because of the reduction in spell length that it caused. If not for the reduction in spell length, 44 percent would have been subject to it. Note that $N_{subject,pre} / (N_{subject,pre} + N_{not\_subject}) = 0.44$ because $N_{subject,pre} = N_{subject,post} / (1 - .19)$ and $N_{not\_subject} = N_{subject,post}(1/.39 - 1)$.

tax credits. But the requirement reduces the amount of cash assistance families receive, primarily by removing nonworking families from the program. On net, my analysis suggests that average income increases, but so does the frequency with which families have neither earnings nor cash assistance. Those results are inferred from families whose youngest child is between 6 months and 11 months old, although I find suggestive evidence that the results generalize to families with older children.

Work requirements might boost employment more in TANF than in SNAP or Medicaid because TANF provides more work supports. Alabama provides employment services to all parents in TANF; those services include in-person meetings with caseworkers, intensive job search assistance, and transportation assistance. In contrast, less than 5 percent of able-bodied nonelderly adults in SNAP participate in its employment and training program (Rowe, Brown, and Estes 2017), and Arkansas did not attach an employment and training program to Medicaid. Recent changes to SNAP may allow researchers to determine if work requirements boost employment more when such work supports are available. Over the past few years, several states have pledged to offer qualifying work activities to all SNAP participants who are at risk of losing their benefits because of the work requirement (Wheaton and others 2021).

Another reason that work requirements might boost employment more in TANF than in SNAP or Medicaid is that the programs impose work requirements on different populations. Even though all three programs impose work requirements on low-skilled populations that frequently face barriers to employment and are rarely married, TANF requires parents to work, whereas SNAP and Arkansas's Medicaid program required adults without dependents to work. Thus, only the parents required to work by TANF are eligible for large payments through the EITC and CTC. Those credits substantially increase the returns from employment, which amplifies the benefits of meeting the work requirement. Alternatively, it is possible that low-income, single parents are more responsive to potential increases in income than low-income, single adults without dependents. The literature indicates that the labor supply elasticity for low-income, single parents is higher than average but offers little insight on the labor supply elasticity for their counterparts without dependents (McClelland and Mok 2012).

Figures

Figure 1.

Employment of Single Women With No Education Beyond High School, by Presence of Children
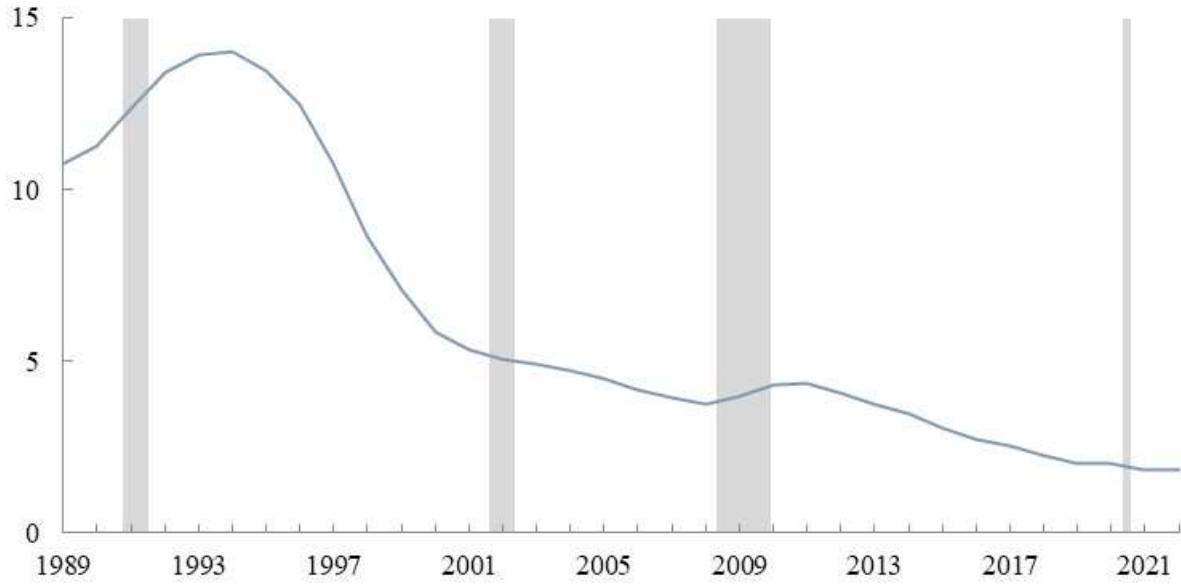
Portion Employed

Data source: Census Bureau, Annual Social and Economic Supplement to the Current Population Survey, from IPUMS-USA.

The data are by calendar year and are limited to unmarried women between the ages of 18 and 61 who have no postsecondary education, are not students, and are not receiving disability benefits.

Figure 2.

Recipients of Recurring Cash Payments Through TANF and AFDC

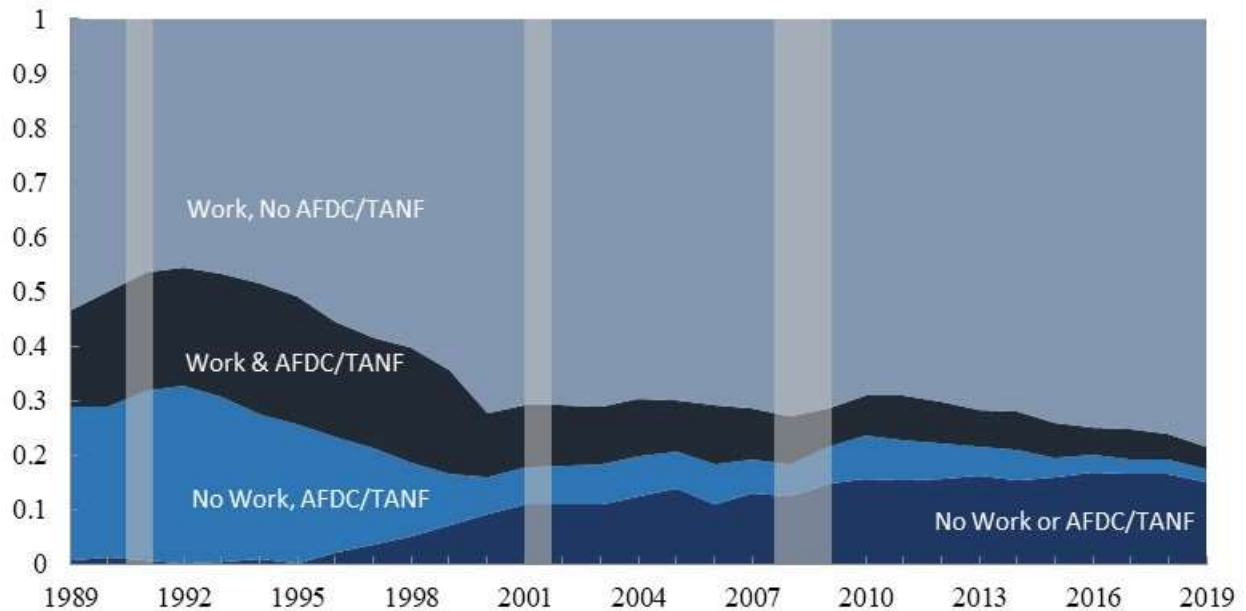Millions of People in an Average Month

Data source: Department of Health and Human Services.

AFDC = Aid to Families with Dependent Children; TANF = Temporary Assistance for Needy Families.

Figure 3.

Sources of Cash Income for Single Mothers With No Education Beyond High School

Portion

Data sources: Census Bureau, Annual Social and Economic Supplement to the Current Population Survey, from IPUMS-USA; Department of Health and Human Services.

I limit the sample to unmarried mothers (of dependents) between the ages of 18 and 61 who have no postsecondary education, are not students, and are not receiving disability benefits. The only sources of income considered are the mother's earnings from employment and recurring cash payments through TANF or its predecessor, AFDC. Sources of income are adjusted for errors in reporting. I adjust downward the number of single mothers without earnings by using reports of employment in the previous week from multiple interviews covering the same years. That adjustment decreased the estimated number of families without income from work or AFDC/TANF by 18 percent in 1993; by 2019, the size of that adjustment had grown to 29 percent. In addition, I adjust the percentage of single mothers who receive recurring cash payments so that it matches the administrative data.

AFDC = Aid to Families with Dependent Children; TANF = Temporary Assistance for Needy Families.

Figure 4.

Employment of TANF Recipients in Alabama, by Month and Work Requirement Status

Portion
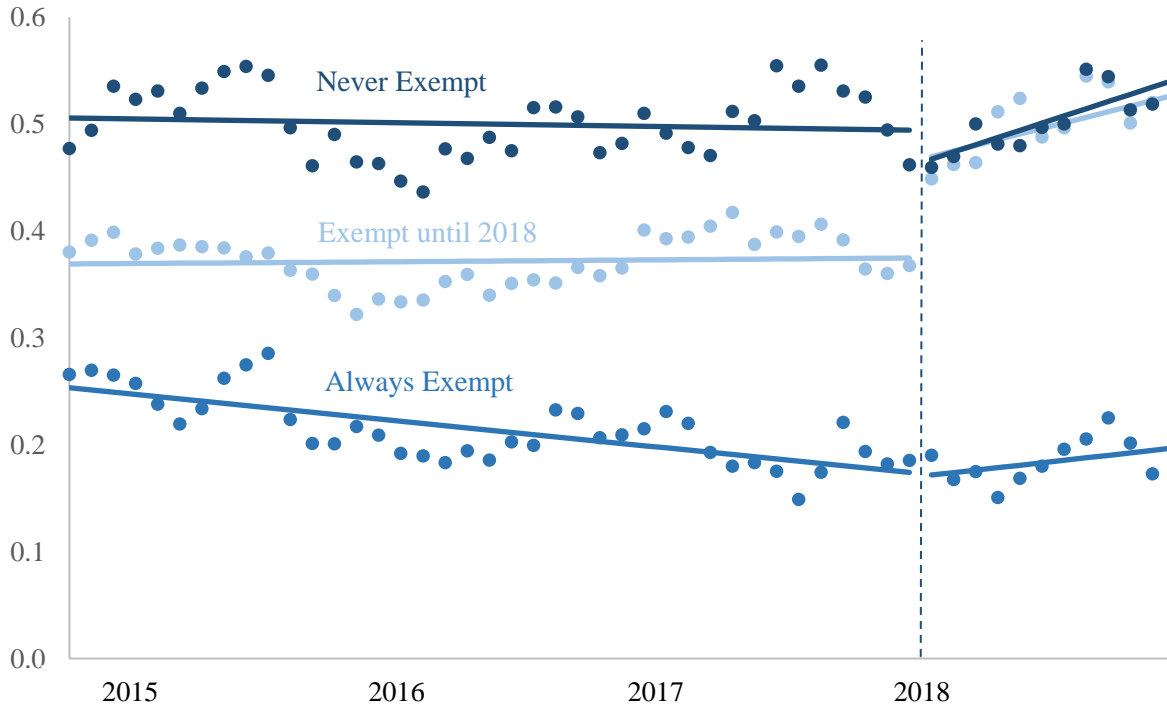
Data source: Department of Health and Human Services.

Parents whose youngest child was between 6 months and 11 months old were exempt from the work requirement from July 2014 through September 2017. (The Urban Institute's Welfare Rules Databook indicates the exemption was not available to those parents until July 2014.) Parents whose youngest child was between 0 months and 3 months old were exempt from the work requirement in all years. Parents whose youngest child was between 17 months and 23 months old were never exempt from the work requirement because of their child's age.

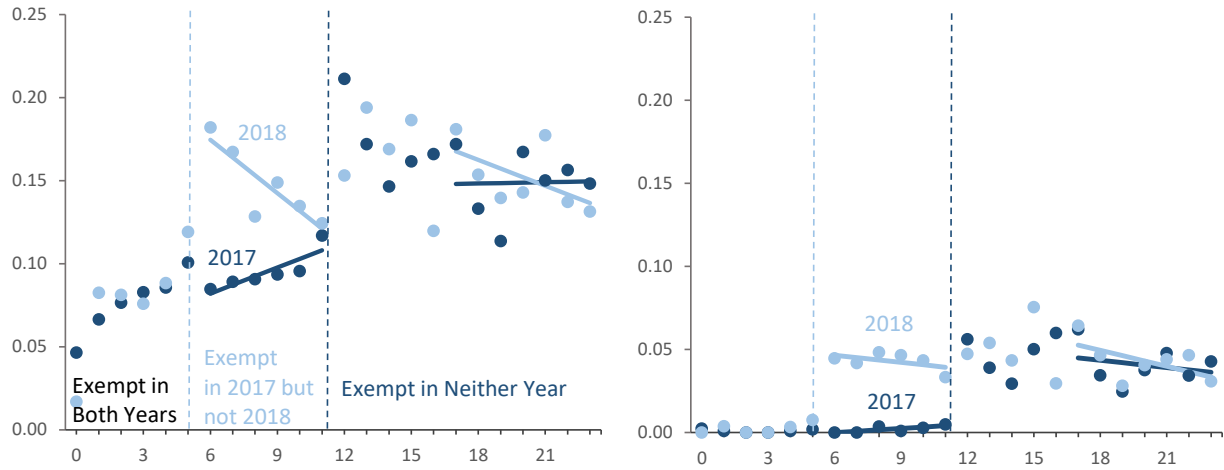TANF = Temporary Assistance for Needy Families.

Figure 5.

Termination of Cash Assistance, by Age of Youngest Child in Months

Monthly Rates

Left TANF for Any Reason

Left TANF Because of Work Requirement Violation
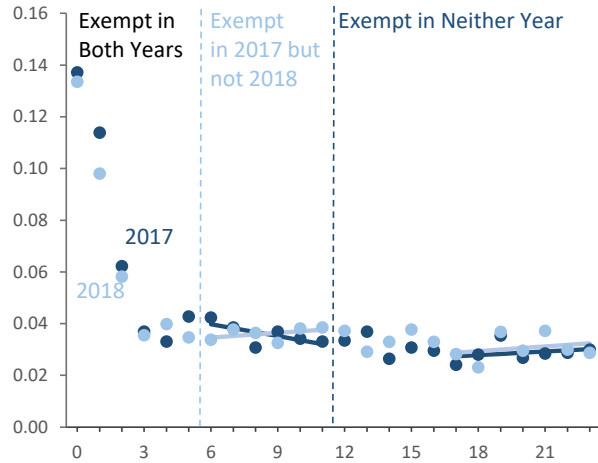

Data source: Department of Health and Human Services.

Parents whose youngest child was 4 months or 5 months old were occasionally subject to the work requirement in 2018. Parents whose youngest child was between 12 months and 16 months old were likely to be subject to the work requirement for more months because of its expansion.

TANF = Temporary Assistance for Needy Families.

Figure 6.

Characteristics of Program Entrants, by Age of Youngest Child in Months

Portion of Families Entering TANF

Parents' Average Years of Education at Entry

Data source: Department of Health and Human Services.

TANF = Temporary Assistance for Needy Families.

Figure 7.

Parents' Employment, by Age of Youngest Child in Months

Portion

While in TANF
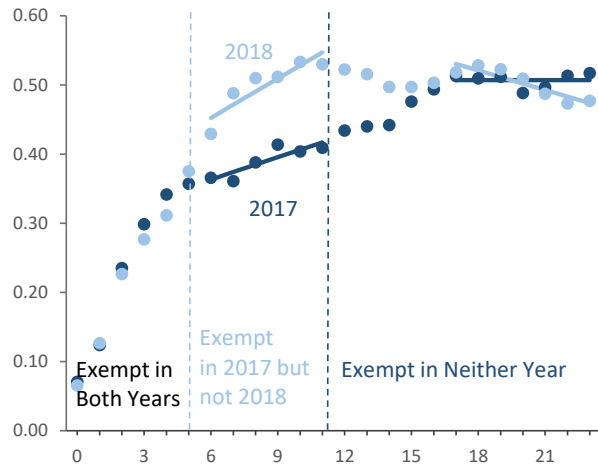
In Month They Left TANF

Data source: Department of Health and Human Services.

Parents whose youngest child was between 12 months and 16 months old were likely to be subject to the work requirement for more months because of its expansion.

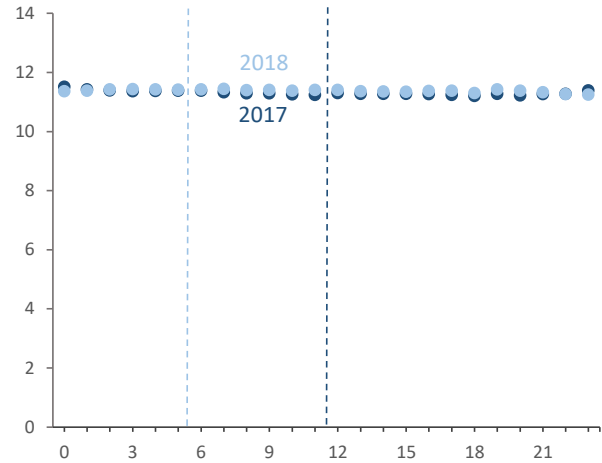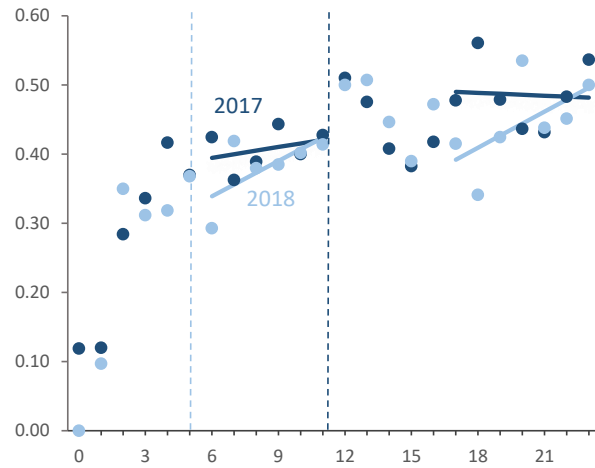TANF = Temporary Assistance for Needy Families.

Figure 8.

Parents' Monthly Cash Income, by Age of Youngest Child in Months

2022 Dollars

While in TANF
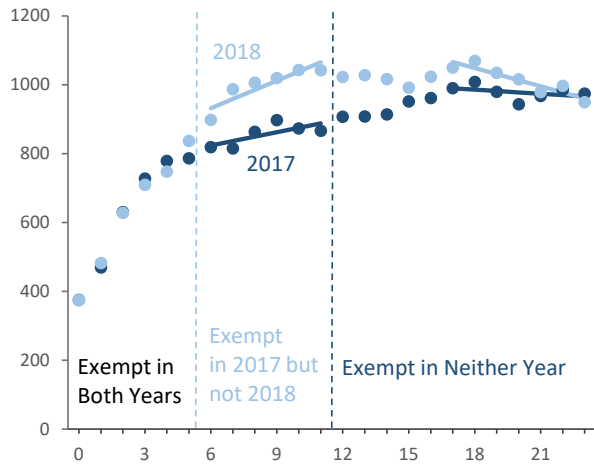
In Month They Left TANF
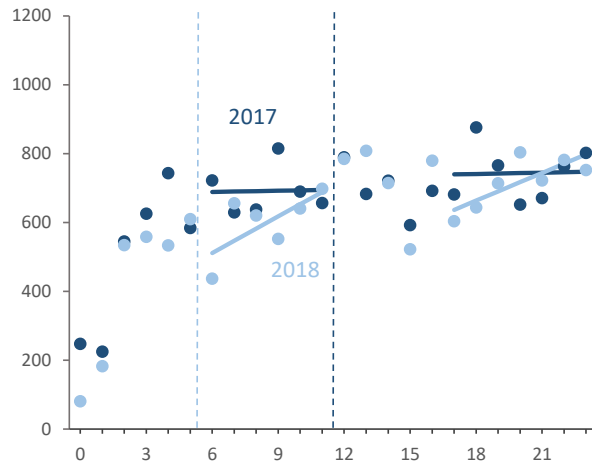
Data source: Department of Health and Human Services.

Parents whose youngest child was between 12 months and 16 months old were likely to be subject to the work requirement for more months because of its expansion.

TANF = Temporary Assistance for Needy Families.

Figure 9.

Frequency of Work Requirement and Parents' Employment During the Year After Entering TANF, by Age of Youngest Child at Entry in Months

Portion of Year Subject to the Work Requirement Portion of Year Employed
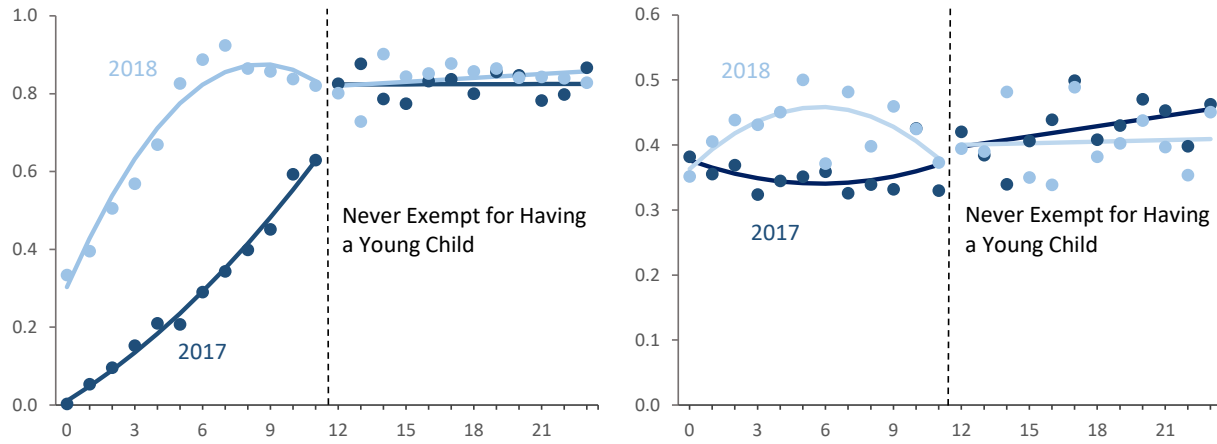
Data source: Department of Health and Human Services.

TANF = Temporary Assistance for Needy Families.

Tables

Table 1.

Characteristics of Parents, by Whether Subject to the Expansion of the Work Requirement

Portion

	Age of Youngest Child		
	6 to 11 months	17 to 23 months	Difference
Education			
No High School Diploma	0.247	0.270	-0.023
High School	0.544	0.524	0.020
Beyond High School	0.209	0.205	0.003
Female	0.997	0.997	0.000
Black	0.834	0.822	0.012
Hispanic	0.010	0.002	0.008
Average Age (Years)	26.2	26.6	-0.4 *

Data source: Department of Health and Human Services.

The comparison is based on the data for the postexpansion period so that both groups are subject to the work requirement. Significance level: * = 10 percent, ** = 5 percent, and *** = 1 percent.

Table 2.

Difference-in-Difference Estimates for the Termination of Cash Assistance and the Expansion of the Work Requirement

	Portion Left TANF			Portion Left TANF Because Violated the Work Requirement		
	(1)	(2)	(3)	(1)	(2)	(3)
TreatXpost	0.050 ***	0.051 ***	0.050 ***	0.038 ***	0.039 ***	0.039 ***
	(0.010)	(0.010)	(0.010)	(0.006)	(0.006)	(0.006)
Pre-expansion Mean	0.095	0.095	0.095	0.002	0.002	0.002
Included Covariates						
Demographics	No	Yes	Yes	No	Yes	Yes
Economic Conditions	No	Yes	Yes	No	Yes	Yes
Spell Length	No	No	Yes	No	No	Yes
Time Limit	No	No	Yes	No	No	Yes
Sample Size	20,299	20,299	20,299	18,149	18,149	18,149

Data source: Department of Health and Human Services.

All specifications include indicators for the treatment group and the period after Alabama stopped exempting them from the work requirement. Specification (2) also includes indicators for parents' educational attainment, race, ethnicity, and sex; a polynomial for their age; and the local unemployment rate for each of the past 12 months. In addition, specification (3) includes a vector of indicators for spell length and a function of participation counted toward the lifetime limit, which consists of an indicator for having received TANF for 60 months and a polynomial in months of receipt. Estimates of the standard errors are reported in parentheses. The estimator is robust to heteroscedasticity and dependent sampling by family. Significance level: * = 10 percent, ** = 5 percent, and *** = 1 percent.

TANF = Temporary Assistance for Needy Families.

Table 3.

Difference-in-Difference Estimates for Employment and the Expansion of the Work Requirement

	Portion Employed While in TANF			Portion Employed in Month Left TANF		
	(1)	(2)	(3)	(1)	(2)	(3)
TreatXpost	0.111 ***	0.111 ***	0.116 ***	0.012	0.012	0.024
	(0.023)	(0.023)	(0.021)	(0.039)	(0.039)	(0.037)
Pre-expansion Mean	0.390	0.390	0.390	0.409	0.409	0.409
Included Covariates						
Demographics	No	Yes	Yes	No	Yes	Yes
Economic Conditions	No	Yes	Yes	No	Yes	Yes
Spell Length	No	No	Yes	No	No	Yes
Time Limit	No	No	Yes	No	No	Yes
Sample Size	21,060	21,060	21,060	2,638	2,638	2,638

Data source: Department of Health and Human Services.

All specifications include indicators for the treatment group and the period after Alabama stopped exempting them from the work requirement. Specification (2) also includes indicators for parents' educational attainment, race, ethnicity, and sex; a polynomial for their age; and the local unemployment rate for each of the past 12 months. In addition, specification (3) includes a vector of indicators for spell length and a function of participation counted toward the lifetime limit, which consists of an indicator for having received TANF for 60 months and a polynomial in months of receipt. Estimates of the standard errors are reported in parentheses. The estimator is robust to heteroscedasticity and dependent sampling by family. Significance level: * = 10 percent, ** = 5 percent, and *** = 1 percent.

TANF = Temporary Assistance for Needy Families.

Table 4.

Difference-in-Difference Estimates for Earnings and the Expansion of the Work Requirement

2022 Dollars

| | While in TANF | | | | | Earnings Month Left TANF |
| | Monthly Earnings | While Employed | | | | |
		Hourly Wage	Hours Worked Per Week	Portion Worked Parttime	Monthly Earnings	
TreatXpost	130 ***	-0.15	-1.3 **	0.055 *	-66	-66
	(39)	(0.18)	(0.6)	(0.034)	(41)	(68)
Pre-expansion Mean	570	10.21	32.7	0.559	1,463	654
Sample Size	21,060	9,748	9,748	9,748	9,748	2,638

Data source: Department of Health and Human Services.

All specifications include indicators for the treatment group and the period after Alabama stopped exempting them from the work requirement. Estimates of the standard errors are reported in parentheses. The estimator is robust to heteroscedasticity and dependent sampling by family. Significance level: * = 10 percent, ** = 5 percent, and *** = 1 percent.

TANF = Temporary Assistance for Needy Families.

Table 5.

Difference-in-Difference Estimates for Monthly Cash Income and the Expansion of the Work Requirement

2022 Dollars

	While in TANF	At Exit
TreatXpost	103 **	-74
	(41)	(70)
Pre-expansion Mean	855	690
Sample Size	21,060	2,638

Data source: Department of Health and Human Services.

All specifications include indicators for the treatment group and the period after Alabama stopped exempting them from the work requirement. Estimates of the standard errors are reported in parentheses. The estimator is robust to heteroscedasticity and dependent sampling by family. Significance level: * = 10 percent, ** = 5 percent, and *** = 1 percent.

TANF = Temporary Assistance for Needy Families.

Table 6.

Comparison of Results to Placebo Test

2022 Dollars

	Portion Left TANF	Portion Employed	Earnings	Cash Income
TreatXpost				
Policy Change Sample	0.050 ***	0.111 ***	130 ***	103 **
(2017 and 2018)	(0.010)	(0.023)	(39)	(41)
Placebo Sample	-0.006	0.010	26	32
(2016 and 2017)	(0.008)	(0.022)	(36)	(37)

Data source: Department of Health and Human Services.

All specifications include indicators for the treatment group and the second year of the sample. Estimates of the standard errors are reported in parentheses. The estimator is robust to heteroscedasticity and dependent sampling by family. Significance level: * = 10 percent, ** = 5 percent, and *** = 1 percent.

TANF = Temporary Assistance for Needy Families.

Table 7.

Instrumental Variables' Estimates of the Effects on Employment and Monthly Income Over the Year After Families Enter TANF

2022 Dollars

	Cash Assistance	Portion Employed	Earnings	Cash Income	Portion No Earns or Cash Assist.	Portion Receiving Cash Assist.
Imputation Approach 1						
Work_required	-48 ***	0.125 ***	184 **	123 *	0.076 **	-0.142 ***
	(11)	(0.043)	(69)	(74)	(0.038)	(0.036)
Mean at Work_req=0	195	0.294	417	651	0.197	0.731
Imputation Approach 2						
Work_required	-48 ***	0.139 ***	214 ***	153 **	0.063 **	-0.140 ***
	(11)	(0.038)	(63)	(67)	(0.031)	(0.035)
Mean at Work_req=0	195	0.329	463	696	0.162	0.730
Imputation Approach 3						
Work_required	-47 ***	0.129 ***	199 ***	138 **	0.073 **	-0.140 ***
	(11)	(0.038)	(62)	(67)	(0.031)	(0.036)
Mean at Work_req=0	195	0.331	466	699	0.159	0.730
All Models						
F-Stat for Instruments	60	60	60	60	60	60
Sample Size	53,473	53,473	53,473	53,473	53,473	53,473

Data source: Department of Health and Human Services.

Work_required are the fitted values for the portion of months that the family is subject to the work requirement. Those fitted values are predicted using a vector of indicators for the age of the youngest child (in months) interacted with an indicator for the postexpansion period. The data do not include earnings and employment for families who are out of TANF for more than a month, which is 28 percent of the sample. I impute those values using three different models, which are described in the text. The standard errors are estimated by bootstrapping and reported in parentheses. The bootstrapping process uses 5,000 replications and is robust to heteroscedasticity and dependent sampling by family. Significance level: * = 10 percent, ** = 5 percent, and *** = 1 percent.

TANF = Temporary Assistance for Needy Families.

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Supplemental Figures

Figure S1.

A Conceptual Illustration of Budget Constraints for Single Parents in Alabama, by TANF's Work Requirement
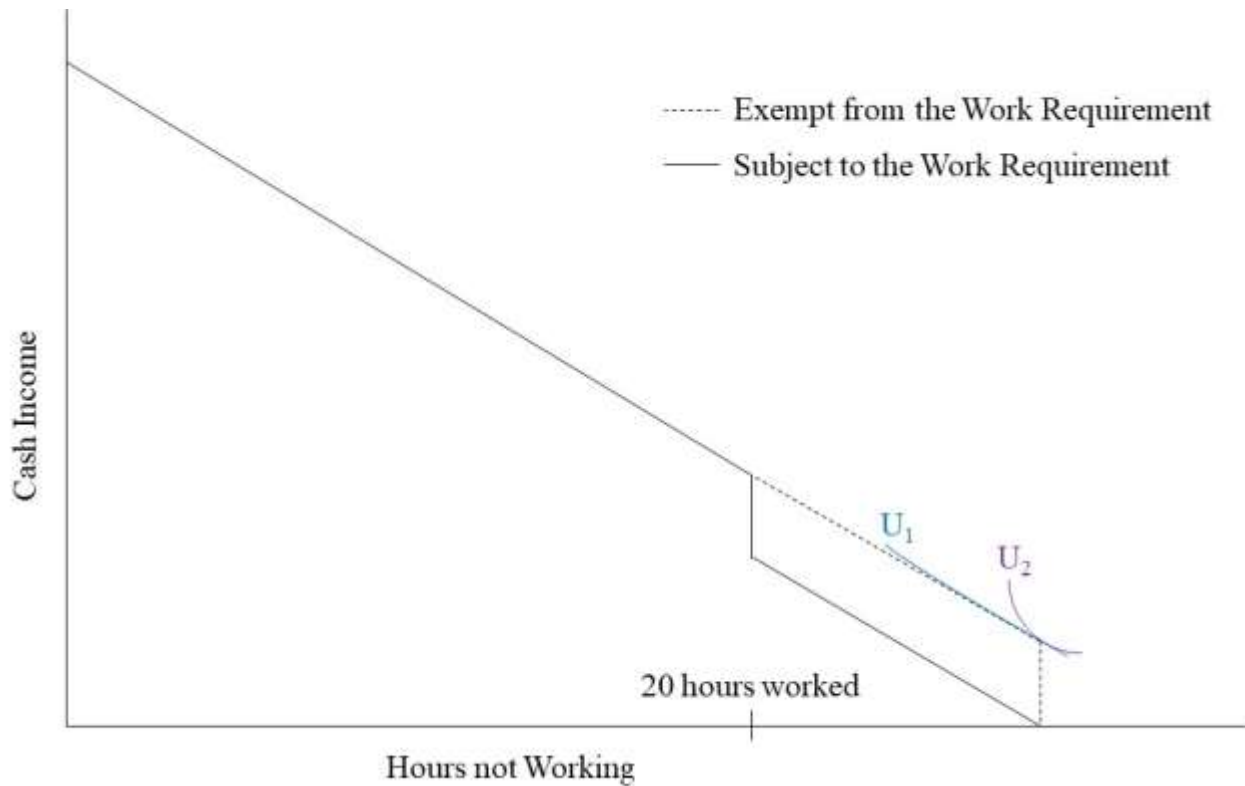
Data source: Congressional Budget Office.

The stylized budget constraints account for earnings and cash assistance from TANF. They represent the options for parents during the first 12 months after entering TANF. In those months, all earnings are disregarded from the calculation of benefits. (In subsequent months, 20 percent of earnings are disregarded.) The parents do not receive cash assistance if they do not work at least 20 hours per week.

Parents with utility functions U_1 or U_2 would not work if exempt from the work requirement. Imposing the work requirement increases the returns from working the required number of hours. The parent with the flatter utility function, U_1, would respond by working at least 20 hours per week (the substitution effect). In contrast, the parent with the more convex preferences, U_2, would not comply with the requirement because they would not give up 20 nonworking hours. Thus, they would lose cash assistance, which could result in their working a few hours to offset some of that lost income (the income effect), but the fixed cost of employment or other factors not in this illustration might prevent that increase in employment.
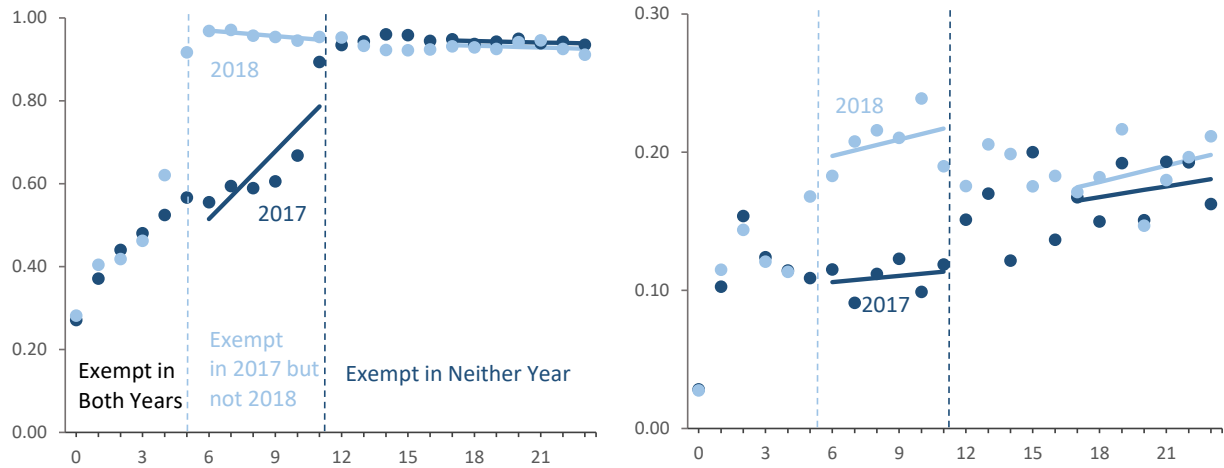
TANF = Temporary Assistance for Needy Families.

Labor Force Participation and Job Finding, by Age of Youngest Child in Months

Portion

Labor Force Participation While in TANF   Job Finding Among Non-Employed

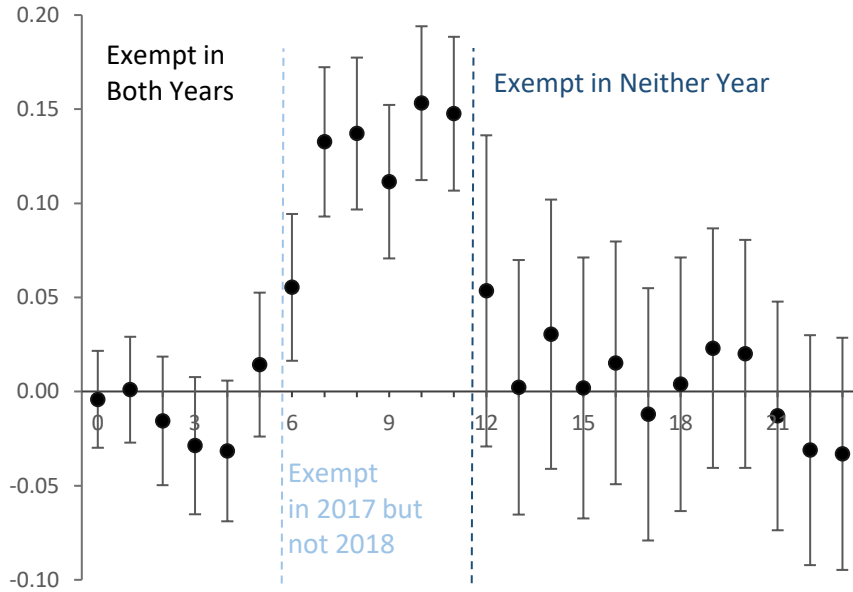Data source: Department of Health and Human Services.

Parents whose youngest child is between 12 months and 16 months of age are likely to be subject to the work requirement for more months because of its expansion.

TANF = Temporary Assistance for Needy Families.

Employment While in TANF Without Lagged Effects, by Age of Youngest Child in Months

Portion Employed in 2018 Minus Portion Employed in 2017
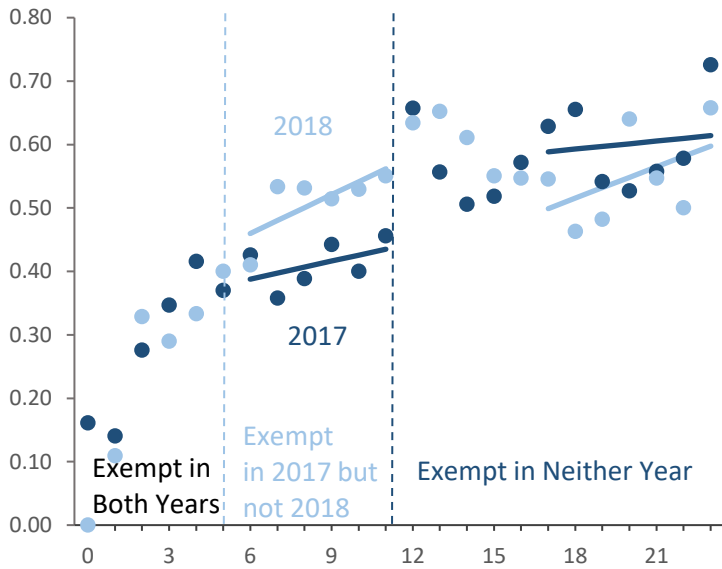

Data source: Department of Health and Human Services.

To remove any lagged effects from the expansion of the work requirement among parents whose youngest child is over 11 months old, I exclude them from the sample if they were in TANF when their child was 11 months old or younger. The central estimates are from regressing an indicator for employment on *post* for each month of age, and the whiskers represent the 95 percent confidence interval.

TANF = Temporary Assistance for Needy Families.

Parents Employed in the Month They Left TANF, Excluding Those Who Were Removed for Violating the Work Requirement, by Age of Youngest Child in Months

Portion

Data source: Department of Health and Human Services.

Parents whose youngest child is between 12 months and 16 months of age are likely to be subject to the work requirement for more months because of its expansion.

TANF = Temporary Assistance for Needy Families.

Figure S5.

Parents' Monthly Job Finding Rate, by Age of Youngest Child in Months and Whether the Parent Is Exempt From TANF's Work Requirement

Portion

Data source: Department of Health and Human Services.

I estimate a slope for nonexempt parents of -0.0002 with a standard error of 0.0001. For exempt parents, the point estimate for the slope is -0.0015, and the standard error is 0.0017.

TANF = Temporary Assistance for Needy Families.

Supplemental Tables

Table S1.

Difference-in-Difference Estimates for Work Supports and the Expansion of the Work Requirement

	Received Subsidized Child Care	Weekly Hours of Job Training	Weekly Hours of Subsidized Employment
TreatXpost	-0.032	0.200	-0.219
	(0.026)	(0.319)	(0.554)
Mean for Exempt	0.459	0.635	0.302
Sample Size	17,719	11,855	11,855

Data source: Department of Health and Human Services.

All specifications include indicators for the treatment group and the period after Alabama stopped exempting them from the work requirement. Estimates of the standard errors are reported in parentheses. To focus on parents who are eligible for work supports, the sample for subsidized child care is limited to parents who are in the labor force, and the samples for job training and subsidized employment are limited to parents who do not have unsubsidized jobs. The estimator is robust to heteroscedasticity and dependent sampling by family. Significance level: * = 10 percent, ** = 5 percent, and *** = 1 percent.

Robustness of Difference-in-Difference Estimates to Sample Exclusions

	Portion Left TANF			Portion Employed While in TANF	
	(1)	(2)	(3)	(1)	(2)
TreatXpost	0.050 ***	0.052 ***	0.051 ***	0.111 ***	0.111 ***
	(0.010)	(0.011)	(0.010)	(0.023)	(0.025)
Mean for Exempt	0.095	0.099	0.094	0.409	0.394
Excluded Observations					
Youngest Child Changes	No	Yes	No	No	Yes
September	No	No	Yes	No	No
Sample Size	20,299	17,629	19,370	21,060	18,277

Data source: Department of Health and Human Services.

All specifications include indicators for the treatment group and the period after Alabama stopped exempting them from the work requirement. In specification (2), I exclude spells during which the youngest child changes. In 99 percent of those spells, a newborn was added to the family. In specification (3), I exclude observations from September 2017 because I do not observe whether families left TANF in September 2018. Estimates of the standard errors are reported in parentheses. The estimator is robust to heteroscedasticity and dependent sampling by family. Significance level: * = 10 percent, ** = 5 percent, and *** = 1 percent.

TANF = Temporary Assistance for Needy Families.

Table S3.

Comparison Between Parents in TANF Who Are Subject to the Expansion of the Work Requirement and Parents of Older Children in TANF, by Age of Youngest Child

	6 to 11 months	1 to 5 years	6 to 12 years	13 to 18 years
Sample Means				
Monthly Outcomes				
Left TANF	0.149	0.156	0.159	0.157
	(0.005)	(0.003)	(0.004)	(0.008)
Employed	0.498	0.502	0.463	0.353
	(0.011)	(0.007)	(0.012)	(0.025)
Earnings	704	708	730	552
	(19)	(12)	(22)	(44)
Cash Income	995	1013	1078	903
	(20)	(13)	(23)	(48)
Education				
No High School Diploma	0.249	0.258	0.241	0.299
	(0.012)	(0.008)	(0.012)	(0.028)
High School	0.543	0.501	0.481	0.435
	(0.013)	(0.010)	(0.015)	(0.030)
Beyond High School	0.208	0.241	0.278	0.266
	(0.011)	(0.008)	(0.013)	(0.026)
Observations	12,965	39,326	16,329	4,469

Data source: Department of Health and Human Services.

The comparison is based on the data for the postexpansion period so that all groups are subject to the work requirement. Estimates of the standard errors are reported in parentheses. The estimator is robust to heteroscedasticity and dependent sampling by family.

TANF = Temporary Assistance for Needy Families.