

Penalties in the Safety Net: Effects of Work Requirement Enforcement on Program Participation and Labor Supply*

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U.S. cash assistance promotes self-sufficiency through employment but imposes sanctions when participants violate work requirements. This paper uses administrative data covering the full caseload of Michigan’s Temporary Assistance for Needy Families (TANF) program between 2009-2019 to quantify the effects of being sanctioned on program participation and labor supply. We study a reform that increased penalty duration from three to six months and estimate economic responses to harsher sanctions in a difference-in-differences framework. Few families return to TANF after being removed during a sanction, which we show decreases enrollment in the Supplemental Nutrition Assistance Program (SNAP) and Medicaid for all case members, even those that remain eligible for programs. Labor supply responses do not offset lost benefit income, and increasing sanction duration leads to deteriorating formal employment. On net, harsher penalties reduce cumulative household resources by an additional 84 percent over the subsequent two years. Instead of motivating work effort, our findings indicate that penalties reduce broader safety net attachment and increase economic instability for vulnerable families over the long-term.

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1 Introduction

Low-income American families rely upon a complex, patchwork safety net to make ends meet. The Temporary Assistance for Needy Families (TANF) program and the Supplemental Nutrition Assistance Program (SNAP) provide monthly cash and food assistance, respectively. Together, they represent a crucial source of income for participants: the average TANF participant reported only \$150 of monthly non-benefit income in 2019, relative to \$450 of TANF and \$450 of SNAP benefits.¹ However, participants must navigate many rules and work requirements in order to access benefits, which are particularly stringent in the TANF program. When participants do not verify employment-related activities, TANF benefits are reduced or removed for periods of time in so-called "work sanctions." While intended to motivate work effort, sanctions also remove a large proportion of monthly income from affected households and eliminate categorical eligibility for other safety net programs. If sanctioned families do not increase labor supply to offset lost benefit income and take steps to re-certify eligibility for programs like SNAP and Medicaid, then sanctions may have larger and longer-term ramifications for economic security.

This paper uses individual-level administrative data from the Michigan Department of Health and Human Services (MDHHS) to study how safety net attachment and labor supply evolve surrounding a violation of TANF work requirements. For the universe of individuals ever enrolled in Michigan TANF between 2009-2019, we combine data on monthly TANF, SNAP and Medicaid enrollment with quarterly earnings records and rich demographics. In addition, we observe detailed information about why cases are removed from TANF, allowing us to precisely identify each violation of work requirements and estimate how program enrollment, employment and earnings respond to sanctioning. Because our unique panel structure follows all individuals exposed to work sanctions over time, we quantify effects for those directly sanctioned from TANF, as well as their household members, the majority of whom are children.

We next leverage a natural experiment to quantify how time removed from the TANF program affects economic security. In October 2011, Michigan increased the duration of TANF work sanctions such that penalties for a first violation of work requirements remained the same, but the penalty period for a second violation increased from three to six months, and the penalty for a third violation increased from twelve months to a lifetime ban. We use a difference-in-differences model to compare program participation and labor supply surrounding second work sanctions that resulted in losing TANF access for three months prior to the reform (control) relative to six months after the reform (treatment). Our specification includes time-series fixed effects and demographic covariates, as well as inverse propensity score weights to address changing sample composition. As the reform increased penalties associated with both second and third work sanctions, those sanctioned for the second time after the reform may also change behavior in anticipation of a future harsher penalties. Thus, our main estimates capture both the effect of three additional months without access to TANF benefits, as well as responses due to the possibility of a future lifetime

¹See Table 11, 37, 40 from [Office of Family Assistance, 2020](#).

ban.

This strategy identifies the causal effect of increasing second sanction severity, under the assumption that safety net participation and labor supply would have evolved in parallel between those sanctioned before relative to after the reform, in absence of the policy change. While our control variables remove confounding variation and our propensity-score weights account for treatment effect heterogeneity, we still may be concerned that those sanctioned after the reform responded differently due to improving secular and cyclical conditions out of the Great Recession, and changing unobservable selection into sanctioning. We address these threats to identification by first showing our results are robust to the inclusion of individual fixed effects. Second, we show that the proportion of the TANF caseload sanctioned, as well as the characteristics of those sanctioned, does not change discretely surrounding the reform. Finally, we remove additional variation attributable to changing economic conditions with a triple difference model that includes those sanctioned only once as an additional control group. We show that the triple difference results are qualitatively in line with our main specification, but help contextualize concerns about changing economic conditions and anticipation of future penalties, relative to the effect of three additional months without TANF access.

We find that work sanctions affect a large portion of the modern welfare caseload: 40 percent of the near 510,000 individuals enrolled in Michigan TANF and exposed to work requirements between 2009-2019 experience at least one work sanction. Those who identify as Black non-Hispanic, are younger in age and have younger children are most likely to be sanctioned, and sanctioned workers report lower average employment rates and earnings. In addition to removing families from TANF while sanctions are in effect, individuals exposed to work sanctions are persistently less likely to return to TANF once sanctions end. Our difference-in-differences specification shows that while 75 percent of workers subject to three-month penalties returned to TANF two years after their sanction, increasing sanction severity led to a 27 percentage point reduction in reattachment over this time horizon. When we difference out responses of those subject to only one work sanction, our triple difference strategy indicates that 77% of this effect is driven by three additional months without access to TANF.

TANF sanctions have far-reaching consequences for safety net participation, as being removed from TANF increases the likelihood of missing SNAP re-certification or losing nearly automatic re-determination of Medicaid. In the case of SNAP specifically, policy rules dictate that sanctioned beneficiaries in violation of SNAP work requirements are removed from both programs for the duration of their sanction. We show that even those that maintain SNAP enrollment at the start of their work sanction lose access during the penalty period. When penalties duration increased from three to six months, beneficiaries were 5.7 percentage points (6.2%) less likely to be enrolled in SNAP when their sanctions ends. Sanctioned beneficiaries also lose access to Medicaid during months of their sanction when they no longer qualify for automatic eligibility re-determination, such that increasing sanction duration leads to a 4.6 percentage point (4.9%) decline in Medicaid enrollment after a six-month penalty. Removing variation surrounding first work sanctions in our

triple difference model delivers very similar estimates, indicating that neither changing economic conditions nor anticipating harsher future penalties affects the extent to which time removed from TANF decreases SNAP and Medicaid enrollment during months of an active sanction.

Regardless of sanction duration, work sanctions lead to startlingly large and lasting gaps in SNAP and Medicaid take-up. Beneficiaries that violate SNAP work requirements at the same time as TANF work requirements lose access to both programs, but should become eligible again once sanctions end. However, we find that affected beneficiaries do not return to SNAP even when eligibility is reinstated, and as a result, remain 16-18 percentage points (17-20%) less likely to be enrolled in SNAP two years after sanctioning. Enrollment in Medicaid also continues to decline even once penalties expire, such that sanctioned beneficiaries are 13-16 percentage points (14-17%) less likely to be enrolled two years after sanctioning. Taken together, these findings are particularly notable, as we may have expected enrollment in less-targeted programs such as SNAP and Medicaid to increase when TANF is not accessible. Instead, we find that removing people from TANF leads to persistent declines in take-up even in safety net programs with far fewer eligibility requirements.

We next explore whether beneficiaries offset lost benefit income through labor supply. We show that during the quarters of a work sanction, formal employment does not increase on average, but conditional on working, quarterly earnings increase by around \$800. The average sanctioned case foregoes \$450 of TANF benefits each month of their sanction, and spillovers to SNAP decrease monthly benefits by an additional \$50 on average. As such, the average individual sanctioned from TANF experiences a net loss of financial resources during months of their sanction, even if they increase intensive margin labor supply. Once sanctions end, labor supply responses diverge depending on sanction duration: while employment of those subject to three-month penalties steadily increases over subsequent quarters, the employment of those subject to six month penalties steadily declines. This pattern is driven by a decreasing job entry rate among those subject to harsher sanctions, rather than an increasing exit rate. Two years after sanctioning, workers subject to six-month penalties are 13.8 percentage points less likely to be formally employed than those subject to 3 month penalties and earn an average of \$796 dollars less over this time. Because those subject to only one sanction are slightly less likely to be formally employed two years after a post-reform sanction, our triple difference model finds that being subject to a six-month second sanction led to an imprecise 8.7 percentage point reduction in formal employment after two years.

Turning to effects among non-beneficiary TANF case members, we show that decreased beneficiary enrollment in TANF, SNAP and Medicaid lead to broader enrollment reductions. In theory, SNAP and Medicaid eligibility of case members who do not violate or are not subject to work requirements should be unaffected by work sanctions. However, we show that enrollment of case members in both programs steadily declines after a beneficiary is sanctioned, and more so during months when penalties are in effect. By the end of a six-month penalty, case members are 4.7 percentage points (4.9%) less likely to be enrolled in SNAP and 3.3 percentage points (3.4%) less

likely to be enrolled in Medicaid relative to those subject to three month sanctions. Once sanctions end, enrollment continues to decline, such that case members are around 12 percentage points (13%) less likely to be enrolled in SNAP or Medicaid two years after a work sanction, regardless of penalty duration. As before, our triple difference model leaves this finding unchanged.

Finally, we test whether non-beneficiary adult case members increase labor supply to offset lost benefit income.² We find no evidence of increased employment during sanctions for this group. When we sum together the TANF, SNAP, and earnings income associated with every member of a sanctioned case, we find that increasing the length of a work sanction from three to six months decreased household financial resources by a total of \$2,066 dollars over the 8 quarters following a harsher work sanction.³ Relative to the total average resources accrued over this time among those subject to six-month penalties, this represents an approximate 10 percent reduction. In comparison to the \$2,464 decline in total average resources among those subject to three-month penalties, we find that harsher sanctions led to an 84 percent larger reduction in financial resources over two years.

Our study provides the first causal evidence on how work requirement penalties affect economic security. Existing studies of TANF work sanctions find that being sanctioned is predictive of future material hardships (Kalil et al., 2002; Reichman et al., 2005; Lindhorst and Mancoske, 2006), and that the duration of sanctions is associated with increased likelihood of leaving TANF with a low earning job or unemployed (Wu, 2008; Wu et al., 2014). However, these studies rely on small-sample survey data that may be subject to measurement error (Meyer and Mittag, 2019), do not include design-based methods, and have limited statistical power. By combining numerous sources of administrative panel data, we establish the first causal link between work sanctions and subsequent program participation and labor supply, highlighting that these penalties fall short of achieving their goal of increasing work effort. Moreover, with data that follows individuals exposed to sanctions across programs and over time, we quantify how TANF penalties generate spillovers for adults and children who should be theoretically unaffected.

In addition, we contribute to research on economic responses to safety net work requirements. Existing studies of effects in TANF focus on policy variation of the 1990s and find that TANF's implementation was associated with dramatic declines in welfare caseloads. Studies of state waiver experiments, most notably the Connecticut Jobs First reform in 1996, find that TANF led to significant labor supply responses (Bitler et al., 2006; Kline and Tartari, 2016). Nonetheless, these estimates may be confounded by numerous other social policy reforms that dramatically increased the benefits of work (Blank, 2002; Moffitt, 2002; Kleven, 2019), and may have limited applicability to modern TANF programs that have evolved substantially since this time (Danziger et al., 2016; Tach

²Because only 15 percent of cases have more than one adult, we have limited statistical power to sign effects. Point estimates are negative for two years post-sanctioning, but confidence intervals can only rule out responses greater than 15 percentage points and less than 35 percentage points.

³Our triple difference model estimates a smaller reduction in TANF reattachment, which translates to a lower total resource effect, i.e. \$1107 fewer financial resources over two years.

and Edin, 2017; Parolin, 2021).⁴ More recent studies of SNAP and Medicaid find no evidence that employment increases when participants become subject to work requirements (Gray et al., 2023; Sommers et al., 2020; Bitler et al., 2021; Cook and East, 2023, 2024). Relative to these papers, we document multiple program enrollment and labor supply of the entire Michigan TANF caseload, providing unique insight into how this very constrained group interacts with work-contingent benefits. Rather than quantifying effects of becoming subject to work requirements, we show how penalties intended to enforce TANF requirements can lead to broader safety net dis-enrollment and deteriorating formal employment.

Finally, this paper expands our understanding of how safety net programs are used in combination. While existing papers show that expanding access to one safety net program can increase enrollment of other household members or in other benefits (Schmidt et al., 2019; Sacarny et al., 2022), complex rules that differ across safety net programs may push in the opposite direction. Indeed, frictions in accessing government services have been shown to generate learning, compliance and psychological costs (Gennetian and Shafir, 2015; Davis and Williams, 2020; Herd et al., 2023), which research finds are particularly large for very low-income groups that are eligible for multiple programs (Deshpande and Li, 2019; Ko and Moffitt, 2022; Herd et al., 2023; Parolin et al., 2023). We show that frictions in TANF access lead to large declines in attachment to TANF, SNAP and Medicaid. As such, burdens serve to undermine the aim of safety net programs to prevent poverty when used together. Our paper thus adds to growing evidence that reducing safety net burdens can increase enrollment of eligibles across programs (Wu and Meyer, 2021; Fox et al., 2023; Schmidt et al., 2024).

In sum, this paper shows how safety net penalties impact long-run economic security. By linking individual data on multiple program enrollment and quarterly earnings, to detailed records of each violation of TANF work requirements, we show that sanctioning removes resources on net. We highlight that making penalties more severe – in tandem with the broad safety net dis-enrollment that they cause – can actually reduce labor force participation. Reducing penalties and administrative burdens, especially those that link access to core assistance programs, would thus likely increase economic security among a very economically marginalized group.

2 Institutional Background and Policy Details

The origins of the U.S. welfare state can be traced back to the Social Security Act of 1935, which established the Aid to Families with Dependent Children (AFDC) program to provide cash welfare payments to children without parental support.⁵ Initially, the Federal government imposed very

⁴(Falk, 2023) studies the expansion of Alabama work requirements to mothers of infant children in 2018, finding evidence of decreased TANF caseloads, increased employment conditional on being enrolled, and an increased number of families with zero earnings and no TANF enrollment.

⁵The AFDC-UP program was established in 1961 and provided aid to unemployed parents on the condition they accept work. "Community Work and Training" (CWT) programs were established in 1962-1964 to provide job training and wages.

few restrictions on state AFDC programs: each state was required to designate a responsible agency to administer the program, and to set eligibility thresholds and benefit amounts. Over time, policy emphasis shifted towards work conditionality and categorical targeting to reduce welfare dependency ([Danziger et al., 2016](#)), in part informed by theoretical work highlighting how program restrictions might improve transfer targeting ([Nichols and Zeckhauser, 1982](#)), and how work requirements may encourage poverty-reducing investments ([Besley and Coate, 1992](#)).

The 1996 Personal Responsibility and Work Opportunity Reconciliation Act (i.e. "welfare reform") formalized this shift and replaced AFDC with TANF, which included five year lifetime time-limits and enforced work requirements through sanctions that either reduce benefit income or terminate benefits.⁶ Since then, state programs have become increasingly heterogeneous and the number of TANF participants has declined from 4.7 million cases in January 1996 to 1.3 million cases in January 2015.⁷ Sanction scope and severity have also evolved substantially; in 1996, nearly all states used partial sanctions that decreased benefit amounts, but by 2011, 44 states had adopted complete closure that require reapplication to restore benefits after a sanction.⁸

2.1 Michigan's TANF program

Michigan's TANF program – the Family Independence Program (FIP) – provides monthly cash assistance to households with children. To apply for the program, each applicant must participate in a case-worker interview and submit documents to verify income and asset eligibility.⁹ We refer to individuals subject to work requirements and responsible for applying and verifying eligibility as "beneficiaries." Once eligibility is verified, all able-bodied adults must attend a 21-day job training program and adhere to work requirements. The stated goal of these requirements is to ensure that "recipients of FIP engage in employment and self-sufficiency related activities so they can become self-supporting" ([MDHHS, 2024a](#)).

To meet requirements, participants must engage in "employment-related" activities for 30 hours per week – 20 hours per week if they care for a child under the age of 6, or a combined 50 hours per week if there are two workers in the TANF case.¹⁰ Other than formal employment, activities that count towards the first 20 hours include job search, job readiness training, vocational training, on-the-job training, providing childcare for others, and community service. Job search hours are limited to 12 weeks per year, with no more than 4 consecutive weeks, and community service hours are capped. While our data does not specify how participants meet requirements, state reporting data from 2011 shows 56 percent of participants did at least some amount of unsubsidized employment, 30 percent searched for a job, 11 percent did community service, and 9

⁶TANF adults cannot receive more than 5 years of benefits in their lifetime, unless they are granted a "hardship exemption" available for up to 20% of a state's caseload. For more information about subsequent reforms to the TANF program, see [Service \(2023\)](#).

⁷See [Office of Family Assistance](#)

⁸See [Urban Institute Welfare Rules Database](#)

⁹See [Appendix B](#) for detailed income eligibility rules and TANF benefit amount calculation formulas.

¹⁰Workers can claim deferrals from work requirements if they meet certain criteria as listed in ([MDHHS, 2024a](#)).

percent took part in vocational education.¹¹ To verify participation in work activities, caseworkers must receive two consecutive pay stubs, get confirmation from managers, supervisors, or use Equifax employment verification services.

Participants are considered in violation of work requirements if they quit a job, are fired for misconduct or absenteeism, voluntarily reduce their hours or earnings, refuse an offer of employment or hours, do not participate in orientation activities, or fail to report changes to income or employment. Michigan policy closes the entire case from the TANF program for increasing amounts of time upon each violation, meaning that the case receives zero benefits and must re-apply for benefits once a sanction ends.¹² In addition, sanctioned months count towards Federal and State time limits and reduce total lifetime months of program access. The stated intention of these penalties is to "obtain client compliance with appropriate work and/or self-sufficiency related assignments and to ensure that barriers to such compliance have been identified and removed" (MDHHS, 2024c).

Beyond removing participants from TANF, work sanctions have direct linkages and implications for access to other safety net programs. First of all, while SNAP requirements are more lenient than TANF work requirements, in that they do not involve an hourly requirements and include more generous deferral reasons (MDHHS, 2024b), policy states that if the violation of TANF work requirements also violates SNAP work requirements, workers will be removed from the SNAP program for the duration of their sanction period (MDHHS, 2024d). Other case members should remain eligible and enrolled in SNAP during the penalty period; however, they will receive fewer SNAP benefits in correspondence with a smaller assistance unit size.¹³ Secondly, losing access to TANF during a work sanction means also losing access to categorical eligibility, which allows TANF participants to automatically meet income and asset eligibility when re-certifying for SNAP and Medicaid every 6 to 12 months. This means that, in addition to remembering to re-certify eligibility for themselves and other case members while sanctioned, individuals will need to verify their income and assets with additional documentation.

2.2 Policy Reform

In October 2011, Michigan passed legislation that increased the penalties for work non-compliance, decreased time limits, and changed the treatment of earnings in benefit calculations (House Bill No. 4409 of the 96th legislature). Prior to this, these aspects of the program had not been changed since 2007, before the Great Recession.

Table 1 summarizes the reform's components. First, the bill eliminated the opportunity for beneficiaries to reconcile non-compliance after a first violation of work requirements before losing

¹¹See OFA data Table 6b

¹²Children are not automatically converted to child-only cases, as a non-sanctioned beneficiary would need to apply and enroll in TANF to head this case. In our data, approximately 10 percent of children exposed to a work sanction *ever appear* associated with another TANF case between 2009-2019.

¹³See Appendix C for details on how beneficiaries are notified of sanctions, deferral reasons, SNAP General Work Requirements and reasons workers may be exempt.

benefits.¹⁴ Upon a second violation of work requirements, sanction duration increased from three to six months, and from one year to a lifetime ban upon their third violation. Concurrently, Michigan reduced their state time limit from 60 to 48 months and removed the hardship-exemption.¹⁵ Finally, the legislation decreased the benefit reduction rate applied to labor earnings, which meant that beneficiaries could earn more while remaining eligible for the program. Nonetheless, in Appendix D we show that less than 1 percent of our analysis sample reports earnings that would place them on the benefit phase out region, either before or after the reform, indicating limited impact of this reform aspect for our sample.

Table 1: October 2011 Policy Changes

Policy changed	Pre-Oct 2011 Policy	Post-Oct 2011 Policy
1st case sanction	Conciliation process, if fails 3 month closure	No conciliation process, 3 month closure
2nd case sanction	No conciliation process, 3 month closure	No conciliation process, 6 month closure
3rd case sanction	No conciliation process, 12 month closure	No conciliation process, lifetime closure
Time limits	60 months, some exemptions	48 months, no exemptions
Benefit reduction rate	80%	50%

2.3 Hypothetical responses to sanctions

How might TANF participants respond to current and future work sanctions? Prior to sanctioning, beneficiaries enrolled in TANF meet work requirements through work, training, service or job search. Some workers will face greater barriers to work or experience more disutility from work. For example, because they care for young children without reliable childcare, or because they live far away from their job or benefit office. Given these constraints, these groups will be more likely to violate work requirements and face sanctions. Nevertheless, even if workers exert maximum work effort and resolve barriers, they may still violate requirements if they fail to report employment changes or misunderstand complex TANF rules.

While sanctioned, beneficiaries experience a large negative income shock. In response, workers in the household may fill resource gaps by increasing labor supply or household enrollment in safety net programs that provide liquidity, such as SNAP. However, if beneficiaries are not able to offset lost benefit income, this net income loss could increase barriers to employment and compliance. For example, by reducing access to transportation, childcare, or basic necessities, fewer

¹⁴Prior to the reform, case beneficiaries had an opportunity to meet with a caseworker in-person within 10 business days of their first work sanction and modify their self-sufficiency plan and maintain benefit access. In our data, we either do not observe first sanctions that were avoided through reconciliation, or next to no cases were able to avoid penalties in this way.

¹⁵See [Al-Chanati and Husted \(2021\)](#) for analysis of these aspects of the 2011 reform.

financial resources as a result of work sanctions could translate to lower labor force attachment. It remains an empirical question which of these factors dominates.

Once sanctions expire, beneficiaries choose whether to re-apply for benefits. Some workers may have increased labor supply while sanctioned such that they are no longer eligible for TANF. Those that remain eligible will need to weigh expected benefits with the risk of future sanctions, given expectations about being able to meet work requirements moving forwards. When sanctions increase in severity with each subsequent violation of work requirements, those that return to TANF will increasingly be those expecting higher benefit amounts.

When policy reform increases sanction duration, the financial risks of violating work requirements increase. To the extent that TANF beneficiaries are able to control compliance, the reform should incentivize greater work effort and reduce the number of sanctions that take place on average. However, if participants are already exerting maximum effort or have slim margins of adjustment, they may not be able to fully control whether they violate requirements, regardless of penalty length. If we observe little change to the number of work sanctions after the reform, this would suggest that TANF beneficiaries have less control over compliance.

Conditional on being sanctioning, the reform increases the amount of foregone benefit income due to sanctioning. On one hand, a larger income shock would strengthen incentives to offset lost benefits; on the other hand, losing access to a core financial resource for more time may only increase budgetary shortfalls to purchase essentials that facilitate work (e.g. gas, bus fare, meals, childcare). By comparing responses to losing three months versus six months of benefit income due to sanctioning, we learn about the extent to which TANF beneficiaries are responsive to income shocks of varying magnitude. If increasing sanction duration results in lower labor force participation, we can further disentangle whether responses are driven by decreasing rates of job-finding, or increasing job-exit.

3 Administrative Data

We use administrative data from the Michigan Department of Health and Human Services (MDHHS) that covers the universe of households enrolled in TANF between 2009 and 2019. With unique TANF assistance unit and person-level identifiers, we can track individual family members across TANF cases and over time. For each month that a person is enrolled in TANF, we observe their case grant amounts, federal and state TANF time limit counts, work requirement or deferral status, and rich demographics including race, ethnicity, age, gender and census tract of residence. In addition, we observe all applications to and exits from TANF, including detailed reasons that a case was denied enrollment or removed from the program. As such, we can precisely identify each violation of work requirements and track the number of months that TANF benefits were withheld in our data.

We link these detailed TANF records to administrative SNAP enrollment, Medicaid enrollment

and earnings data.¹⁶ First, if a person was enrolled in TANF for at least one month between 2009 and 2019, we observe monthly enrollment in other social safety net programs administered by MDHHS for the full time period, including SNAP and Medicaid. Because our program enrollment data is unique at the person level, we can track changes in safety net access when household members transition TANF cases over time. Second, we link individuals to their Unemployment Insurance quarterly earnings records beginning in 2009 through three years after their final exit from TANF or through December 2018, whichever comes first.¹⁷ Using these two sources of administrative data, we construct individual and case-level measures of safety net attachment and labor supply.

While these data provide a rich empirical setting to study responses to work sanctions, we do not observe exact SNAP grant amounts, or program eligibility if not enrolled. As described in Appendix B, we use the SNAP benefit formula to approximate SNAP benefits, based on observed household size and one-third of observed quarterly earnings. Similarly, we infer eligibility for TANF and SNAP when not enrolled with eligibility formulas, one-third of observed quarterly earnings, and last observed program-specific case size. We construct a measure of total household financial resources by summing together observed TANF benefits, imputed SNAP benefits, and observed quarterly earnings.

To estimate effects of increasing sanction duration in 2011, we restrict our sample to TANF beneficiaries that were subject to work requirements between October 2009 and October 2013, spanning two years on either side of the reform to account for differential selection into TANF depending on time of the year. This restriction has the additional advantage of removing years affected by Michigan’s Medicaid expansion in April 2014. Next, we abstract from other margins of the 2011 reform by removing any case ever subject to a hardship exemption, as well as those whose work sanctions occurred when any case member had more than 48 months of state TANF use or 60 months of federal TANF use.

Using information on the number of months that TANF benefits were withheld and the chronological ordering of TANF exits, we identify each time a case was sanctioned for violating work requirements. After collapsing to the beneficiary-month level, our final analysis sample covers roughly 37,000 beneficiaries sanctioned between October 2009 and October 2013, with data starting in January 2009 through three years after a beneficiary’s final exit from TANF.

3.1 Descriptive Statistics

Table 2 compares economic and demographic characteristics of TANF beneficiaries while enrolled in TANF between October 2009 and October 2013. Panel A compares the average demo-

¹⁶See Appendix E for details on data components, coverage, cleaning and linkage.

¹⁷If they first enroll in TANF after 2009, earnings data begins upon enrollment. The average beneficiary has 25 quarters of populated UI records in our analysis sample, ranging from 14 to 40 quarters depending on the length and number of TANF spells. We deflate earnings to be comparable in 2015 dollars using the quarterly Consumer Price Index retrieved from the Federal Reserve Bank of St. Louis’ FRED database. Dollar values are winsorized at the 99th percentile. These data do not include information about types of jobs, employers or industries.

graphic characteristics of those that are never sanctioned (column 1), to those with one sanction (column 2) or two sanctions (column 3) during this time. We see that, relative to beneficiaries that never violate work requirements, sanctioned beneficiaries are more likely to identify as Black non-Hispanic, single mothers, be younger in age, and care for younger children.¹⁸ Those with two work sanctions are even more likely to exhibit these characteristics, relative to those with only one work sanction.

Table 2: Characteristics of TANF Beneficiaries enrolled October 2009-2013

	(1) No sanctions	(2) Only 1 sanction	(3) 2 sanctions
A. Demographics			
White, Non-Hispanic	0.44	0.40	0.36
Black, Non-Hispanic	0.47	0.52	0.55
Female	0.89	0.93	0.96
Married or partnered	0.15	0.12	0.09
Age of beneficiary	29.7	26.8	25.3
Number of children	1.82	1.77	1.86
Age of youngest child	4.15	3.26	2.69
B. Program receipt and labor supply			
# TANF case members	2.84	2.75	2.81
Avg. TANF Spell Length	17.8	14.2	12.7
Avg. TANF Grant	394	424	439
Enrolled in SNAP	0.95	0.95	0.94
Enrolled in Medicaid	0.95	0.95	0.95
Quarterly Employment	0.41	0.33	0.28
Quarterly Earnings	1059	592	407
# Unique Beneficiaries	74,142	27,537	9,466

Notes: Statistics are computed on sample of TANF beneficiaries during months of active TANF enrollment between October 2009-October 2013. We drop those exposed to hardship exemptions or with time limit counters above state and Federal cutoff thresholds. We compare those with no work sanctions to those whose two sanctions took place between October 2009 and October 2013.

Panel B compares average program participation and labor supply measures while enrolled in TANF. We see that sanctioned groups have shorter TANF spells, higher TANF grants, but relatively similar levels of SNAP and Medicaid enrollment. However, being sanctioned is correlated with lower quarterly labor force participation and earnings. This aligns with the fact that sanctioned workers experience frictions that lead to violating work-requirements; however, demographic differences may also underlie this pattern. Because sanctioned workers are younger and more likely to be single mothers, they may have less labor market experience and more care giving demands relative to older or partnered parents. Moreover, while all beneficiaries have children, those subject to work sanctions have more and younger children, which likely translates to requiring more intensive childcare.

¹⁸Prior research documents that Black non-Hispanic individuals are more likely to be sanctioned by case-workers (Schram et al., 2009; Kalil et al., 2002), and research in other social service contexts finds that Black non-Hispanic groups are penalized at disparate rates. See (Baron et al., 2024) for evidence on foster care placement, and (Arnold et al., 2022) for evidence on bail decisions.

These descriptive statistics highlight that sanctioned beneficiaries differ in ways that likely make supplying labor and navigating complicated program requirements more challenging. To quantify the effects of sanctions on longer term economic security, comparisons between groups that are sanctioned and groups that are never sanctioned will be biased by these differences. Instead, we leverage variation in sanction timing, which allows us to make comparisons between cases subject to the same number of sanctions. Because our policy reform of interest increased the severity of second or greater sanctions, we will next focus on characteristics of beneficiaries that are sanctioned two times, with a second sanction taking place either before or after the reform.

Table A.3 compares characteristics of beneficiaries whose second sanction took place before or after October 2011 for months when they are enrolled in TANF between October 2009-October 2013. We see that average characteristics differ for these groups, as those sanctioned after the reform are slightly older on average, have slightly older children, are more likely to identify as Black non-Hispanic, and have higher measures of formal labor supply.¹⁹ As these observable characteristics may be correlated with program enrollment and labor supply, comparisons of trajectories surrounding second sanctions before and after the reform may still be biased by changing composition. We describe steps to address this source of bias in the following section.

4 Estimation Strategy

We first quantify how program participation and labor supply evolve surrounding work sanctions. To do so, we estimate event study models that regress outcomes Y_{it} on indicators $\mathbb{I}[t = j]$ for time relative to a work sanction month ($t = 0$).

$$Y_{it} = \alpha + \sum_{j \neq 0} \theta_j \mathbb{I}[t = j] + \gamma_t + X_i + \epsilon_{it} \quad (1)$$

For monthly outcomes, t ranges from six months before to 24 months after a sanction, and for quarterly outcomes, t ranges from four quarters before to eight quarters after. Our main specification includes month and year fixed effects (γ_t) to absorb variation in outcomes attributable to seasonal or cyclical patterns, such as recovery from the Great Recession, and clusters standard errors at the beneficiary level, to account for within-person residual correlation. While our time fixed effects absorb some changes in cohort characteristics over time, we include control variables for pre-sanction characteristics that may be correlated with outcomes of interest to absorb remaining confounding variation.²⁰ The θ_t coefficients thus capture the average difference between an

¹⁹See Figure A.2 for plots of average beneficiary characteristics in the month prior to a second sanction, by sanction timing relative to the reform. We see that beneficiary age and age of youngest child discretely increase at the time of reform, while racial composition and quarterly employment increase monotonically through this period.

²⁰These characteristics are measured in the period prior to sanctioning. They include categorical variables for beneficiary racial/ethnic identity (White non-Hispanic, Black non-Hispanic, and other), number of children, beneficiary age, age of youngest child, number of TANF case members, number of SNAP case members, number of Federal/State TANF months remaining of lifetime limit, and number of months in current TANF spell; indicators if married/partnered, if female, or if demographic information is missing; continuous variables for the months between a 1st and 2nd sanction,

outcome in period t and the month that a sanction is imposed, $t = 0$. Because sanctions take place at varying times during a given quarter, we set the baseline category for quarterly outcomes to the quarter prior to sanctioning, $t = -1$.

To identify causal effects of increased sanction length, we compare trajectories surrounding second sanctions that result in a six-month penalty relative to a 3 month penalty in a difference-in-differences framework. Specification 2 builds upon the first specification by fully interacting terms with an indicator for whether the sanction occurred after the reform $\mathbb{I}[Post]$.²¹ Under the assumption that post-reform sanction trajectories would evolve in parallel with pre-reform sanction trajectories, absent the increase in sanction length, β_t captures the causal effect of increasing second sanction penalties.

$$Y_{it} = \alpha + \mu_1 \mathbb{I}[Post] + \sum_{j \neq 0} \theta_j \mathbb{I}[t = j] + \sum_{j \neq 0} \beta_j \mathbb{I}[Post] \mathbb{I}[t = j] + \mathbb{I}[Post] \gamma_t + \mathbb{I}[Post] X_i + \epsilon_{it} \quad (2)$$

This parallel-trends assumption would be violated if beneficiaries sanctioned after the reform respond differently to work sanctions, regardless of their length. For example, if this group faced larger barriers to work or higher program compliance costs that affect safety net attachment and work choices. As shown in Table A.3 and Figure A.2, those sanctioned after the reform are significantly more likely to identify as Black non-Hispanic, are more likely to be single parents, and have more children. To the extent that these factors drive differential responses to work sanctions, our estimates will be biased by treatment effect heterogeneity. To address this potential threat, we re-weight our sample so that beneficiaries with second sanctions after the reform have the same average observable characteristics as those with second sanctions before the reform (DiNardo, 2002). We construct these weights with a sample of all beneficiaries that have two work sanctions and regress an indicator for post-reform second sanction on a vector of observable characteristics measured in the period prior to sanctioning. We use the estimated coefficients to generate propensity scores (\hat{p}) and apply inverse probability weights as follows:

$$\omega_i = \begin{cases} \frac{(1-\hat{p}_i)}{\hat{p}_i}, & \text{if } \mathbb{I}[Post]_i = 1. \\ 1, & \text{otherwise.} \end{cases} \quad (3)$$

In Table A.4, we compare before-reform and after reform average characteristics, both with and without our propensity score weights. Our weights mitigate much of the observable imbalance. In in Figure A.3, we scale these differences by each characteristic's before-reform average to

and the average proportion of case members enrolled in SNAP and Medicaid; and interaction terms between race, number of children, beneficiary age, and age of youngest child.

²¹In Figure A.15, we show that our main results are robust across a variety of specification choices: with only time series fixed effects, with time series fixed effects and propensity score weights, and with individual fixed effects. We also show robustness to a version of our main specification that restricts to second sanctions whose first work sanction took place prior to the reform.

approximate effect sizes, and show that remaining differences are very small in magnitude.²² In combination with time series fixed effects and covariates, this approach delivers estimates that are statistically indistinguishable from zero prior to sanctioning (no anticipation) and isolates variation attributable to increasing severity of penalties.

Nonetheless, unobservable differences not captured by this weighting strategy may still bias our estimates. For example, if our reform of interest coincided with a larger shift in how caseworkers enforce policy, which may have induced discrete changes in the proportion of TANF beneficiaries subject to work sanctions, or the average characteristics of sanctioned beneficiaries. When we compare the proportion of beneficiaries subject to work requirements that receive a first or second work sanction in each month surrounding the policy reform (Figure A.1), as well as their average characteristics (Figure A.2), we can statistically reject that a discrete change takes place at the time of the policy change. This suggests that the reform was not associated with an immediate drop in sanctioning likelihood or type of person sanctioned, either due to caseworker discretion or worker behavior.²³

Last of all, it may be the case that those sanctioned after the reform respond differently to work sanctions, regardless of their length, not due individual traits, but as a result of changing secular and cyclical conditions of the economy. Given that we study a reform taking place during the recovery from the Great Recession, it is likely that those sanctioned after the reform (i.e. between October 2011 and October 2013) faced a stronger labor market than those sanctioned before the reform (i.e. between October 2009 and September 2011). This may have two important implications: first, because jobs might be more available, those that end up being sanctioned after the reform might be differently selected in terms of search effort or productivity. To address this concern, we show that our main difference-in-differences results are robust to the inclusion of individual fixed effects (Figure A.15), which should absorb additional treatment effect heterogeneity due to these sources of unobservable variation. A second concern may be that, because the labor market was stronger after the reform, individuals were able to increase labor supply more easily after their work sanctions, which would bias our employment estimates upwards.

To assess this threat, we apply caution and implement an alternative triple-difference specification, including a third control group of those sanctioned only once before relative to after the policy change. Regardless of sanction timing, those with a first work sanction were subject to a three-month penalty, but they would have been exposed to the same economic conditions as those sanctioned for the second time. However, because future second and third sanction penalties were more severe after the reform, those sanctioned only once may also change their behavior in anticipation of future sanctions; as such, by including this additional control group, we plausibly

²²Because our propensity score weights are estimates on a finite sample, they may introduce additional random error in our estimates and bias standard errors (Freedman and Berk, 2009). Bootstrapping is in progress.

²³Beneficiaries may still have changed behavior in anticipation of harsher penalties to remain in compliance with work requirements for longer while enrolled in TANF, or waiting longer to return to TANF after a sanction ends. Duration analysis of time to sanction and time to return events, before versus after the reform, is in progress.

remove some variation due to changing economic conditions, at the expense of removing some of the behavioral response to longer future work sanctions.

4.1 Triple difference specification

We estimate the triple difference model on a pooled sample of data surrounding second work sanctions, as well as surrounding first work sanctions among beneficiaries that are only ever sanctioned once. We first directly assess how trajectories surrounding first sanctions evolved depending on whether they take place before or after the reform by estimating a difference-in-differences as described in Specification 2. Then, we difference out the response surrounding first sanctions from the response surrounding second sanctions as follows:

$$\begin{aligned}
Y_{it} = & \alpha + \mu_1 \mathbb{I}[Post] + \mu_2 \mathbb{I}[2nd] + \mu_3 \mathbb{I}[2nd] \mathbb{I}[Post] \\
& + \sum_{j \neq 0} \theta_t \mathbb{I}[t = j] + \sum_{j \neq 0} \kappa_t \mathbb{I}[2nd] \mathbb{I}[t = j] + \sum_{j \neq 0} \Gamma_t \mathbb{I}[Post] \mathbb{I}[t = j] \\
& + \sum_{j \neq 0} \beta_t \mathbb{I}[2nd] \mathbb{I}[Post] \mathbb{I}[t = j] + \mathbb{I}[2nd] \# \mathbb{I}[Post] \# X_i + \mathbb{I}[2nd] \# \mathbb{I}[Post] \# \gamma_t + \epsilon_{it}
\end{aligned} \tag{4}$$

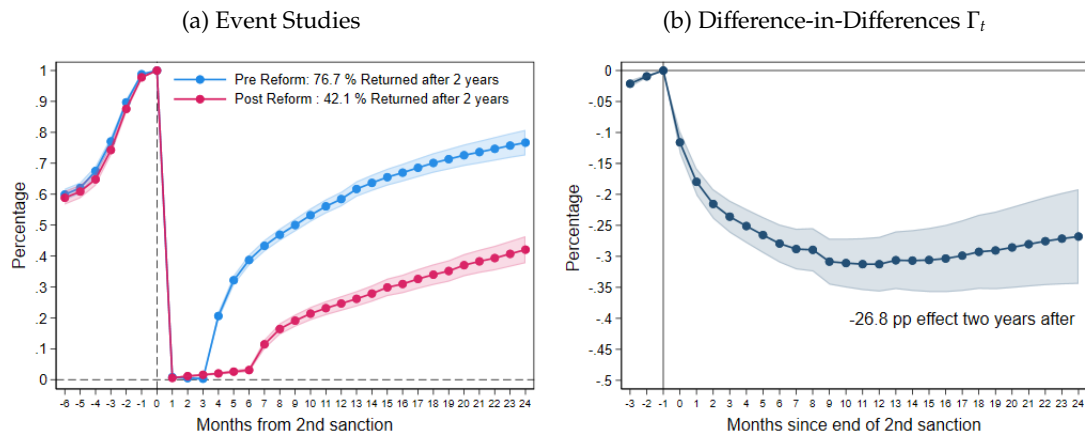
Specification 4 adds and fully interacts an indicator for whether a sanction was a second sanction ($\mathbb{I}[2nd]$) to specification 2. The coefficients θ_t now estimate average outcomes surrounding first work sanctions prior to the reform; $\theta_t + \kappa_t$ for second sanctions prior to the reform; $\theta_t + \Gamma_t$ for first sanctions after the reform; and $\theta_t + \kappa_t + \Gamma_t + \beta_t$ for second sanctions after the reform. To adjust for any treatment effect heterogeneity, we apply our propensity score weighting strategy to first and second work sanction groups and include pre-sanction covariates. Our coefficient of interest, β_t , captures the additional before-after reform difference in average outcomes surrounding second sanctions, net of the before-after reform difference in average outcomes surrounding first sanctions. This estimate can be interpreted causally if we assume that these differences would have evolved in parallel for those subject to first or second sanctions, if not for the reform that directly increased second sanction duration.

In sum, our main difference-in-differences models are propensity score-weighted and include controls for pre-sanction observable characteristics and time-series fixed effects. We show that this strategy yields statistically insignificant pre-trends and is robust to a variety of specifications in Figure A.15. While our triple-difference specification does not qualitatively change our main findings, we discuss the results below to contextualize the magnitude of additional sources of variation. In particular, because first sanction beneficiaries may have anticipated future harsher penalties, i.e. a lifetime ban after a third violation of work requirements, the triple-difference plausibly isolates variation in safety net attachment and labor supply due to an additional three months without access to TANF.

5 Beneficiary Responses

When beneficiaries are sanctioned for the second time, they are removed from TANF for three months prior to the reform and six months after the reform. Once a sanction ends, they can decide whether to re-apply for TANF. In Figure 1, we plot estimates of the proportion of beneficiaries that have returned to TANF surrounding a second sanction.²⁴

Figure 1: % of Beneficiaries that return to TANF



Notes: Figure plots estimates from equation 1 in 1a and equation 2 in the 1b. Y-axis units are percentage points and x-axis plots months relative to the month of a second work sanction. Outcome is equal to 1 if a beneficiary has returned to TANF by that time relative to sanctioning. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

Looking first at coefficients estimated in the six months leading up to a second work sanction, panel 1a highlights that the reform was not associated with differential trends in TANF enrollment prior to sanctioning. We next see that sanctions have a clear and binding effect on TANF enrollment: 100 % of workers enrolled in the month of a work sanction lose access to TANF in the following month. Beneficiaries with sanctions prior to the reform stay dis-enrolled for three months, while those sanctioned after the reform are dis-enrolled for six months.²⁵ After a sanction ends, beneficiaries begin to return to TANF, but those subject to longer penalties return at much slower rates. Two years after sanctioning, 77% of beneficiaries subject to three month penalties have re-enrolled in TANF, while only 42% of those subject to six month penalties have. To quantify differences in reattachment since sanction expiration, we re-center event timing in panel 1b so that 0 refers to the month that a sanction ends. We see that the reform decreased TANF re-attachment after two years by 26.8 percentage points, or 35% of the pre-reform rate.

In Figure A.5, we compare difference-in-differences coefficients from equation 2 for those

²⁴Appendix Figure A.4 plots average monthly enrollment in TANF. Because TANF spells often only span a couple of months, monthly enrollment figure obscures cumulative reattachment to TANF.

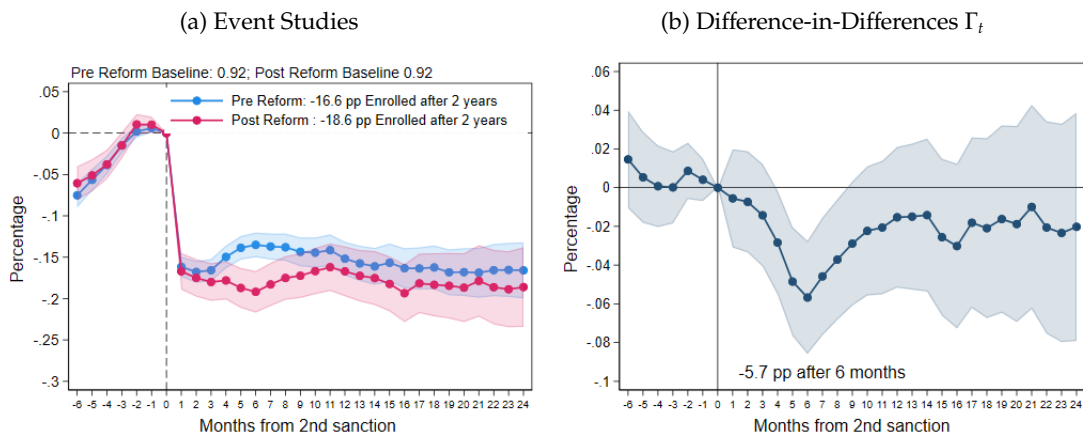
²⁵Of the 4,834 beneficiaries in our analysis sample with second sanctions after the reform, only 38 of them (0.8 percent) appear enrolled in TANF prior to the 6 month sanction expiration.

with only one sanction relative to those with second sanction, before versus after the reform, alongside plots of coefficients from 4. Panel A.5a shows that beneficiaries sanctioned for the first time after the reform were around 11.6 percentage points less likely to have ever returned to TANF two years after their sanction, relative to those receiving their first sanction before the reform. When we adjust for this effect in our triple difference model, we find that longer second sanction duration alone reduced the probability beneficiaries returned to TANF after 2 years by 20.6 percentage points in A.5b. This implies that 77% of the policy's effect on TANF re-attachment can be attributed to increasing duration, rather than responses to changing economic conditions or anticipation of future penalties.

5.1 Safety Net Enrollment

How did this decreased attachment to TANF impact enrollment in other safety net programs? In Figure 2, we compare the proportion of workers enrolled in SNAP each month. In panel 2a, we see that around 15 percent of workers lose access to SNAP immediately following their work sanction, regardless of when this sanction takes place. These workers either did not meet a good cause exemption or did not complete the process to file for this exemption with their case worker.

Figure 2: SNAP Enrollment of Beneficiaries



Notes: Figure plots estimates from equation 1 in 2a and equation 2 in the 2b. Y-axis units are percentage points and x-axis plots months relative to the month of a second work sanction. Outcome is SNAP enrollment of beneficiaries in each month. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

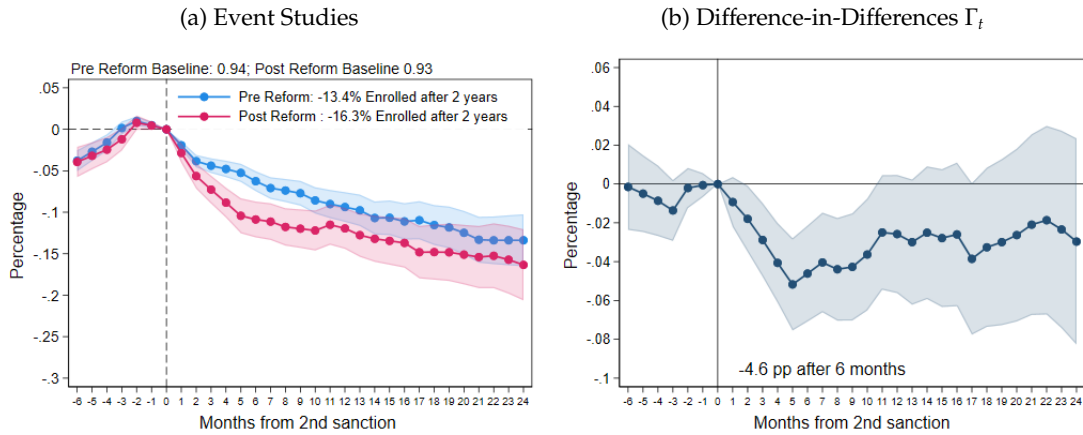
Average enrollment declines during the sanctioned months, as sanctioned cases that initially maintained SNAP enrollment fail to re-certify eligibility. Because these individuals are removed from TANF during this time, they have lost categorical eligibility for SNAP. This means that if they need to re-certify SNAP eligibility during their work sanction, they must verify income and asset eligibility with MDHHS.²⁶ Because verification requires documentation and additional contact

²⁶See (BAM 210: REDETERMINATION/EX PARTE REVIEW, 2024) for a description of this process.

with caseworkers, these additional administrative burdens can lead to decreased likelihood that eligible individuals successfully re-certify.

The SNAP enrollment of beneficiaries sanctioned after the reform continues to decline during the additional three months of work sanction, while a portion of those sanctioned prior to the reform return to the SNAP program. This suggests that increased re-certification burdens while removed from TANF do indeed bind for some portion of sanctioned beneficiaries. As a result, our difference-in-differences estimates show in panel 2b that beneficiaries sanctioned after the reform are 5.7 percentage points (6% effect size) less likely to be enrolled in SNAP six months after being sanctioned, relative to those sanctioned before the reform. Enrollment does not return to baseline once sanctions ends and beneficiaries can return to SNAP. Rather, SNAP enrollment remains lower for the following two years, representing a roughly 20% decrease in enrollment compared to the month of sanctioning.

Figure 3: Medicaid Enrollment of Beneficiaries



Notes: Figure plots estimates from equation 1 in 3a and equation 2 in the 3b. Y-axis units are percentage points and x-axis plots months relative to the month of a second work sanction. Outcome is Medicaid enrollment of beneficiaries in each month. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

Turning to Medicaid, Figure 3a shows that Medicaid enrollment declines steadily, rather than discretely, after sanctioning. This makes sense given that there is no mechanical link between TANF sanctioning and Medicaid. Instead, Medicaid enrollment falls off gradually during sanctioned months, likely due to failure to re-certify eligibility. Three additional sanction months translates to a 4.6 percentage points (5% effect size) reduction in proportion of beneficiaries enrolled in Medicaid 6 months after sanctioning. Enrollment continues to decline after a sanction ends. Two years after a harsher sanction, workers are around 16 percentage points less likely to be enrolled in Medicaid, 17% lower than in the month of sanctioning. Taken together, these safety net findings reveal that sanctions – regardless of whether they span 3 or 6 months – result in persistent declines in enrollment of core assistance programs. Increasing sanction duration serves to exacerbate

enrollment gaps while removed from TANF, but those that lose access during this time return to SNAP and Medicaid once sanctions end on average.

We show in Figures A.6 and A.7 that including the third control group of those with only one work sanction does not substantively change these results. Our triple difference model finds that increasing severity at the second sanction margin led to a larger 6.7 percentage point decline in SNAP enrollment (A.6b) and a 4.6 percentage point decline in Medicaid enrollment (A.7b) 6 months after a harsher sanction. This provides additional evidence that the enrollment declines we observe during active sanction months are due to missed re-certification and increased burden without categorical eligibility, rather than responses to broader economic conditions and lower value of the TANF program.

5.2 Labor Supply

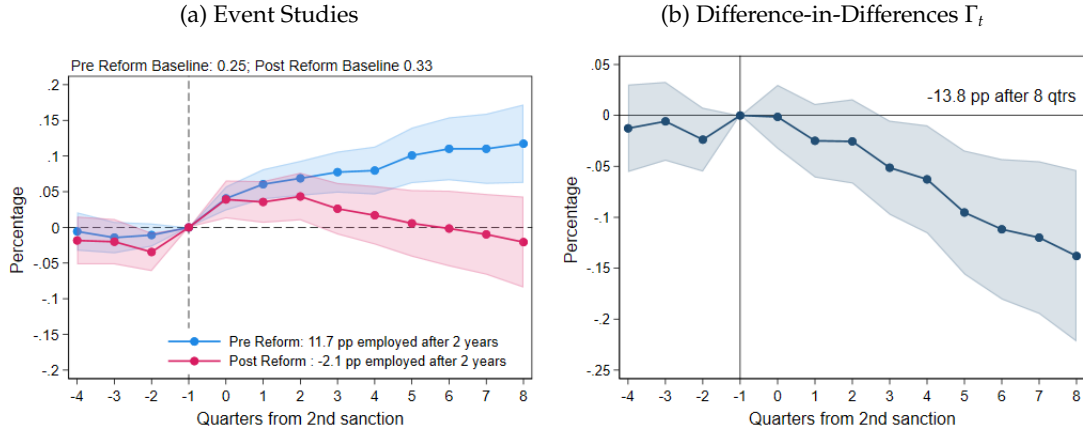
Next, we assess whether decreased program participation was offset by increased labor market earnings. Because our administrative employment and earnings outcomes are at the quarterly level, while sanctions are administered each month, we consider effects relative to the quarter before sanctioning.²⁷ Coefficients one quarter after a harsher sanction capture effects when all sanctions are in effect, and coefficients three quarters after a harsher sanction capture effects once all sanctions have expired.

Figure 4 compares quarterly employment of sanctioned workers, relative to the quarter before their work sanction. We see that employment remains relatively stable in the year leading up to a work sanction, hovering between 0 and 5 percentage points below employment in the quarter prior to sanctioning. During the quarter of a work sanction, when beneficiaries are most likely all actively enrolled in TANF and subject to work requirements, employment rises by around 5 percentage points. As beneficiaries are sanctioned at varying times in quarter 0, sanctions remain in effect for some until quarter 2 if sanctioned before the reform, and until quarter 3 if sanctioned after. Employment rates remain roughly stable throughout quarters 1 and 2, indicating that the average sanctioned beneficiary does not meaningfully increase extensive margin labor to replace lost benefit income during their sanction.

Beginning three quarters after sanctioning, when all post-reform sanctions have expired, we see that employment of those subject to six-month penalties begins to decline, while employment of those subject to three-month penalties steadily increases. Two years after sanctioning, the former group is 2.1 percentage points less likely (6.4% reduction) to be formally employed relative to the quarter prior to their sanction, whereas the latter group is 11.7 percentage points more likely (47% increase) to be formally employed. As a result, the difference-in-differences estimates in

²⁷Estimates from quarters 0, 1 and 2 thus combine effects of those whose sanctions took place at varying times. For example, post-reform sanctions that take place in the first month of quarter 0 will end in the first month of quarter 2, but sanctions that took place in the last month of quarter 0 will only end in the last month of quarter 2. Thus, responses while being sanctioned are captured by coefficients on quarters 0 and 1 for the former group, but quarters 1 and 2 for the latter group.

Figure 4: Quarterly Employment of Beneficiaries



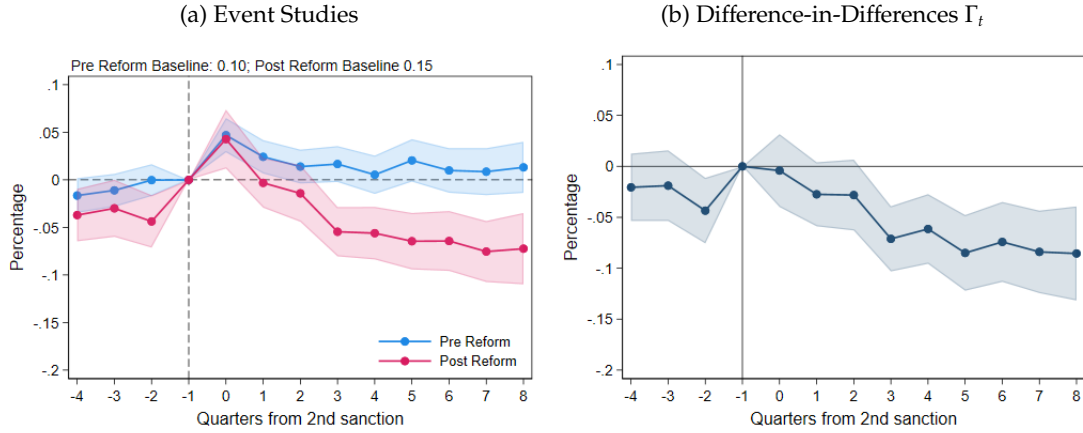
Notes: Figure plots estimates from equation 1 in 4a and equation 2 in the 4b. Y-axis units are percentage points and x-axis plots quarters relative to quarter of a second work sanction. Outcome is an indicator variable equal to one if a beneficiary has positive quarterly earnings. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

panel 4b indicate that increasing the length of a sanction caused a 13.8 percentage point reduction in the probability that beneficiaries were formally employed two years after sanctioning, which represents a 55% decrease in employment relative to the pre-reform baseline quarter.

Of note, we see that the average employment rate in the quarter prior to a pre-reform second work sanction was 25%, relative to 33% average employment in the quarter prior to a post-reform second work sanction. This difference reflects the fact that the macro-economy was improving out of the Great Recession. Fortunately, we see that employment rates before and after the reform trend in parallel for quarters preceding second work sanctions, as is needed for our identifying assumption. When we compare trajectories surrounding first work sanctions, before versus after the reform, the difference-in-differences coefficients in panel A.10a are statistically indistinguishable from zero in all quarters. When we remove this magnitude from our main estimates in the triple-difference specification, we find that the reform led to a smaller and less significant reduction (8.7 percentage points) in formal employment 8 quarters after a second work sanction. This provides additional evidence changing economic conditions are not a meaningful source of upward bias.

In Figure 5, we explore the decline in formal employment by testing effects on the proportion of beneficiaries that flow into employment each quarter. We see that a similar proportion of individuals transition into employment each quarter, regardless of second sanction timing. During the quarter of a work sanction, the job entry rate of both groups increases by around 5 percentage points. However, among those subject to three-month penalties prior to the reform, the proportion transitioning into employment drops in the quarter following a sanction and remains slightly positive, but statistically indistinguishable from zero, for the following quarters. By contrast, among those subject to six month penalties after the reform, this proportion declines sharply throughout

Figure 5: % Transition from Non-employment to Employment



Notes: Figure plots estimates from equation 1 in 5a, A.8a and equation 2 in 5b, ???. Y-axis units are percentage points and x-axis plots quarters relative to quarter of a second work sanction. Outcome is an indicator variable equal to one if a beneficiary was unemployed in the prior quarter, but employed in the current quarter. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

the three quarters following a sanction and remains well below zero moving forwards.²⁸ This implies that the decline in formal employment after harsher sanctions stems from decreasing rates of finding work, rather than increasing rates of losing a job. This might occur if, for instance, the larger negative income shock due to more time without TANF income makes costs of formal job search too high. Or if the decreased likelihood that a sanctioned individuals returns to the TANF program after a harsher second sanction means that formal work is less valuable.

Finally, we quantify how these employment results affect labor earnings in Figure A.9. We see that earnings decrease slightly throughout the year leading up to a work sanction and increase starting in the quarter of a work sanction. Three quarters after a sanction, workers sanctioned both before and after the reform earn around \$300 more than they did the quarter prior to their sanction (panel A.9a), and \$800 conditional on being employed (panel A.9c). After this point, average earnings continue to increase among those subject to 3 month penalties, but trend downward among those subject to 6 month penalties. The difference-in-differences model finds that increased sanction severity was associated with lower earnings, although in many cases we cannot reject a null effect. When we sum together coefficients for quarters 1 through 8, we find that the reform led to a \$796 decrease in average earnings (panel A.9b), or a \$663 decrease in positive earnings (panel A.9d).

In summary, we find that work sanctions are associated with persistent decreases in TANF attachment. Regardless of penalty length, sanctioned beneficiaries decrease enrollment in SNAP and Medicaid, such that incomplete take-up of both programs is around 20 percent larger two years after sanctions. Decreased benefit income is not offset with increased labor market earnings during

²⁸We find no difference in the rate of job exit, as shown in Figure A.8.

work sanctions, and increasing penalties from three to six months decreases formal employment rates after sanctions have ended.

6 Case-member Responses

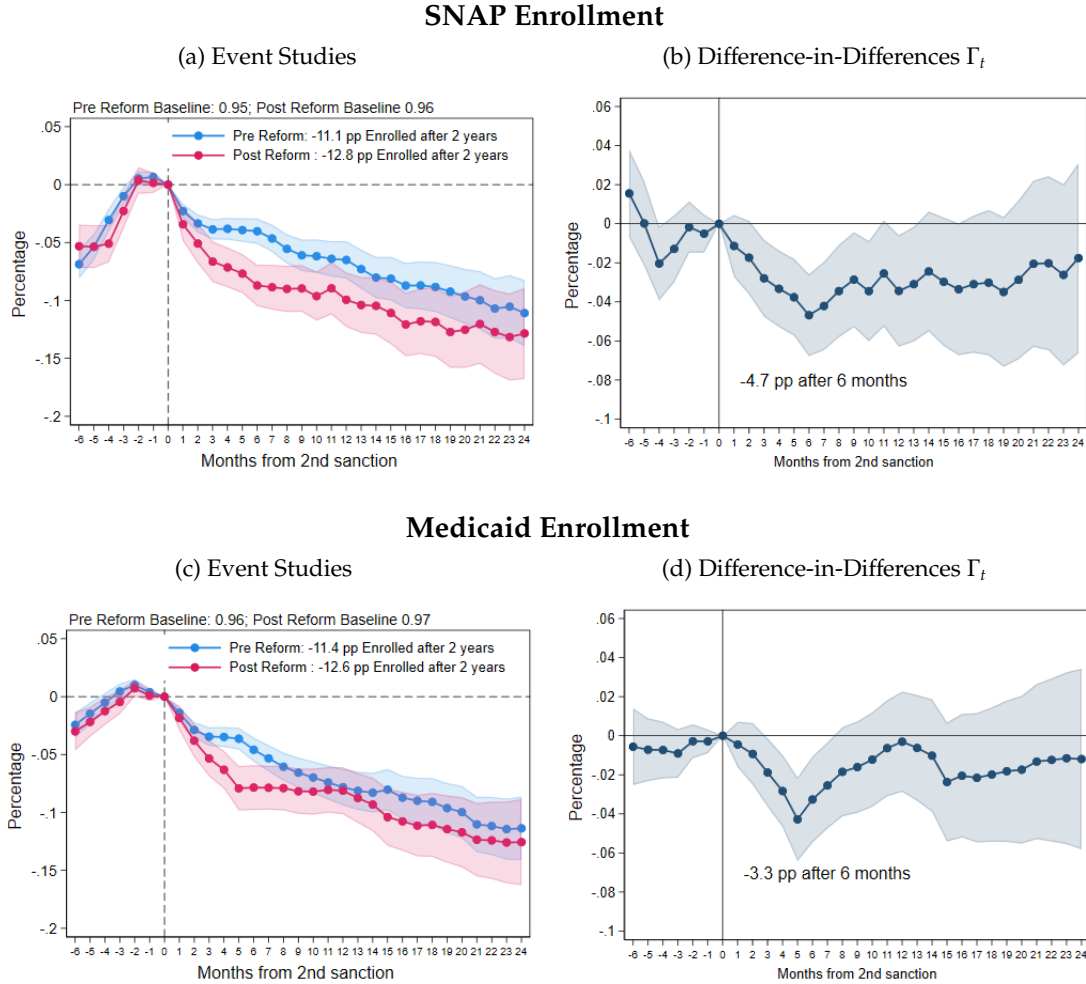
Being sanctioned for work noncompliance likely has implications for members of TANF cases beyond just beneficiaries. In approximately 85 percent of cases, all non-beneficiary case members are children, whose program enrollment depends on an adult complying with re-certification rules and timelines. If sanctioned beneficiaries are responsible for maintaining access of dependents, but do not realize that case members remain eligible during sanctions, SNAP and Medicaid enrollment of children might lapse. This could also happen if a beneficiary attempts to re-certify but does not verify income or assets now that they have lost categorical eligibility. If a non-sanctioned case member or relative is able to apply for TANF and add children to their case, it may be possible for child case-members to maintain program access.

We first test whether case members respond to sanctions by forming new TANF assistance units and applying for benefits without members that violated work requirements. Figure A.11 compares the total TANF benefits associated with all members of a case exposed to sanctions before and after the reform. This measure includes zeros when cases are not enrolled in TANF and thus receiving no benefits; as such, these coefficients can be interpreted as the total amount of TANF dollars distributed to individuals exposed to second work sanctions, relative to average grants during the sanction month. In panel A.11a, we see that both before and after the reform, average TANF benefits drop by around \$450 in the month following a work sanction and remain at this level for the duration of the sanction. After a sanction ends, a portion of cases return to TANF and begin receiving benefit income. Our difference-in-differences estimates in panel A.11b indicate that increasing penalties removed \$282 more TANF dollars from sanctioned families. In panel A.11c, we compare the proportion of cases in which a member receives TANF benefits from a *different* TANF case, in order to capture transitions to alternative non-sanctioned case units. We see that this occurs in less than 1 percent of cases subject to sanctions, highlighting that a negligible number of case transitions occur in response to work sanctions.

Turning to enrollment in other programs, non-sanctioned case members remain eligible for programs during and after work sanctions, but their access still depends on timely re-certification and compliance with SNAP and Medicaid rules. We find that SNAP and Medicaid enrollment among other case members also decline after work sanctions, as shown in Figure 6. As with sanctioned beneficiaries, a gap in enrollment appears during additional sanction months, which our difference-in-differences model quantifies as a 4.7 percentage point decrease in SNAP attachment (panel 6b) and a 3.3 percentage point decrease in Medicaid attachment (panel 6d). While these gaps close once sanctions expire, enrollment in both programs continues to decline. Two years after sanctioning, case members exposed work sanctions, regardless of their duration, are around 12 percentage points less likely to be enrolled in either SNAP or Medicaid (panels 6b, 6c). This

highlight how removing beneficiaries from TANF during sanctions can result in lasting enrollment decreases for those that should be theoretically unaffected.

Figure 6: Safety net enrollment of case members



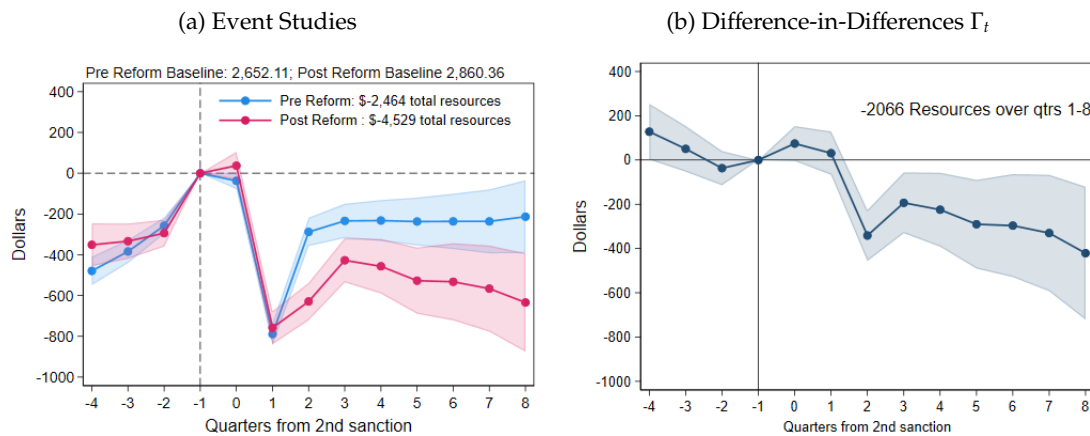
Notes: Figure plots estimates from equation 1 in 6a and equation 2 in 6b. Y-axis units are percentage points and x-axis plots months relative to month of a second work sanction. Outcome is equal to the SNAP enrollment rate (top panels) or Medicaid enrollment rate (bottom panels) of all non-beneficiary case members exposed to the work sanction event. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

Finally, given the size of the negative income shock when TANF benefits are removed during sanctions, we might expect other non-sanctioned workers to respond by increasing labor supply. To test this, we restrict to cases that include more than one working age adult at the time of sanctioning. Figure A.13 compares the employment rate of workers in these cases. While we have limited statistical power due to sample size, we see no evidence of increased employment, suggesting members of cases are not offsetting income losses in this way.

We summarize our findings by adding together total TANF benefits and quarterly earnings

accruing to all case members (beneficiary and non-beneficiaries), with imputed SNAP benefits.²⁹ Figure 7 shows that household resources evolve in parallel from one year prior through the quarter of a work sanction. One quarter after a work sanction, cases have around \$800 fewer resources regardless of sanction duration. This shows that labor supply responses do not offset reduced benefit income from TANF and SNAP while sanctions are in effect. Two quarters after a work sanction, resources of those sanctioned after the reform remain depressed, as cases still exposed to work sanctions have around \$400 fewer resources as a result of the policy change. During subsequent quarters, financial resources of those subject to harsher penalties remain well below those sanctioned before the reform, reflecting the decline in cumulative TANF reattachment and formal employment.

Figure 7: Household Resources (TANF + SNAP + total earnings)



Notes: Figure plots estimates from equation 1 in 7a and equation 2 in 7b. Y-axis units are dollars and x-axis plots quarters relative to quarter of a second work sanction. Outcome is equal to the sum of total TANF and SNAP benefit dollars, as well as all formal labor earnings, associated with all case members exposed to the work sanction event; outcome has been deflated to 2015 dollars. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

Summing together coefficients for quarters 1-8, our difference-in-differences model quantifies that harsher penalties reduced net financial resources by an additional \$2,066 over the two years following a work sanction, which equates to a 84% reduction relative to the resources of those subject to 3 month penalties over this time. Because those subject to first work sanctions were also less likely to return to TANF after the reform, and slightly less likely to be formally employed, our triple-difference specification quantifies a smaller magnitude reduction in financial resources (\$1,107 over quarters 1-8).

²⁹See Figure A.12 for quantification of changes to SNAP benefit amounts, given observed SNAP enrollment. We see that harsher sanctions led to \$183 fewer SNAP dollars for sanctioned case members. We detail how SNAP benefits are imputed in Appendix B.

7 Conclusion

We study the universe of individuals ever enrolled in Michigan’s cash assistance program to quantify economic responses to work sanctions and understand how increasing sanction severity alters behavior. We show that penalties for violating work requirements result in persistent reductions in household resources over time. When beneficiaries are sanctioned, regardless of the penalty length, enrollment in TANF, SNAP and Medicaid is significantly reduced for at least the following two years, and lost benefit income is not offset by increased labor market earnings. Moreover, as workers are often responsible for re-certifying eligibility of household members, we find that work sanctions are associated with decreased safety net attachment of non-sanctioned case members, the majority of whom are children.

When penalty duration increases from three to six months, beneficiaries are much less likely to return to TANF after sanctions end. This enrollment decline further reduces attachment to SNAP and Medicaid for beneficiaries and case members, as more time removed from TANF increases administrative burdens associated with maintaining broader safety net enrollment. In addition, we show that longer work sanctions are associated with decreasing employment over the subsequent two years. We interpret this finding as a result of being less able to afford or less willing to undertake formal job search after a larger amount of benefit resources are foregone. This effect is driven by a decreasing flow into formal employment among sanctioned workers after their penalty ends. Summing together the value of TANF and SNAP benefits accruing to all case members with formal labor supply earnings of all case members, we find that increasing penalty duration from 3 to 6 months resulted in a 84% reduction in household resources over two years following a sanction.

Our findings have important implications for well-being. Persistent declines in take-up of SNAP and Medicaid among workers and their children after could generate meaningful impacts, especially for young children. SNAP enrollment has been shown to decrease household food insecurity and the likelihood of falling behind on housing, utility and medical expenses ([Shaefer and Gutierrez, 2013](#)). Moreover, research finds that access to SNAP while in-utero increases birth-weight, while access during childhood improves later in life outcomes, including human capital, neighborhood quality, life expectancy, and risk of incarceration ([Almond et al., 2011](#); [Hoynes et al., 2016](#); [Bailey et al., 2024](#); [Mueller-Smith et al., 2023](#)). Medicaid enrollment has been causally linked to lower infant mortality, higher birth weight, better later-in-life health, decreased mortality, increased test scores, high school and college completion rates ([Hoynes et al., 2016](#); [Miller et al., 2021](#); [East et al., 2023](#); [Miller and Wherry, 2024](#)). If work sanctions reduce access to these core assistance programs, they may translate to worse outcomes across these myriad dimensions.

In addition, our findings suggest that work sanctions may be a driver of decreased TANF enrollment in past decades ([Parolin, 2021](#)), as many affected workers exit TANF and do not return. Indeed, as sanction policies have become increasingly severe over time, workers on the margin of TANF enrollment are increasingly likely to exit. Our paper suggests that while sanctions

accomplish their goal of decreasing use of welfare, they do so at the cost of greater resource instability, which may have large and lasting effects for family well-being and child development (Hill et al., 2013; Hardy et al., 2019).

More broadly, this study contextualizes how Americans experiencing deep poverty make ends meet. Despite being required to work, members of our study population have very low formal earnings and experience frequent employment transitions and program churn. Our findings reveal that safety net penalties and subsequent spillovers decrease already limited resources and may exacerbate economic insecurity for this group. Moreover, we show that harsher penalties do not increase work effort, but rather lead to deteriorating formal employment. This suggests that resource reductions may increase barriers to employment and decrease perceived returns to work, either because the resources required to supply labor (e.g. transportation or childcare) are no longer affordable or because safety net programs that subsidize earnings are no longer available (Card and Hyslop, 2005). As a result, workers may turn to informal labor markets or criminal activity to support themselves and their families instead (Nightingale and Wandner, 2011; Mueller-Smith et al., 2023). Given the poverty level of families in our study, our findings suggest that reducing penalties in any safety net program has potential to increase economic stability and access to resources for a very vulnerable group.

References

- Al-Chanati, Motaz and Lucas Husted**, “Cutoff From Support: The Effects of Losing Cash Welfare * Most Recent Version,” Working Paper 2021.
- Almond, Douglas, Hilary W. Hoynes, and Diane Whitmore Schanzenbach**, “Inside the War on Poverty: The Impact of Food Stamps on Birth Outcomes,” *The Review of Economics and Statistics*, May 2011, 93 (2), 387–403.
- Arnold, David, Will Dobbie, and Peter Hull**, “Measuring Racial Discrimination in Bail Decisions,” *American Economic Review*, September 2022, 112 (9), 2992–3038.
- Bailey, Martha J, Hilary Hoynes, Maya Rossin-Slater, and Reed Walker**, “Is the Social Safety Net a Long-Term Investment? Large-Scale Evidence From the Food Stamps Program,” *The Review of Economic Studies*, May 2024, 91 (3), 1291–1330.
- BAM 210: REDETERMINATION/EX PARTE REVIEW*
- BAM 210: REDETERMINATION/EX PARTE REVIEW*, Technical Report, State of Michigan Department of Health and Human Services July 2024.
- Baron, E Jason, Joseph J Doyle Jr, Natalia Emanuel, Peter Hull, and Joseph Ryan**, “Discrimination in Multiphase Systems: Evidence from Child Protection*,” *The Quarterly Journal of Economics*, February 2024, p. qjae007.
- Bauer, Lauren and Chloe N. East**, “A primer on SNAP work requirements,” Technical Report, The Hamilton Project, Brookings October 2023.
- Besley, Timothy and Stephen Coate**, “Workfare versus Welfare: Incentive Arguments for Work Requirements in Poverty-Alleviation Programs,” *The American Economic Review*, 1992, 82 (1), 249–261. Publisher: American Economic Association.
- Bitler, Marianne, Jason Cook, and Jonathan Rothbaum**, “Working for Your Bread: The Labor Supply Effects of SNAP †,” *AEA Papers and Proceedings*, 2021, 111, 496–500.
- Bitler, Marianne P., Jonah B. Gelbach, and Hilary W. Hoynes**, “What Mean Impacts Miss: Distributional Effects of Welfare Reform Experiments,” *American Economic Review*, September 2006, 96 (4), 988–1012.
- Blank, Rebecca M.**, “Evaluating Welfare Reform in the United States,” *Journal of Economic Literature*, December 2002, 40 (4), 1105–1166.
- Card, David and Dean R. Hyslop**, “Estimating the Effects of a Time-Limited Earnings Subsidy for Welfare-Leavers,” *Econometrica*, 2005, 73 (6), 1723–1770. _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1468-0262.2005.00637.x>.

- Cook, Jason and Chloe N East**, *"The Effect of Means-Tested Transfers on Work: Evidence from Quasi-Randomly Assigned SNAP Caseworkers,"* May 2023.
- Cook, Jason B. and Chloe N. East**, *"Work Requirements with No Teeth Still Bite: Disenrollment and Labor Supply Effects of SNAP General Work Requirements,"* May 2024.
- Danziger, Sandra K., Sheldon Danziger, Kristin S. Seefeldt, and H. Luke Shaefer**, *"From Welfare to a Work-Based Safety Net: An Incomplete Transition,"* *Journal of Policy Analysis and Management*, 2016, 35 (1), 231–238. _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/pam.21880>.
- Davis, Rosie Phillips and Wendy R. Williams**, *"Bringing psychologists to the fight against deep poverty,"* *The American Psychologist*, 2020, 75 (5), 655–667.
- Deshpande, Manasi and Yue Li**, *"Who Is Screened Out? Application Costs and the Targeting of Disability Programs,"* *American Economic Journal: Economic Policy*, November 2019, 11 (4), 213–248.
- DiNardo, John**, *"Propensity Score Reweighting and Changes in Wage Distributions,"* Working Paper July 2002.
- East, Chloe N., Sarah Miller, Marianne Page, and Laura R. Wherry**, *"Multigenerational Impacts of Childhood Access to the Safety Net: Early Life Exposure to Medicaid and the Next Generation's Health,"* *American Economic Review*, January 2023, 113 (1), 98–135.
- Falk, Justin**, *"The Effects of Work Requirements on the Employment and Income of TANF Participants,"* Working Paper Series, March 2023.
- Fox, Ashley, Wenhui Feng, and Megan Reynolds**, *"The effect of administrative burden on state safety-net participation: Evidence from food assistance, cash assistance, and Medicaid,"* *Public Administration Review*, 2023, 83 (2), 367–384. _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/puar.13497>.
- Freedman, David A. and Richard A. Berk**, *"Weighting Regressions by Propensity Scores,"* in David Collier, Jasjeet S. Sekhon, and Philip B. Stark, eds., *Statistical Models and Causal Inference: A Dialogue with the Social Sciences*, Cambridge: Cambridge University Press, 2009, pp. 279–294.
- Gennetian, Lisa A. and Eldar Shafir**, *"The Persistence of Poverty in the Context of Financial Instability: A Behavioral Perspective,"* *Journal of Policy Analysis and Management*, 2015, 34 (4), 904–936. _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/pam.21854>.
- Gray, Colin, Adam Leive, Elena Prager, Kelsey Pukelis, and Mary Zaki**, *"Employed in a SNAP? The Impact of Work Requirements on Program Participation and Labor Supply,"* *American Economic Journal: Economic Policy*, February 2023, 15 (1), 306–341.
- Hardy, Bradley, Heather D. Hill, and Jennie Romich**, *"Strengthening Social Programs to Promote Economic Stability During Childhood,"* *Social Policy Report*, 2019, 32 (2), 1–36.

- Herd, Pamela, Hilary Hoynes, Jamila Michener, and Donald Moynihan**, “Introduction: Administrative Burden as a Mechanism of Inequality in Policy Implementation,” *RSF: The Russell Sage Foundation Journal of the Social Sciences*, September 2023, 9 (4), 1–30. Publisher: RSF: The Russell Sage Foundation Journal of the Social Sciences.
- Hill, Heather D., Pamela Morris, Lisa A. Gennetian, Sharon Wolf, and Carly Tubbs**, “The Consequences of Income Instability for Children’s Well-Being,” *Child Development Perspectives*, 2013, 7 (2), 85–90. _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/cdep.12018>.
- Hoynes, Hilary, Diane Whitmore Schanzenbach, and Douglas Almond**, “Long-Run Impacts of Childhood Access to the Safety Net,” *American Economic Review*, April 2016, 106 (4), 903–934.
- Kalil, Ariel, Kristin Seefeldt, and Hui chen Wang**, “Sanctions and Material Hardship under TANF,” *Social Service Review*, December 2002, 76, 642–662.
- Kleven, Henrik**, “The EITC and the Extensive Margin: A Reappraisal,” October 2019.
- Kline, Patrick and Melissa Tartari**, “Bounding the Labor Supply Responses to a Randomized Welfare Experiment: A Revealed Preference Approach †,” *American Economic Review*, 2016, 106 (4), 972–1014.
- Ko, Wonsik and Robert A Moffitt**, “Take-up of Social Benefits,” Working Paper 2022.
- Lindhorst, Taryn and Ronald J. Mancoske**, “The Social and Economic Impact of Sanctions and Time Limits on Recipients of Temporary Assistance to Needy Families,” *Journal of sociology and social welfare*, March 2006, 33 (1), 93–114.
- MDHHS**, “BEM 230a: Employment-related activities FAP,” Technical Report, State of Michigan Department of Health and Human Services July 2024.
- , “BEM 230a: Employment-related activities FIP,” Technical Report, State of Michigan Department of Health and Human Services July 2024.
- , “BEM 233 A: Failure to Meet Employment and/or Self-sufficiency-related Requirements:FIP,” Technical Report, State of Michigan Department of Health and Human Services July 2024.
- , “BEM 233 B: Failure to Meet Employment Requirements:FAP,” Technical Report, State of Michigan Department of Health and Human Services July 2024.
- Meyer, Bruce D. and Nikolas Mittag**, “Using Linked Survey and Administrative Data to Better Measure Income: Implications for Poverty, Program Effectiveness, and Holes in the Safety Net,” *American Economic Journal: Applied Economics*, April 2019, 11 (2), 176–204.
- Miller, Sarah and Laura R Wherry**, “The Long-Term Effects of Early Life Medicaid Coverage,” *Journal of Human Resources*, May 2024, 59 (3).

- , **Norman Johnson, and Laura R. Wherry**, “Medicaid and Mortality: New Evidence From Linked Survey and Administrative Data,” *The Quarterly Journal of Economics*, August 2021, 136 (3), 1783–1829.
- Moffitt, Robert A.**, “Chapter 34 Welfare programs and labor supply,” in “*Handbook of Public Economics*,” Vol. 4, Elsevier, January 2002, pp. 2393–2430.
- Mueller-Smith, Michael, James Reeves, Kevin Schnepel, and Caroline Walker**, “*The Direct and Intergenerational Effects of Criminal History-Based Safety Net Bans in the US*,” 2023.
- Nichols, Albert L. and Richard J. Zeckhauser**, “Targeting Transfers through Restrictions on Recipients,” *The American Economic Review*, 1982, 72 (2), 372–377. Publisher: American Economic Association.
- Nightingale, Demetra S. and Stephen A. Wandner**, “*Informal and Nonstandard Employment in the United States*,” Technical Report 20, The Urban Institute August 2011.
- Parolin, Zachary**, “*Decomposing the Decline of Cash Assistance in the United States, 1993 to 2016*,” *Demography*, June 2021, 58 (3), 1119–1141.
- , **Christina J. Cross, and Rourke O’Brien**, “*Administrative Burdens and Economic Insecurity Among Black, Latino, and White Families*,” *RSF: The Russell Sage Foundation Journal of the Social Sciences*, September 2023, 9 (5), 56–75. Publisher: RSF: The Russell Sage Foundation Journal of the Social Sciences.
- Reichman, Nancy E., Julien O. Teitler, and Marah A. Curtis**, “*TANF Sanctioning and Hardship*,” *Social Service Review*, 2005, 79 (2), 215–236. Publisher: The University of Chicago Press.
- Sacarny, Adam, Katherine Baicker, and Amy Finkelstein**, “*Out of the Woodwork: Enrollment Spillovers in the Oregon Health Insurance Experiment*,” *American Economic Journal: Economic Policy*, August 2022, 14 (3), 273–295.
- Schmidt, Lucie, Lara Shore-Sheppard, and Tara Watson**, “*The Impact of Expanding Public Health Insurance on Safety Net Program Participation: Evidence from the ACA Medicaid Expansion*,” Technical Report w26504, National Bureau of Economic Research December 2019.
- , —, and —, “*Safety-Net Program Spillovers and Administrative Burden*,” *National Tax Journal*, March 2024, 77 (1), 199–221. Publisher: The University of Chicago Press.
- Schram, Sanford F., Joe Soss, Richard C. Fording, and Linda Houser**, “*Deciding to Discipline: Race, Choice, and Punishment at the Frontlines of Welfare Reform*,” *American Sociological Review*, June 2009, 74 (3), 398–422. Publisher: SAGE Publications Inc.
- Service, Congressional Research**, “*The Temporary Assistance for Needy Families (TANF) Block Grant: A Legislative History*,” CRS Report R44668 November 2023.

Shaefer, H. Luke and Italo A. Gutierrez, *"The Supplemental Nutrition Assistance Program and Material Hardships Among Low-Income Households with Children,"* *Social Service Review*, December 2013. Publisher: The University of Chicago Press.

Sommers, Benjamin D., Lucy Chen, Robert J. Blendon, E. John Orav, and Arnold M. Epstein, *"Consequences of Work Requirements in Arkansas: Two-Year Impacts on Coverage, Employment, and Affordability of Care,"* *Health affairs (Project Hope)*, September 2020, 39 (9), 1522–1530.

Tach, Laura and Kathryn Edin, *"The Social Safety Net After Welfare Reform: Recent Developments and Consequences for Household Dynamics,"* <https://doi-org.proxy.lib.umich.edu/10.1146/annurev-soc-060116-053300>, July 2017, 43, 541–561. Publisher: Annual Reviews.

Wu, Chi-Fang, *"Severity, timing, and duration of welfare sanctions and the economic well-being of TANF families with children,"* *Children and Youth Services Review*, January 2008, 30 (1), 26–44.

—, **Maria Cancian, and Geoffrey Wallace**, *"The effect of welfare sanctions on TANF exits and employment,"* *Children and Youth Services Review*, January 2014, 36, 1–14.

Wu, Derek and Bruce D Meyer, *"Certification and Recertification in Welfare Programs: What Happens When Automation Goes Wrong?,"* Working Paper 2021.

A Appendix Tables and Figures

Figure A.1: Proportion of TANF caseload with sanctions from October 2009 to October 2013

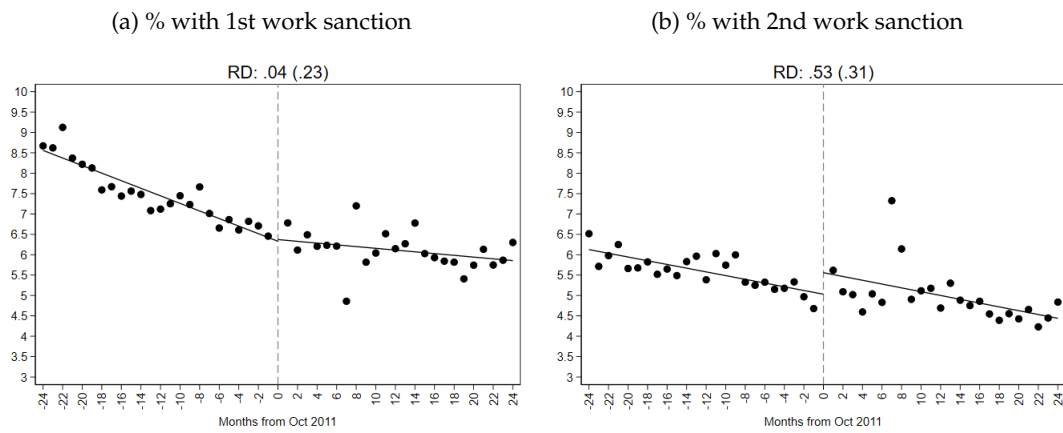


Table A.3: Characteristics of 2nd Sanction Group, by Timing

	(1) Before Reform	(2) After Reform
A. Demographics		
White, Non-Hispanic	0.42	0.36
Black, Non-Hispanic	0.49	0.55
Female	0.95	0.95
Married or partnered	0.10	0.09
Age of beneficiary	25.29	26.43
Number of children	1.93	2.00
Age of youngest child	2.74	2.97
B. Program receipt and labor supply		
# TANF case members	2.88	2.92
Months of TANF Spell	9.36	9.25
TANF Grant	443	438
Enrolled in SNAP	0.93	0.94
Enrolled in Medicaid	0.95	0.95
Quarterly employment	0.29	0.36
Quarterly earnings	382	588
# Unique Beneficiaries	4,016	3,350

Notes: Statistics are computed on sample of TANF beneficiaries that were sanctioned for the second time between October 2009-October 2013. We compare characteristics while enrolled in TANF in our analysis sample time period.

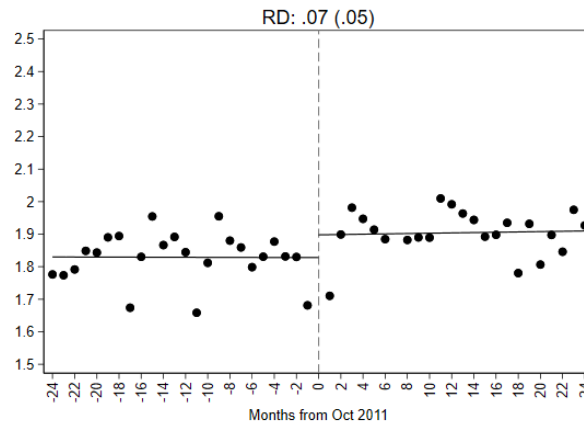
Table A.4: Before-After Reform Average Characteristics, with and without weights

	Un-weighted			Weighted		
	(1) Before	(2) After Δ	(3) T-statistic	(4) Before	(5) After Δ	(6) T-statistic
Female	0.94	-0.00	-0.29	0.94	0.01	0.81
Hispanic	0.06	-0.01	-2.40	0.06	-0.00	-0.03
Black NH	0.43	0.07	6.82	0.45	-0.02	-1.57
White NH	0.46	-0.05	-5.17	0.44	0.01	0.71
Age	25.2	1.49	11.2	25.2	0.49	2.97
Spouse or Partner	0.13	-0.03	-4.47	0.09	0.01	0.82
Youngest kid age	2.86	0.31	4.03	2.92	0.16	1.57
# kids	1.75	0.06	3.38	1.74	0.01	0.57
TANF Case size	2.74	0.05	2.43	2.70	0.10	3.10
TANF spell length	5.06	-0.08	-1.88	5.09	0.06	1.11
Federal TANF use	41.2	-2.32	-8.03	40.87	0.31	0.74
Michigan FIP use	35.85	-4.69	-26.40	35.73	-0.27	-1.36
Months Since 1st	10.37	7.83	39.89	10.39	0.86	4.65

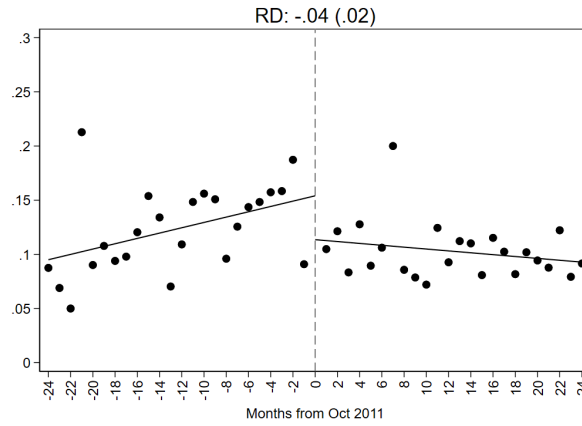
Note: To calculate statistics, we restrict to analysis sample data in the month prior to a second work sanction, and regress each characteristics on an indicator if the sanction takes place after the reform, with and without weights. We show constant terms in columns 1 and 4, the post-reform indicator coefficient in columns 2 and 5, and the coefficient scaled by its standard error in columns 3 and 6.

Figure A.2: Characteristics in month prior to 2nd sanction, by timing

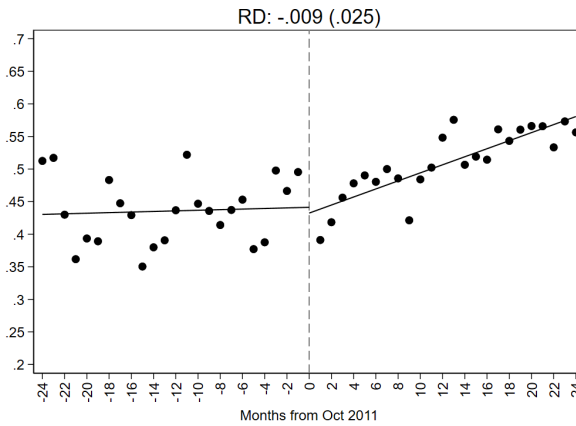
(a) Avg. # of Children



(b) % Married or partnered

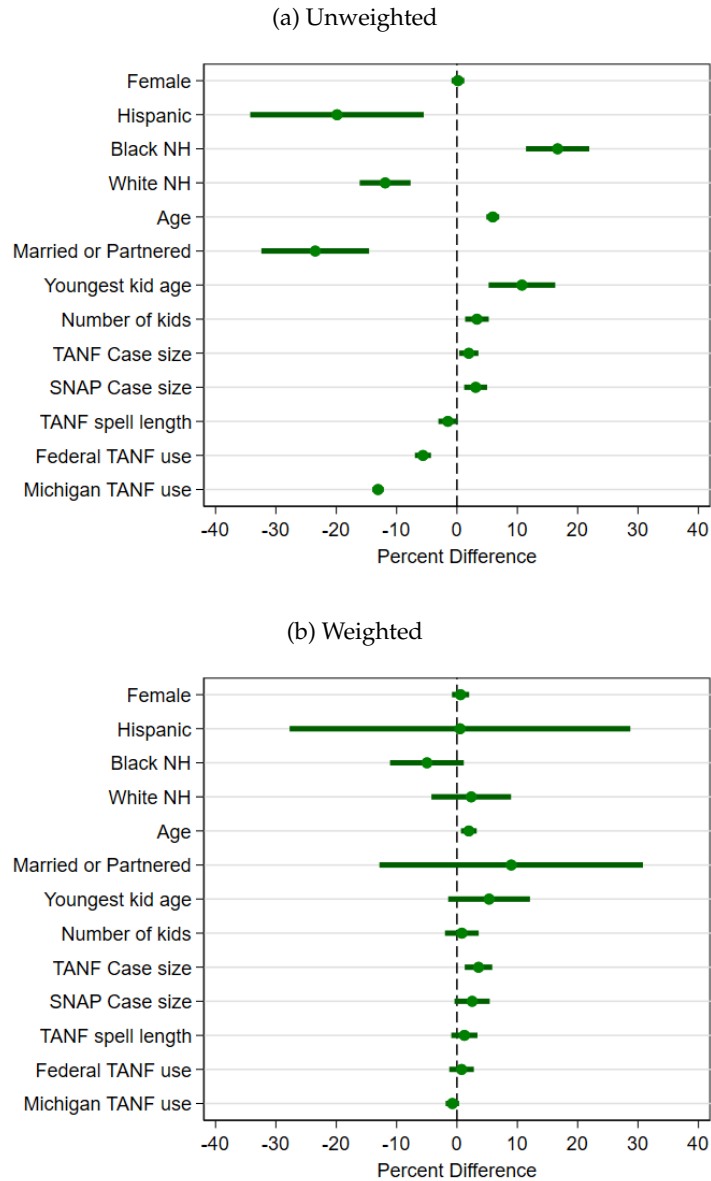


(c) % Black non-Hispanic



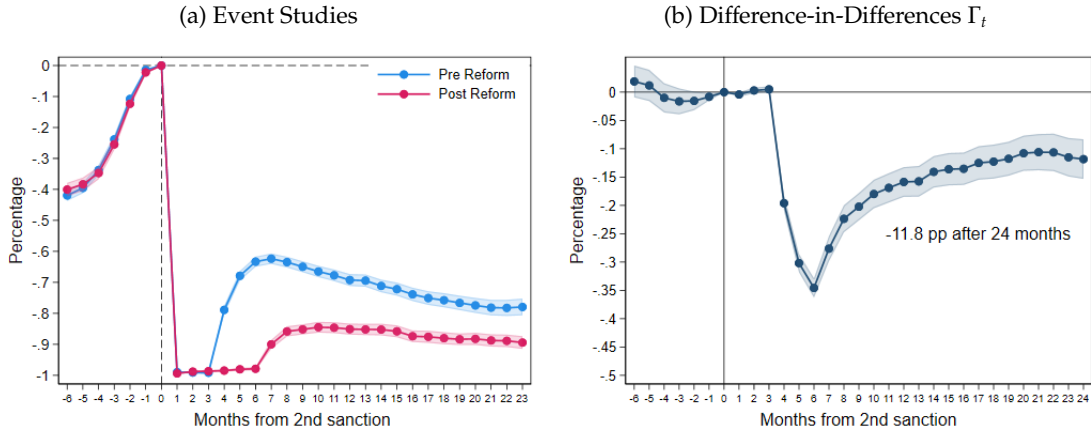
Note: To make plots, we restrict to analysis sample data in the month prior to a second sanction, and collapse characteristics by timing relative to the policy reform. Zero refers to October 2011; negative values refer to sanctions in months prior to the reform, and positive values refer to sanctions in months after the reform. After collapsing our data, we regress each characteristic on an indicator equal to one if the sanction month occurs after the reform, a continuous variable for the quadratic of relative event timing, and the interaction between this indicator and continuous variable. At the top of each panel, we display the estimate coefficient, e.g. "RD estimate," and its standard error in parentheses, which tests if the policy reform was associated with a discrete change in the composition of sanctioned beneficiaries.

Figure A.3: Effect Size of Pre-sanction observable difference



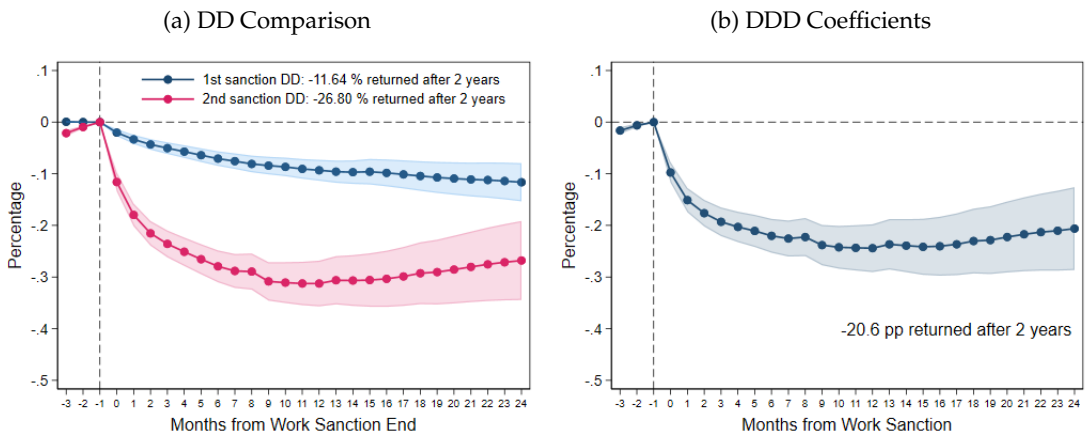
Note: To calculate effect sizes, we restrict to analysis sample data in the month prior to a second work sanction, and regress each characteristics on an indicator if the sanction takes place after the reform, with and without weights. We test the significance of the post-reform indicator coefficient, scaled by the constant term and plot results coefficients and confidence intervals, centered at zero. Panel A.3a shows results without propensity score weights, and panel A.3b shows results with propensity score weights.

Figure A.4: % Beneficiaries Enrolled in TANF each month



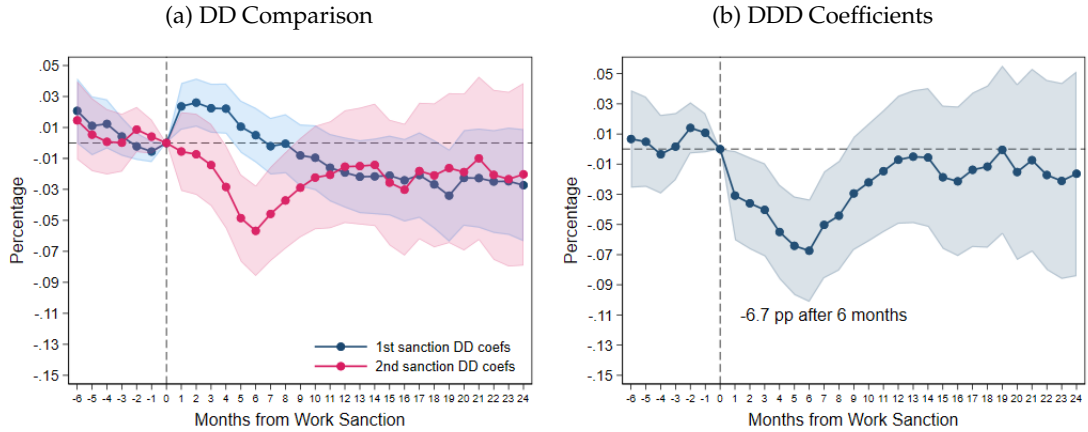
Notes: Figure plots estimates from equation 1 in 1a and equation 2 in the 1b. Y-axis units are percentage points and x-axis plots months relative to the month of a second work sanction. Outcome is TANF enrollment of beneficiaries in each month. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

Figure A.5: % of Beneficiaries ever returned to TANF



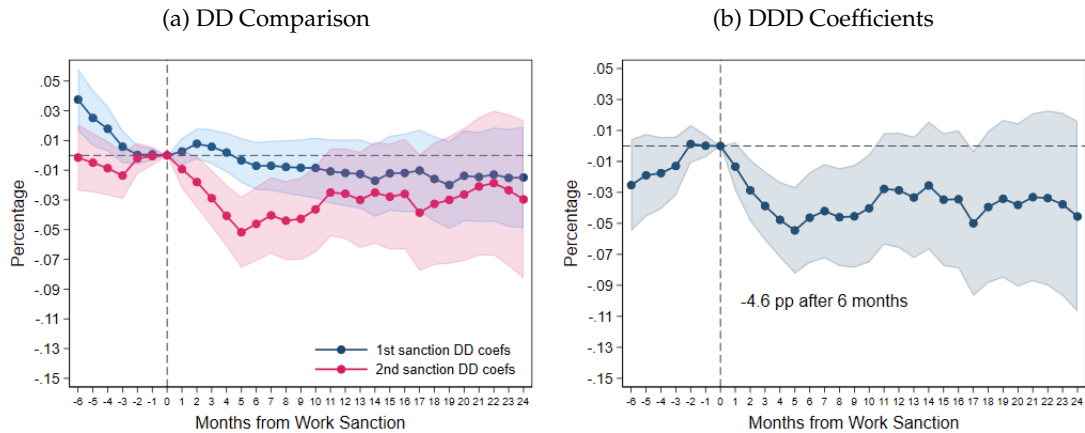
Notes: Figure plots estimates from equation 2 in A.5a and equation 4 in the A.5b. Y-axis units are percentage points and x-axis plots months relative to the month of a second work sanction. Outcome is the equal to TANF enrollment of beneficiaries in each month for periods -6 through 0. For periods 1 through 24, the outcome is equal to 1 if a beneficiary has returned to TANF by that time relative to sanctioning. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

Figure A.6: % of Beneficiaries enrolled in SNAP



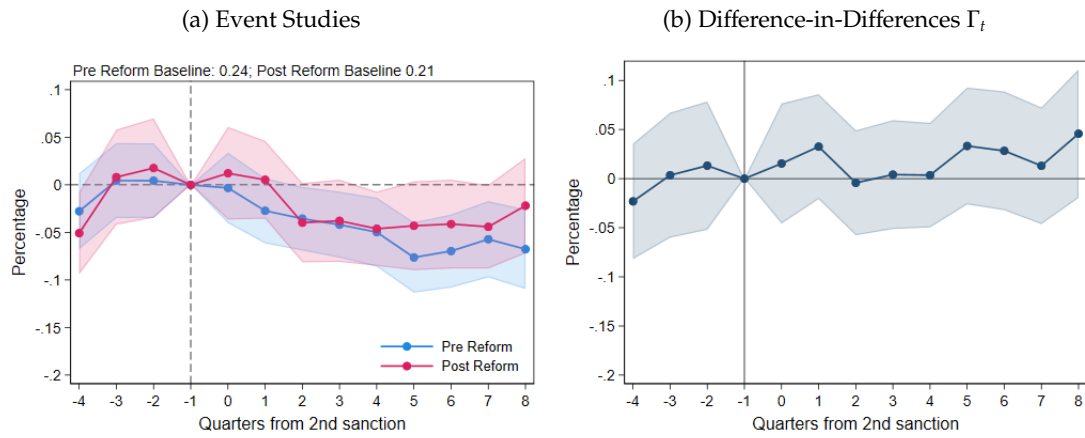
Notes: Figure plots estimates from equation 2 in A.6a and equation 4 in the A.6b. Y-axis units are percentage points and x-axis plots months relative to the month of a second work sanction. Outcome is the equal to SNAP enrollment of beneficiaries in each month. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

Figure A.7: % of Beneficiaries enrolled in Medicaid



Notes: Figure plots estimates from equation 2 in A.7a and equation 4 in the A.7b. Y-axis units are percentage points and x-axis plots months relative to the month of a second work sanction. Outcome is the equal to Medicaid enrollment of beneficiaries in each month. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

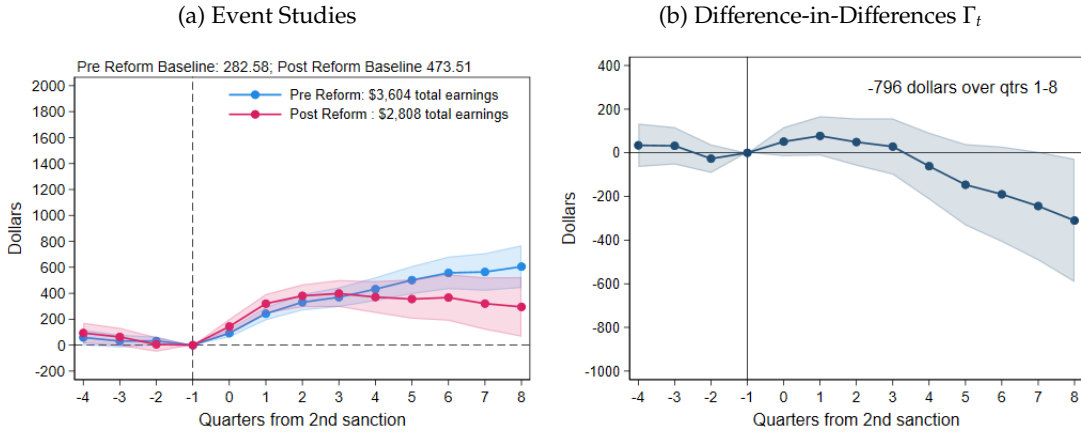
Figure A.8: % Transition from Employment to Unemployment



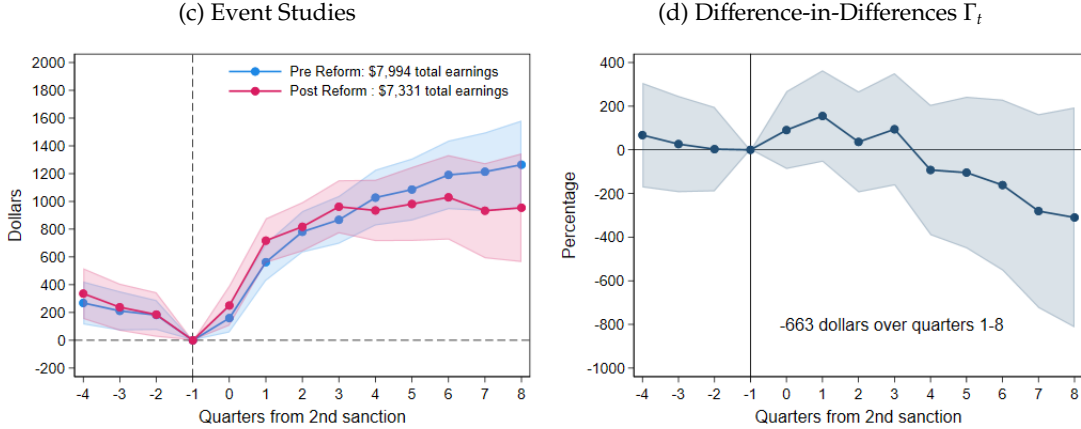
Notes: Figure plots estimates from equation 1 in 5a, A.8a and equation 2 in 5b, ???. Y-axis units are percentage points and x-axis plots quarters relative to quarter of a second work sanction. Outcome is an indicator variable equal to one if a beneficiary was employed in the prior quarter but unemployed in the current quarter. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

Figure A.9: Quarterly Earnings of Beneficiaries

Earnings including zeros

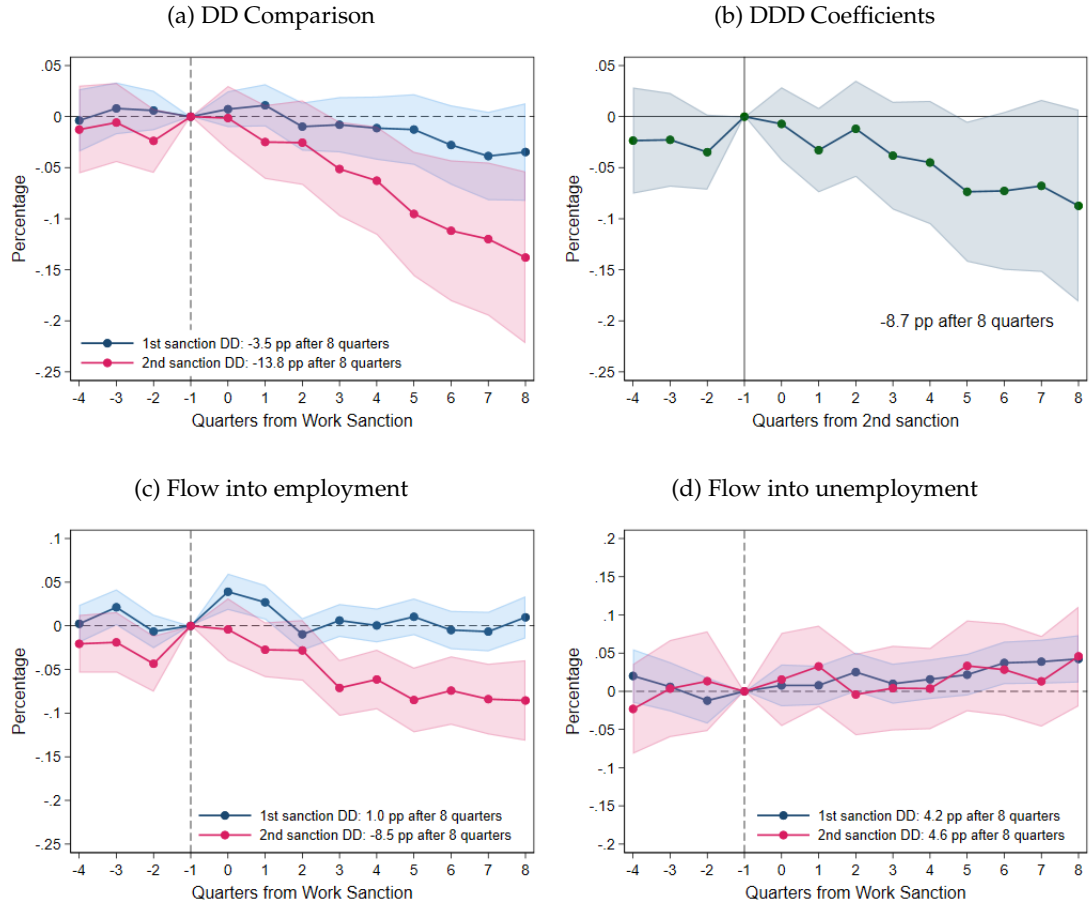


Earnings if positive



Notes: Figure plots estimates from equation 1 in A.9a, A.9c and equation 2 in A.9b, A.9d. Y-axis units are dollars and x-axis plots quarters relative to quarter of a second work sanction. Top panels show results for quarterly earnings, including zero when not formally employed, while bottom panels restrict to positive earnings. Outcome has been winsorized at the 99th percentile and deflated to 2015\$. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

Figure A.10: Quarterly employment of Beneficiaries

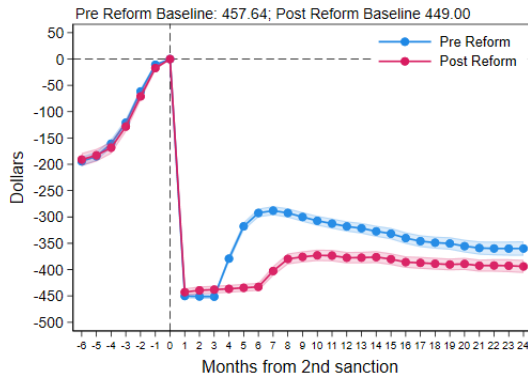


Notes: Figure plots estimates from equation 2 in A.10a and equation 4 in the A.10b. Y-axis units are percentage points and x-axis plots quarters relative to the quarter of a second work sanction. Outcome is an indicator variable equal to one if a beneficiary has positive quarterly earnings. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

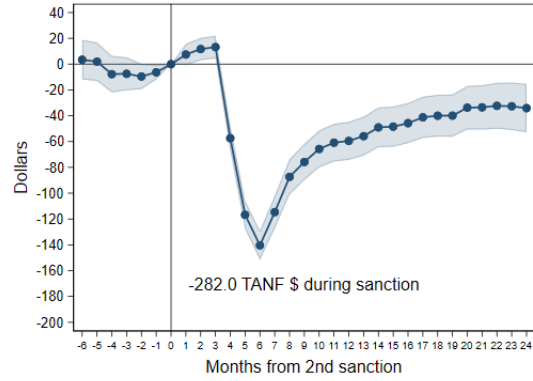
Figure A.11: TANF Benefits of case members

TANF Benefits across all members exposed to sanction

(a) Event Studies

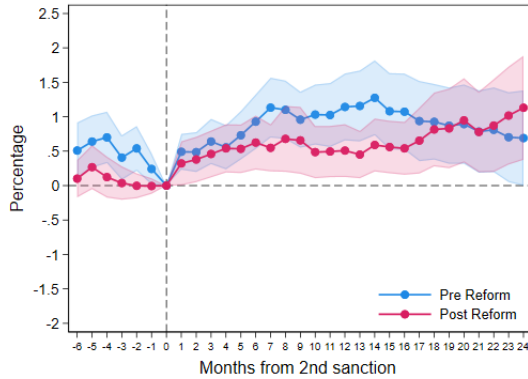


(b) Difference-in-Differences Γ_t

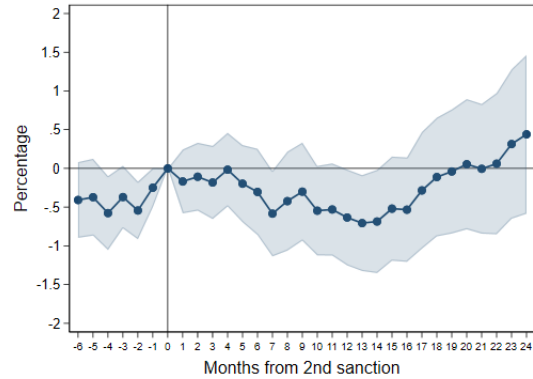


Percentage point of members on different TANF case

(c) Event Studies

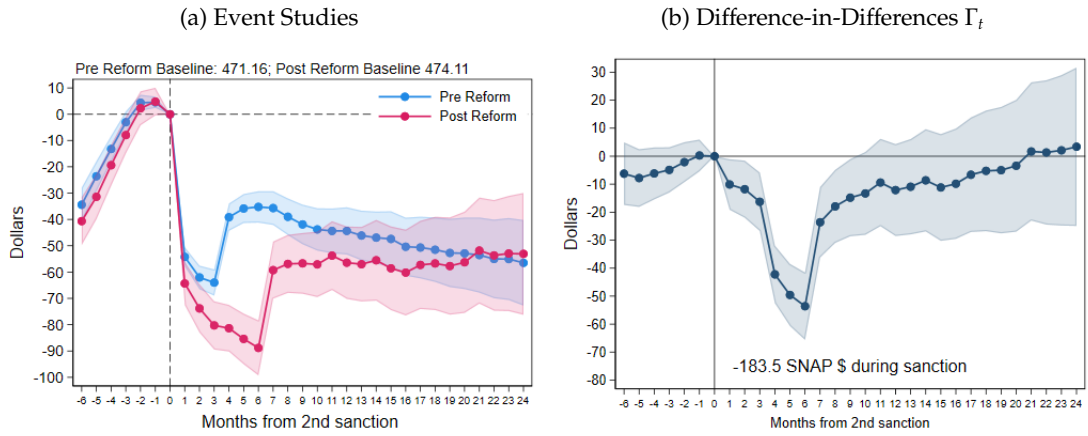


(d) Difference-in-Differences Γ_t



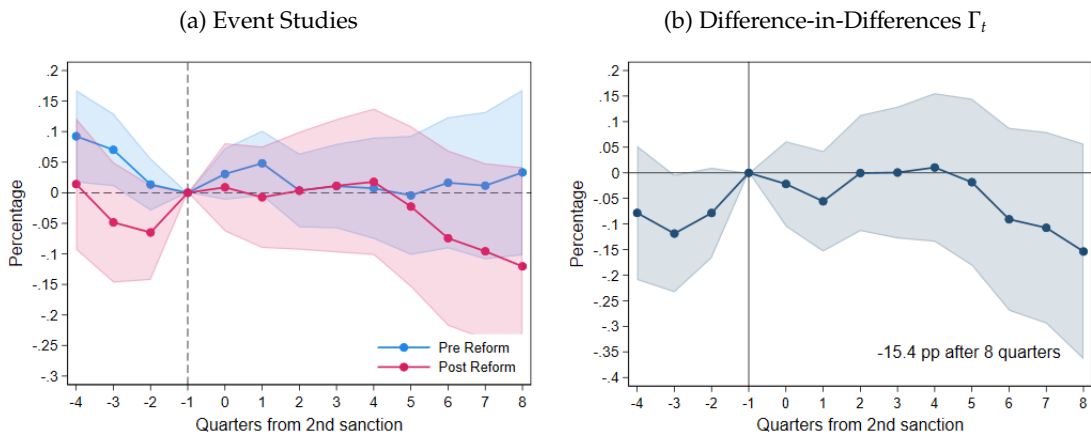
Notes: Figure plots estimates from equation 1 in A.11a, A.11c and equation 2 in A.11b, A.11d. Top panel y-axis units are dollars, bottom panel y-axis units are percentage points, and x-axis plots months relative to month of a second work sanction. Top panels outcome is equal to the total TANF benefit dollars associated with all case members exposed to the work sanction event, and bottom panels outcome is an indicator equal to one if a case member exposed to a work sanction is observed enrolled on a different TANF case. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

Figure A.12: SNAP Benefits of case members



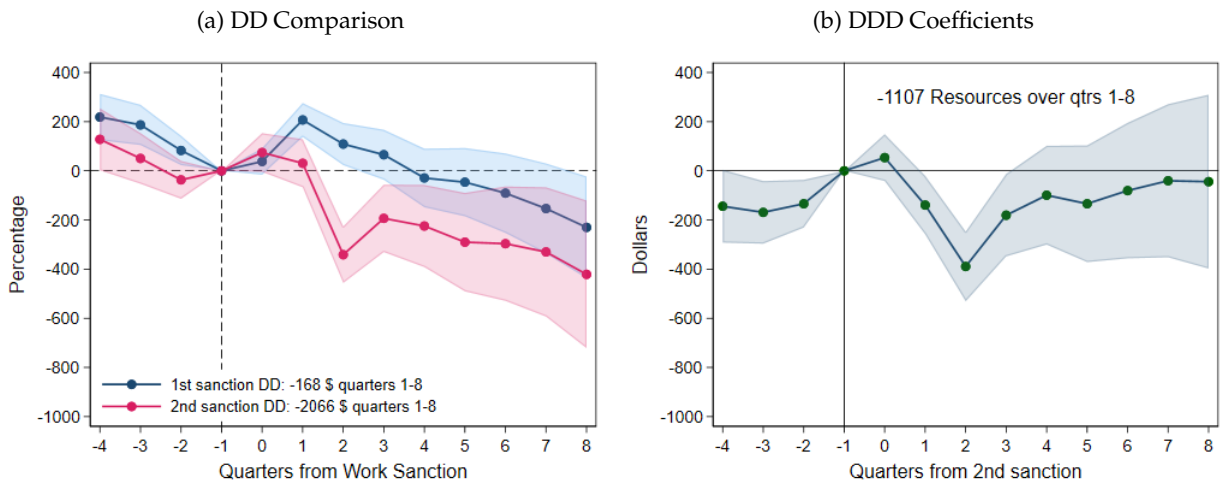
Notes: Figure plots estimates from equation 1 in A.12a and equation 2 in A.12b. Y-axis units are dollars and x-axis plots months relative to month of a second work sanction. Outcome is equal to the total SNAP benefit dollars associated with all case members exposed to the work sanction event. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

Figure A.13: Employment Cases with Multiple Adults



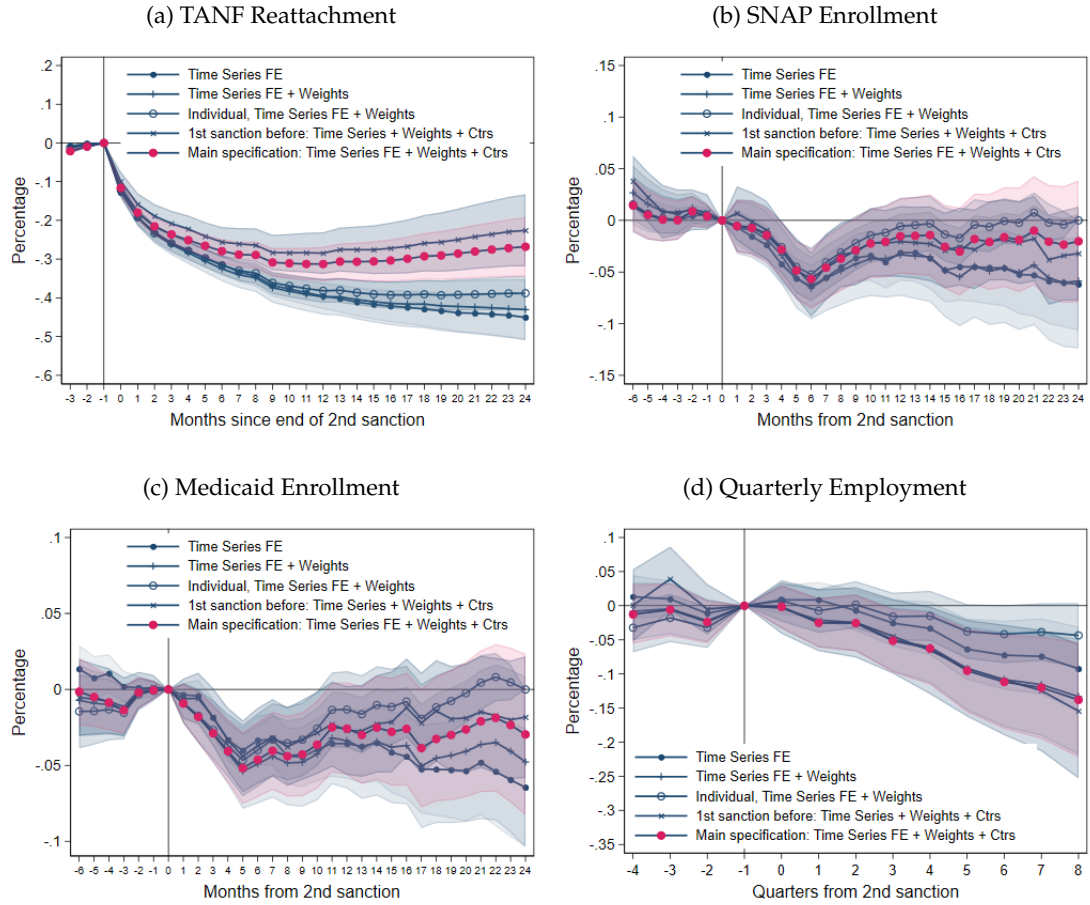
Notes: Figure plots estimates from equation 1 in A.13a and equation 2 in the A.13b. Y-axis units are percentage points and x-axis plots quarters relative to quarter of a second work sanction. Outcome equal to employment rate of all working age adults in a case exposed to work sanctions. We restrict our sample to cases with more than one working age adult. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

Figure A.14: Household Resources (TANF + SNAP + total earnings)



Notes: Figure plots estimates from equation 2 in A.14a and equation 4 in the A.14b. Y-axis units are dollars and x-axis plots quarters relative to quarter of a second work sanction. Outcome is equal to the sum of total TANF and SNAP benefit dollars, as well as all formal labor earnings, associated with all case members exposed to the work sanction event; outcome has been deflated to 2015 dollars. Models include quarter fixed effects, year fixed effects, and pre-sanction covariates as described in text. Coefficients in the left panel are estimated in a model that fully interacts fixed effects and covariates with an indicator equal to one if the work sanction takes place after the reform. Models are propensity score weighted as described in text. Standard errors are clustered at the beneficiary person identifier level.

Figure A.15: Specification Sensitivity of Main Results



Notes: Figure plots estimates from equation 2 across different specification and sample choices. All models include time-series fixed effects and cluster standard errors at the person level. We compare this baseline version, with a specification that adds propensity score weights (+ markers), a specification with individual fixed effects (hollow markers), our main specification that adds pre-sanction covariates (pink markers), and our main specification that restricts to the group of beneficiaries whose first sanction took place prior to the reform (x markers).

B Eligibility Grant Calculation

While we observe actual enrollment in TANF and SNAP, we are interested in the extent to which households that are eligible for the program do not enroll. As such, we will use stated program eligibility and benefit calculation rules to create proxies for program eligibility, and in the case of SNAP, to impute benefit amounts when enrolled in the program.

For both programs, eligibility and benefit amount depends on the number of people in an assistance unit. To approximate this surrounding a work sanction, we use information about the number of case members enrolled in TANF or SNAP in the month prior to sanctioning. We next estimate monthly household income as one third of the matched quarterly administrative earnings records for the case. During the months that a case is sanctioned, their previous TANF benefit is counted as income for SNAP benefit calculation.

Cases with zero gross income are eligible for both programs and receive benefits that depend on the number of people in their assistance unit. For TANF, this amount is equal to the Budgetary Needs Standard (BNS), which is set by Michigan and varies from X for a single parent with one child to Y for a family of Z; for SNAP, this amount is called the maximum allotment and is set by the USDA's Thrifty Food Plan and varied from \$200 for a single adult to \$1202 for a family of 8 in 2011. If a case has positive gross income, Michigan TANF benefit amounts are calculated by subtracting \$200 from earned income, multiplying this amount by a benefit reduction rate (BRR), and then subtracting the resulting quantity plus any unearned income from the BNS. Cases are eligible for TANF benefits as long as the remaining quantity is positive. After cases exit TANF, we use these eligibility rules to approximate incomplete take-up of TANF.

SNAP benefit amounts are calculated by first deducting 20 % of monthly earnings from gross income, and then deducting an amount that varies by household size to capture spending on necessities and shelter. SNAP benefit amounts are calculated by first deducting 20 % of monthly earnings, and then deducting an amount that varies by household size to capture spending on necessities and shelter. The remaining quantity is the cases's net income, which must be below 100% of the Federal Poverty Line for a case to qualify for SNAP benefits. SNAP benefit amounts are then equal the relevant maximum allotment minus 30 % of the calculated net income. We use this benefit calculation formula, in addition to the number of enrolled case members and estimated monthly income, to approximate SNAP benefits for each month of our panel.

C Work requirement details

To meet work requirements, all able bodied adults must participate in “employment-related” activities for 30 hours per week if there is one worker in the assistance unit, a combined 50 hours per week if there are two workers in the assistance unit, or 20 hours per week if they care for a child under the age of 6. To verify work, caseworkers must receive two consecutive pay stubs, get confirmation from managers, or through Equifax verification services. There are multiple ways that participants can meet work requirements. Other than formal employment, activities that count towards the first 20 hours include job search, job readiness, vocational training, on-the-job training, providing child care for others, and community service. However, job search hours are limited to 12 weeks per year, with no more than 4 consecutive weeks, and community service hours are capped.³⁰

If participants quit a job, are fired for misconduct or absenteeism, voluntarily reduce their hours or earnings, refuse an offer of employment or additional hours, or do not participate in work-training-orientation activities, they are considered in violation of work requirements. When in violation, caseworkers will mail a “Notice of Non-Compliance” to the address on file, which explains the nature of the violation and subsequent penalties to participants (See MDHHS form 2444). In Figure C.1, we show portions of this form that provide key information to beneficiaries. As shown in panel (a), caseworkers will briefly describe the date and reason for the violation of work requirements, as well as the date and time that beneficiaries can talk to their case worker to verify reasons for non-compliance. In panel (b), we show the portion of the form that describes how to contact their caseworker or change their appointment. Finally, panel (c) shows the portion of the form that describes the penalty – whether a beneficiary will lose access to TANF (i.e. FIP), Refugee Cash Assistance (RCA), or SNAP (FAP) and for how long.

If beneficiaries do not see this letter in a timely manner, they could miss their appointment or be entirely unaware that they will lose benefits. Even if they do see this form in time, the form uses technical and brief language, as well as many acronyms, leaving large scope for mis-understanding or limited comprehension. If workers believe they have been erroneously sanctioned, they have 10 days to meet with their caseworker and provide documentation to avoid this penalty. They can also claim deferrals from these requirements for a list of reasons included in the Notice of Non-Compliance as follows:

- Physically or mentally unable to work, as shown by medical evidence.
- Proof that a reasonable accommodation was requested but employer did not provide.
- Childcare is not “adequate, suitable, affordable” and not within a reasonable distance from your home or work site.

³⁰See Michigan Benefits Eligibility Manual 230 A and B.

- Reasonably priced transportation is not available.
- Available employment involves illegal activities.
- Proof of discrimination on the basis of "age, race, disability, gender, color, national origin or religious beliefs."
- Proof of unplanned event or factor that prevents or significantly interferes with employment-related activities. E.g. domestic violence, homelessness, jail, safety risk, hospitalization.
- Quitting a job to take another job with equivalent or greater salary that has been accepted before the quit.
- Total commuting time exceeds two hours per day, not including time to and from child care facilities, OR exceeds three hours per day including time to and from child care facilities.
- Employed full-time for 40 hours per week at at least the state minimum wage.
- Are a single parent with a child under age 6.
- Moved due to another household members job, education or training.
- Have a job that requires you to join, resign from, or refrain from joining a labor union.
- Have a job that is on strike.

C.1 SNAP Work Requirements

In addition, work requirements and enforcement policies have been implemented in SNAP and Medicaid. All able-bodied adults ages 16-59 must meet SNAP General Work Requirements, which include an employment and training program, requirements to accept work when offered, and not voluntarily quit employment or reduce hours below 30 hours per week. Individuals that already work more than 30 hours per week, take care of children under the age of 6, or have disabilities do not need to meet these requirements. If an individual does not care for children, beneficiaries must also work or participate in a work program for at least 80 hours per month in addition to other requirements ([Bauer and East, 2023](#)).

Upon violating any SNAP work requirements, beneficiaries are removed from SNAP for a minimum sanction of one month, although as with TANF, these enforcement rules vary across states and over time. Reasons that could qualify a beneficiary to remain enrolled in SNAP upon a violation of TANF work requirements include: job pays below the hourly minimum wage; employment interferes with at least half time enrollment in a education/job training program; the employer makes unreasonable demands or conditions; the person must quit a job and move out of the county; promised work hours do not materialize; the person would be forced to join a union; or, only employment within first 30 days is outside of client experience/field.

Figure C.1: Form mailed to beneficiaries upon sanctioning

(a) Details on violation

NOTICE OF NONCOMPLIANCE

Non Compliant Individual:

Records show that you have refused or failed to participate as required in employment and/or self-sufficiency related activities for FIP, RCA and/or FAP as noted below:

DATES

HOW YOU DID NOT COMPLY

A meeting has been scheduled to give you an opportunity to report and verify your reasons for non-compliance. If you want to have a telephone meeting, please call to schedule it **before** you miss your scheduled appointment.

Appointment Date:

Appointment Time:

Appointment Location:

Specialist Comments:

(b) Details on next steps

Case Name	Case Number	Specialist
-----------	-------------	------------

It is important that you keep your appointment (see above) or call your specialist to prevent this closure before you miss your scheduled appointment. If you need to change the date or time of this meeting, you must reschedule before you miss your scheduled appointment. Your specialist can be reached between the hours of _____ and _____, Monday – Friday. Please leave a message indicating when and where you can be contacted. If you cannot attend in person and want to participate in a phone conference, please call your specialist at the phone number listed at the top of this notice to set up a phone conference before you miss your scheduled appointment.

It is your responsibility to report and verify reasons for your actions. This is your opportunity to claim barriers that make it hard for you to work. If you do not contact me before your appointment date, I will make a good cause decision for you using the information available to me. You may lose your Family Independence Program (FIP) benefits or your RCA (Refugee Cash Assistance) benefits may be reduced and if you receive Food Assistance, your Food Assistance benefits may be closed or reduced.

- ☐ This is the first time you have been non-compliant with FIP, RCA, and/or FAP. See below for FIP, RCA, and FAP penalty information.
- ☐ This is the second time you have been non-compliant with FIP, RCA, and/or FAP. See below for FIP, RCA, and FAP penalty information.
- ☐ This is at least the third time you have been non-compliant with FIP, RCA, and/or FAP. See below for FIP, RCA, and FAP penalty information.

(c) Details on penalty

Individual Penalty Information. See above for more information about the penalty that applies to your circumstances.*

1 st Non-Compliance	2 nd Non-Compliance	3 rd Non-Compliance
<input type="checkbox"/> FIP – Your case will close for a minimum of 3 months.*	<input type="checkbox"/> FIP – Your case will close for a minimum of 6 months.*	<input type="checkbox"/> FIP – Your case will close for a lifetime sanction.
<input type="checkbox"/> RCA – You will be disqualified for a minimum of 3 months.	<input type="checkbox"/> RCA – You will be disqualified for a minimum of 6 months.	<input type="checkbox"/> RCA – You will be disqualified for a minimum of 6 months.
<input type="checkbox"/> FAP – You will be disqualified for one month or until compliance, whichever is longer.	<input type="checkbox"/> FAP – You will be disqualified for 6 months or until compliance, whichever is longer.	<input type="checkbox"/> FAP – You will be disqualified for 6 months or until compliance, whichever is longer.

*For a two-parent household, refer to your DHS-1605, Notice of Case Action, for the group penalty period.

Good Cause Reasons

You have the right to claim good cause if you believe you should be excused from the FIP or RCA and/or FAP work rules. If you think you have a good cause reason, contact your DHS specialist right away. (NOTE: Reasons for good cause may change.)

IF YOU VERIFY GOOD CAUSE, YOUR FIP, RCA AND/OR FAP CASE WILL NOT CLOSE OR BE REDUCED. You must verify your good cause before or during your triage appointment.

D Change to TANF Benefit Reduction Rate

The 2011 reform reduced the TANF benefit reduction rate from 80 to 50 percent. This change meant that at every earnings level higher than the earnings disregard of \$200, cases received higher benefits after the reform than they would have received prior to the reform. This change also meant that cases could earn more before losing benefits completely. Theoretically, this change should have incentivized higher earnings among work-required adults on TANF, independent of the change in sanction severity. If adults on TANF did earn more as a result of this change in the benefit reduction rate, our estimates of the effect of harsher sanctions on earnings would be biased upwards.

To test this, we use income data reported at application to estimate the share of cases earning below the earnings disregard, in the pre-reform phase-out region, or above the pre-reform phase out region, separately for cases that had their second work sanction before vs after the policy reform (Table D.1). We find that cases are less likely to be earning below the disregard when the benefit reduction rate is lower, but the difference is small (3.4 percentage points). Both before and after the reform, cases are overwhelmingly likely to have earnings below the disregard, and less than 1 percent of cases would locate on the new phaseout region. This finding suggests any bias generated by this concurrent policy reform is likely to be small.

Table D.1: Location on TANF budget set at entry

	Before Oct 2011	After Oct 2011	<i>t</i> -stat of difference
% Below disregard	90.5	87.1	4.2
% Original phaseout region	9.2	12.2	-3.6
% New phaseout region	0.3	0.8	-2.6

E Data preparation

To construct our data, we begin with a series of text files provided to us by the Michigan Department of Health and Human Services. There are 11 separate files of administrative records that include unique identifiers for each individual (`person_id`) and each TANF case (`case_id`) that we can use to combine files after we reshape data to `unit:month` or `unit:quarter` panel structure.

1. **PS_Recipient_Eligibility_FIP:** Contains information used to determine eligibility for all individuals with TANF eligibility between 2008 and fiscal year 2020.
2. **PS_Time_Limits** Contains state, federal TANF time limit counters for every adult enrolled in TANF. Link with unique person identifier.
3. **PS_Quarterly_Wages:** Contains quarterly data from Michigan Unemployment Insurance Agency, linked by MDHHS. Link with unique person identifier.
4. **PS_Recipient_Eligibility_OtherPrograms:** Contains other public assistance program eligibility spells for all individuals ever enrolled in TANF. Link with unique person identifier.
5. **PS_Recipient_Demographics:** Gender, date of birth, date of death, race, ethnicity, veteran, and migrant status of all persons ever enrolled in TANF. Link with unique person identifier.
6. **PS_Case_Income_Grant_Amts:** Budget information reported by beneficiary at time of application that is used to determine TANF grant amount. Link with TANF case identifier.
7. **PS_Case_Location:** Contains county, city, zipcode, census tract, school district of case physical location. Link with TANF case identifier. Unclear when this file is updated, as date ranges do not correspond to eligibility episodes.
8. **PS_FIP_Applications:** Contains identifier for case beneficiary, application date, decision date, application decision (approved or denied). Link with TANF case identifier.
9. **PS_FIP_Application_Denial_Reasons:** Contains application date and denial reason. Link to PS_FIP_Applications with TANF case identifier.
10. **PS_Closure_Case_Notice_Reasons:** Contains date and reason for closure of entire case. Link to PS_Closure_Person_Notice_Reasons with TANF case identifier to find which member violates requirements.
11. **PS_Closure_Person_Notice_Reasons:** Contains date and reason for closure. Unique person and TANF case identifiers.

Data coverage notes: Due to a change in the data processing system, records load on through 2008 so coverage is incomplete. We begin our panel in January 2009 when monthly TANF caseload

counts stabilized.

Data linkage and sample creation: After each sub-panel is cleaned and prepared (i.e. such that it is unique at the person:month or case:person:month level), we combine files as follows:

1. Start with **PS_Recipient_Eligibility_FIP**, which tells us the grantee and participant person_id associated with each case number over time.
2. Merge to **PS_Time_Limits**, which contains recorded benefits and time limit counters for all adults and grantees. If a benefit amount appears in this file, this means TANF was issued that month, i.e. the associated people are enrolled in the program.
 - Identify all cases with a member granted a hardship exemption (granted to up to 20% of the caseload prior to October 2011). Identify all individuals enrolled in case with hardship exempt member, and all subsequent cases with which they are affiliated. Drop all individuals exposed to the hardship exemption.
 - Identify all cases with a member subject to work requirements. Identify all subsequent cases with which they affiliated. Drop cases with no members currently or formerly subject to work requirements.
3. Merge with **PS_Recipient_Demographics**.
 - Construct age variable as the current month:year relative to listed birth-date. Drop unborn children and top code age to 100.
 - Create control variables for race/ethnicity, married/partner status, number of children, number of children under the age of 6, average age of children, age of youngest child, and number of children enrolled in TANF when active.
4. Merge with **PS_Recipient_Eligibility_OtherPrograms** for information on SNAP and Medicaid enrollment each month.
 - If no matched record, set enrollment indicator to 0.
 - Create variables for the proportion of children and non-grantee members enrolled in SNAP and Medicaid each month.
5. Merge with **PS_Quarterly_Wages** at the person:quarter level.
 - Adjust earnings with 2015 quarterly Consumer Price Index.
 - Identify all members with matched earnings records in a given quarter (i.e. “workers”).
 - Create variables for employment if earnings are positive and case employment as the proportion of workers with positive earnings.

6. Merge with panel of work sanctions and frequency (see next section for details).
 - Identify each individual exposed to first and second work sanctions and create flags for any subsequent case affiliation.
7. Save panel unique at person:month of all individuals exposed to TANF work requirements and not exposed to the hardship exemption between January 2009 and December 2018.
8. Restrict to individuals ever listed as a grantee (i.e. TANF beneficiary). Populate case_id with last active TANF case.
9. Merge with **PS_Case_Income_Grant_Amts** to verify child-only months, budgetary needs standard, and income reported at application.
10. Merge with **PS_Case_Location** to identify each zipcode and county affiliated with all active TANF cases. Assume individuals are located at last recorded address when not enrolled in TANF.
11. Merge with **PS_FIP_Applications** and **PS_FIP_Application_Denial_Reasons** to identify months with submitted TANF applications, decisions, and reasons for denial. This data loads on in 2010, so censored for some of the pre-reform sample.
12. Verify panel is unique at the beneficiary:month level, and create remaining variables:
 - Top code earnings at the 99th percentile of the non-zero distribution.
 - Merge on Bureau of Local Area Unemployment Statistics measures for county employment and e-pop.
 - Merge on data of total TANF benefits accruing to any case member exposed to a first or second work sanction.
 - Merge on data of SNAP and Medicaid enrollment rates of any case members exposed to work sanctions.
 - Variables for TANF spell frequency and length, entry and exit into TANF, days between application and work sanction, number of TANF applications to date, indicators if work sanctions take place before or after reform, indicator if multiple adults when sanctioned, flows into employment/unemployment, indicators if ever returned to TANF after 1st or 2nd work sanction, indicator if 1st or 2nd sanction takes place between October 2009 and October 2013, indicators for placement on TANF budget set according to reported income at application.
13. Save beneficiary:month 2009-2019 panel.

Identifying work sanctions: Identify all individuals with a listed closure from TANF between 2008-2020 by combining **PS_Time_Limits**, **PS_Closure_Case_Notice_Reasons** and **PS_Closure_Person_Notice_Reasons**.

1. Restrict to individuals with a listed work sanction, or recorded months with zero benefits in time limit file.
2. Restrict to individuals subject to work requirements.
3. Drop if sanctions occur after January 2019, tsfill the panel at the person_id: month level.
4. Create a variable for spells between listed work sanctions associated with a given person. Count the number of months that TANF benefits are missing or recorded as zero immediately after a work sanction.
5. Create flag if an individual ever returns to TANF after a work sanction.
6. Code verified work sanctions as follows:
 - Observe 3 or 12 months of zero benefits prior to November 2011. N = 37,842
 - Observe 3 or 6 months of zero benefits after October 2011. N = 62,698
 - Observe only 2 months of zero benefits, but three months off of TANF in a closure spell, and evidence that the beneficiary returns to TANF after the sanction. N = 423
 - Observe more than 4 months of zero benefits, but no listed closure. N = 3,349
 - Listed closure, but no months of zero or missing in time limit file, indicates a lifetime ban. N = 21,528
7. We choose to disregard the following cases as non-work sanctions:
 - Instances with only 1 month of zero or missing benefits. Welfare rules database indicates this likely occurs when someone refuses a job or for child support closures.
 - Have a listed closure, but no zero months and return to TANF at a later date. Assume reconciliation was able to happen.
8. Next we create a variable for whether a sanction is 1st, 2nd, or 3rd observed for a given beneficiary.
 - 3rd sanction if 12 sanction months prior to November 2011 (N = 3,956)
 - 2nd sanction if 6 closure months after October 2011 (N = 14,961)
 - 1st sanction if 3 closure months after October 2011 (N = 47,041)
 - 2nd sanction if next observed sanction is 3rd (N = 1,746)
 - 1st sanction if next observed sanction is 2nd (N = 4,782)
 - 2nd sanction if last observed sanction is 1st (N = 1,793)
 - 3rd sanction if last observed sanction is 2nd (N = 1,955)
 - 3rd sanction if no zero benefit or missing benefit months, evidence of previous sanction, evidence that beneficiary never returns to TANF, and after October 2011.

Analysis sample preparation: Begin with beneficiary:month 2009-2019 panel

1. Drop any cases included a member with time limit utilization above 48 state months or 60 federal months. Drop any cases closed from TANF for SSI enrollment.
2. Create event timing indicators surrounding first and second work sanctions.
3. Create balance indicators for events that have a fully populated event time window.
4. Create pre-sanction covariates equal to the value in month prior to a work sanction.
5. Create outcome of TANF reattachment. Equivalent to TANF enrollment prior to sanctioning, then equal to one as soon as individual returns to TANF after sanctioning.
6. Create categorical control variables.
 - TANF spell-months top coded at 7. Number of TANF spells top coded at 3. Number of children top coded at 3. Number of TANF case members top coded at 5.
 - Beneficiary age bins coded as: 0-21, 22-25, 26-29, 30 and older
 - Average kid age bins coded as: 0-1, 1-3, 3-5, 5-9, 9-18
 - Youngest kid age bins coded as: 0, 1-2, 3-4, 5-18
 - TANF time limit use bins coded as quantiles of the within-sanction group distribution.
7. Create indicators for work sanctions that occur in counties whose unemployment rate is among the bottom 25 percent or top 25 percent of the statewide distribution in a given month.
8. Restrict to beneficiaries with first or second work sanctions between October 2009-October 2013.
9. Impute SNAP benefits and TANF eligibility.
10. Create measure of household resources as the sum of TANF benefits, imputed SNAP benefits, and all earnings of affiliated case members.
11. Save beneficiary:month analysis sample. Collapse to quarterly level for labor supply analysis.