

Sanctions and Time Limits in California's Welfare Program

Technical Appendix

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Description

In this technical appendix, we provide details of the approach we used to arrive at the estimates presented in the tables in the report. We first describe the data and methodology underlying our estimates of policy effects on the work participation rate. This section includes a discussion of the robustness of our estimates, most especially to the key assumption that we have adequately controlled for state differences in economic, demographic, and other factors. We then describe the data and methodology we used to estimate effects of sanctions and time limits on the employment, earnings, income, and poverty of single-mother families.

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1. Analysis of Work Participation Rate

Data: Dependent Variables

TANF and SSP-MOE Data Reports

The Office of Family Assistance (OFA) reports the All Families and Two Parent rate numerator and denominator for fiscal years 1998-2005. While the Current Population Survey (CPS), the data source we use for our analysis of family economic conditions, is available for a longer time period and also has large samples of welfare recipients, we do not use it for the work participation rate analysis because accurately tracking federally countable work activities is not possible using the CPS. In order to know whether an adult is meeting the federal requirement, we must know hours of employment in a month and participation in any other countable activities (see the instructions to states at www.acf.hhs.gov/programs/ofa/tanfrpts/index.htm). The CPS tracks only usual weekly hours worked and was not designed to ask about hours of participation in the other countable activities.¹ Finally, research using the CPS commonly does not distinguish between child-only (or zero-parent) cases and cases containing one or more parents, because it is difficult to do so. Child-only cases, however, are disregarded from the work participation rate (unless they are child-only because parents are sanctioned or time limited), and such cases now make up a substantial minority of the caseload.

Thus we use official work participation statistics for the 50 states as the dependent variables in the work participation rate models. Until the reauthorization of the TANF program in 2006, official work participation rates excluded cases in SSPs. While OFA also reports work

¹ The CPS is also known to undercount welfare recipients substantially (Klerman, Ringel, and Roth, 2005), and we do not know whether those who accurately report welfare receipt are more or less likely to be working than those who misreport their welfare receipt.

participation rates among families in SSPs (even though those in an SSP had no federal work participation requirement until fiscal year 2007), official estimates of the numerator and denominator of the rates are not published. We therefore calculate estimates of the SSP numerator and denominator by going back to the individual-level data that states submit quarterly to the Department of Health and Human Services (DHHS) using form ACF-204 (SSP-MOE Data Report). Both the TANF and SSP individual-level data are available at aspe.hhs.gov/ftp/hsp/tanf-data/index.htm, and the instructions to states for filling out the forms are available at www.acf.hhs.gov/programs/ofa/tanfrpts/index.htm.²

According to ACF official caseload statistics, SSP cases made up 7 percent of all cases in the nation as a whole in 2005, and 51 percent of two-parent cases were in an SSP (OFA, 2007). Because it is possible that the data that states submitted about their SSP cases is of lower quality than the data they submitted for their TANF cases, and because we do not exactly reproduce official work participation rates by going back to the individual-level data, we also present results that exclude SSP cases (see Table A.4).

Official state work participation rates are estimates: DHHS requires states that do not submit the entire universe of their cases to submit a sample large enough to calculate caseload statistics with an acceptable level of precision, which is defined to be approximately 250 cases per month or the entire caseload if it is smaller (Office of Family Assistance, 1999). If a state runs an SSP, this data requirement is doubled (250 TANF and 250 SSP cases).³ Before releasing the data, DHHS samples from the universe for states that report the universe. Therefore, sample

² The TANF Data Report is submitted using form ACF-199. In California, this dataset is called the Q5.

³ States were not required to submit individual-level data on their SSP cases, but all did. States also submit data on a (smaller) sample of “inactive” cases—cases that closed in the reporting month. We do not use these data in this report.

sizes across states are fairly uniform, with the exception that states with SSPs have double the sample of those without SSPs. No state had an SSP before fiscal year 2000.

Table A.1 presents sample sizes, by type of case, for California.⁴ California moved two parent cases to an SSP in FY 2000, so its two parent sample rises dramatically, and its overall sample doubles, from that year forward. It is worth noting that, while most single- and two-parent cases contain an adult who is federally required to participate in work activities, child-only cases do not have such “work-eligible” adults.

Table A.1
TANF and SSP-MOE data reports, California sample sizes

| Fiscal Year | Single-parent | Two-parent | Child-only | Total |
|-------------|---------------|------------|------------|-------|
| 1998 | 3,440 | 2,226 | 1,434 | 7,100 |
| 1999 | 1,941 | 831 | 961 | 3,733 |
| 2000 | 2,098 | 3,225 | 1,182 | 6,505 |
| 2001 | 1,840 | 3,034 | 1,207 | 6,081 |
| 2002 | 1,890 | 3,082 | 1,303 | 6,275 |
| 2003 | 1,808 | 3,052 | 1,426 | 6,286 |
| 2004 | 1,764 | 2,723 | 1,981 | 6,468 |
| 2005 | 1,588 | 2,729 | 2,050 | 6,367 |

SOURCE: Authors’ calculations from TANF and SSP-MOE Data Reports.

NOTES: In this table, “single-parent” refers to cases counted only in the All Families work participation rate (although some were disregarded), “two-parent” refers to cases counted in both the All Families and Two Parent rates (again, some were disregarded), and “child-only” refers to cases with no work-eligible adults (under the regulations in effect until FFY 2007).

ACF Official Caseload Data

OFA also reports state-level caseload totals at www.acf.hhs.gov/programs/ofa/caseload/caseloadindex.htm. We use these in our check on the robustness of the methodological approach (described below). We also use them to adjust our estimates of SSP work participation rates – we require that the caseload totals we calculate from the SSP-MOE Data reports sum to the administrative totals reported by OFA.

⁴ The large sample in 1998 is apparently due to the large number of cases “listed in error” (e.g., inactive cases mistakenly selected to be in the sample) in California in that year.

Census Data

We divide the numerator and denominator of the work participation rate by the number of females between the ages of 16-46 in a state to take account of the fact that state populations vary widely. We obtained population counts from Census Bureau estimates, available at www.census.gov/popest.

Data: Independent Variables

The key policies of interest in this report are welfare sanctions and time limits. States' sanction and time limit policies are complex; however, we can classify them into a small number of types. We classify state sanction policies into four types: Adult removed, grant reduction, gradual grant elimination (the family's assistance is eventually eliminated if adult(s) fail to fulfill program requirements over a period of time), and immediate grant elimination. Adult-removed and grant-reduction sanction policies result in a very similar financial penalty to the family (the grant is reduced); however, under a grant-reduction policy sanctioned adults were always included in the federal work participation rate calculation. Under an adult-removed policy they were not until federal fiscal year 2007. Under current federal regulations, even adults removed from the case must be included in the rate calculation. Therefore, we use the grant-reduction sanction to characterize California's policy in our simulations as it matches California's current policy under current federal rules.

We characterize states as having no time limit, a grant-reduction time limit, or a grant-elimination time limit (the entire family is ineligible if an aided adult reaches the time limit). California has a grant-reduction time limit.

Table A.2 reports the distribution of sanction and time limit policies across the 50 states in fiscal year 2005. For sanctions, California is one of 12 states with a policy of removing the adult

from the case. Another three states reduce the family's grant. Almost half of states (23) use a gradual grant elimination, increasing the size of the financial penalty to the family over time if the parent remains out of compliance. Over 20 percent (12 states) immediately eliminate the family's grant if an adult is sanctioned.

Table A.2
State sanction and time limit policies

| Policy | Number of states in FY 2005 |
|---------------------------------------------------|----------------------------------------|
| Work-related sanctions | |
| Adult removed | 12 |
| Grant reduction | 3 |
| Gradual grant elimination | 23 |
| Immediate grant elimination | 12 |
| Welfare time limits | |
| None | 5 |
| Grant reduction | 4 |
| Grant elimination | 41 |
| Extended if meeting work requirement ⁵ | 8 |

SOURCE: Urban Institute, Welfare Rules Database.

NOTES: Recipients in Arizona faced a full-family time limit, but had not reached it by the end of FY 2005 because the state switched from a 24-month adult to a 60-month full-family policy in October 2002. We classify states as having no time limit if their policy is to extend all recipients who reach the time limit.

California is one of four states that removes the adult from the case, but continues the children on assistance, if the adult reaches the time limit. Five states impose no time limit and the rest (41 states) eliminate the family's grant if the adult reaches the time limit. Out of the 45 states that impose a time limit, eight allow the entire grant to continue to be paid if the adult is in compliance with work requirements.

Table A.3 lists, and provides sources for, the entire set of independent variables included in the models that underlie the estimation results presented in the body of the report.⁶ The

⁵ States adopted this policy in addition to either a grant reduction or grant elimination time limit.

variables in the last section of Table A.3 (entitled “Demographic characteristics”) are included in the simulation described in Section 2 of the report. The variables in the first and second sections of Table A.3 (entitled “TANF policy: Work-related sanctions” and “TANF policy: Time limits”) are included in the simulations described in Sections 5 and 6 of the report.

Listed in the “TANF Program Characteristics” section of Table A.3 are other characteristics of sanction and time- limit policies that we also include in the models to capture important details of the policies. In particular, these additional controls adjust for the possibility that states with nominally severe policies relax them in practice by their use of exemptions (or the opposite, for states with less severe policies).

**Table A.3
Independent variables**

| Variable description | Source |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| TANF policy: Work-related sanctions | |
| Grant reduction, adult removed, gradual grant elimination, or immediate grant elimination | Urban Institute, Welfare Rules Database, Burke and Falk, 2001; Crouse, 1999 anf.urban.org |
| TANF policy: Time limits | |
| No time limit, grant reduction, or grant elimination | Urban Institute, Welfare Rules Database anf.urban.org |
| Extension if meeting work requirement | Urban Institute, Welfare Rules Database anf.urban.org |
| TANF policy: Financial incentives to combine work and welfare⁷ | |
| Maximum benefit for a family of three with no earnings, adjusted to reflect state cost-of-living differences | Urban Institute, Welfare Rules Database anf.urban.org |
| Maximum earnings for initial eligibility for a family of three, adjusted to reflect state cost-of-living differences | Urban Institute, Welfare Rules Database anf.urban.org |

⁶ We exclude the District of Columbia from the analyses because the variables we use to characterize states’ political climates and government transfers are missing for D.C.

⁷ The cost-of-living adjustment referred to in this section of the table is a state-specific constant. We base it on the National Academy of Sciences recommendation for state-level adjustments to the federal poverty threshold (Citro and Michael, 1995). The adjustment assumes that housing costs vary by state and account for 44 percent of the average poverty budget. All other costs are assumed constant across states. For housing costs, we use the U.S. Department of Housing and Urban Development’s estimates of the fair-market rent for a two-bedroom apartment in 2003 (www.huduser.org/datasets/fmr.html).

| Variable description | Source |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Earnings in month 1 of benefit receipt at which the benefit for a family of three would equal \$0, adjusted to reflect state cost-of-living differences | Urban Institute, Welfare Rules Database anf.urban.org |
| Earnings in month 13 of benefit receipt at which the benefit for a family of three would equal \$0, adjusted to reflect state cost-of-living differences | Urban Institute, Welfare Rules Database anf.urban.org |
| Other policies | |
| Child-care guaranteed to TANF recipients complying with program rules | National Child Care Information Center www.nccic.org/pubs/stateplan/stateplan-intro.html |
| Maximum state EITC benefit, adjusted to reflect state cost-of-living differences | Center on Budget and Policy Priorities and State Tax Offices cbpp.org |
| Minimum wage, adjusted to reflect state cost-of-living differences ⁸ | Neumark and Wascher (2007) - |
| TANF program characteristics | |
| Exempted from time limit while sanctioned | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempted or extended from time limit if unit head is elderly | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempted or extended from time limit if caring for young child | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempted or extended from time limit if ill or incapacitated or caring for ill child or relative | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempted or extended from time limit if receiving alcohol, drug, or mental health treatment | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempted or extended from time limit if victim of domestic violence | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempted or extended from time limit if lacking job skills | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempted or extended from time limit if support services not available | Urban Institute, Welfare Rules Database anf.urban.org |
| Time limit is three years or less | Urban Institute, Welfare Rules Database anf.urban.org |
| Time limit is periodic or intermittent | Urban Institute, Welfare Rules Database anf.urban.org |
| Conciliation process adhered to before first sanction imposed | Urban Institute, Welfare Rules Database anf.urban.org |
| Activities and required participation hours vary by adult education or skills | Urban Institute, Welfare Rules Database anf.urban.org |
| Required hours of participation vary by age of youngest child | Urban Institute, Welfare Rules Database anf.urban.org |
| Required hours of participation are determined on a case-by-case basis | Urban Institute, Welfare Rules Database anf.urban.org |

⁸ This cost-of-living adjustment is the same one used earlier in the table (in the “TANF policy: Financial incentives to combine work and welfare” section).

| Variable description | Source |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required hours of participation is rules based (vs. at caseworker discretion) | Urban Institute, Welfare Rules Database anf.urban.org |
| English as a second language allowed as a work activity | Urban Institute, Welfare Rules Database anf.urban.org |
| Counseling allowed as work activity | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempt from work requirements if ill | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempt if caring for an ill relative | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempt if parent is a minor | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempt if parent is a minor attending school | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempt if elderly | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempt if pregnant | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempt if child care not available | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempt if victim of domestic violence | Urban Institute, Welfare Rules Database anf.urban.org |
| Exempt if caring for a child less than 1 month old, 1-12 months of age, or 13 months and older | Urban Institute, Welfare Rules Database anf.urban.org |
| TANF applicants can be offered a lump-sum "diversion" payment in lieu of welfare | Urban Institute, Welfare Rules Database anf.urban.org |
| Work participation waiver in effect | OFA, Work Participation Rate memoranda www.acf.hhs.gov/programs/ofa/particip/indexparticip.htm |
| Economy | |
| Unemployment rate x100 | Local Area Unemployment Statistics www.bls.gov/lau |
| Total per capita employment | Quarterly Census of Employment and Wages www.bls.gov/cew |
| Twentieth percentile wage | Current Population Survey www.census.gov/cps |
| Per capita personal income | US Bureau of Economic Analysis www.bea.gov |
| Per capita dividends, interest and rent | US Bureau of Economic Analysis www.bea.gov |
| Average earnings per job | US Bureau of Economic Analysis www.bea.gov |
| Percent employment in manufacturing | US Bureau of Economic Analysis www.bea.gov |

| Variable description | Source |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Percent employment in professional services | US Bureau of Economic Analysis www.bea.gov |
| Percent employment in educational services | US Bureau of Economic Analysis www.bea.gov |
| Percent employment in food and accommodation services | US Bureau of Economic Analysis www.bea.gov |
| Per capita taxable income | State Higher Education Executive Officers www.sheeo.org |
| Political climate and government characteristics | |
| Democratic governor | Klarner (2003); dataset updated on web www.ipsr.ku.edu/SPPQ/journal_datasets/klarner.shtml |
| Legislative professionalism | Peeverill Squire, University of Iowa - |
| Per capita tax revenues | State Higher Education Executive Officers www.sheeo.org |
| Per capita full-time government employees | U.S. Bureau of Economic Analysis www.bea.gov |
| Per capita government payroll (full-time employees) | U.S. Bureau of Economic Analysis www.bea.gov |
| Demographic characteristics | |
| Percent non-citizen | Current Population Survey (merged outgoing rotation group) www.census.gov/cps |
| Percent elderly | Current Population Survey (merged outgoing rotation group) www.census.gov/cps |
| Percent of households headed by single mothers, 16-46 (1998-2005 state mean) | Current Population Survey (March demographic supplement) www.census.gov/cps |
| Percentage of single mothers, 25-46 with less than a high school, high school, and more than high school education (1998-2005 state mean) | Current Population Survey (March demographic supplement) www.census.gov/cps |
| Percentage of adults 25-46 with less than a high school, high school, and more than high school education | Current Population Survey (merged outgoing rotation group) www.census.gov/cps |
| Percent Asian/Other, non-Hispanic Black, non-Hispanic White, and Hispanic | Current Population Survey (merged outgoing rotation group) www.census.gov/cps |
| Percent of births to unwed mothers | Vital Statistics www.cdc.gov/nchs/VitalStats.htm |
| Median family income | U.S. Bureau of the Census www.census.gov/hhes/www/saipe |

Methodology and Detailed Model Results

We estimate regression models of the effects of the policies of interest, fiscal year fixed effects, and a rich set of state background characteristics (detailed in Table A.3) on the natural log of the work participation rate, the natural log of the per capita caseload required to meet work requirements, and the natural log of the per capita caseload meeting work requirements (Table A.4). The denominator we use is the number of women between the ages of 16 and 46 in the population. The estimates are robust to using the total state population as the denominator (results available from the first author upon request).

We use the policies that California currently has in place – grant-reduction sanction and having reached a grant reduction time limit – as the omitted categories across all specifications.

Columns 1-3 of Table A.4 present estimates using our preferred specification. The first column contains estimates of policy effects on the rate, the second estimates for the caseload required to be counted in the rate calculation (the denominator of the rate), and the third estimates for the caseload meeting the rate (the numerator of the rate). Note that a significant change in the rate is typically driven by a large shift in either the numerator or the denominator. While it would be possible for a significant change in the rate to be driven by insignificant changes in the numerator and denominator with opposite signs, we do not see this in our models. We take the parameter estimates for immediate grant elimination sanctions as providing evidence of the credibility of our results overall. This is the most stringent sanction policy, and it has the largest effects on the caseload failing to meet the rate and on the rate itself, effects that are statistically larger than those for gradual full-family sanctions.⁹

⁹ We would not expect estimates for reaching a full-family time limit to be larger than those for reaching a partial-family limit because in both cases (under the old rules) time-limited adults were dropped from the work participation rate calculation.

Our preferred estimates do not include state fixed effects, the standard approach when estimating the effects of policy changes on repeated cross-sections. However, our data begin in FY 1998; states implemented their TANF programs between October 1996 and January 1998. Some states made the most substantial changes to their welfare programs even earlier under waivers to AFDC program rules. Thus, including state fixed effects results in estimates that exclude changes made by most states. Only one state changed its time limit policy between FY 1998 and 2005. While six states adopted gradual full-family sanctions between FY 1998 and 2005, seventeen adopted them in 1997 or earlier. Nevertheless, in columns 4-6 of Table A.4 we present estimation results that include state fixed effects. Not surprisingly, we obtain imprecise estimates of the time limit parameters. In the case of sanction policies, we obtain two coefficients significant at the .05 level. The results suggest that a gradual grant elimination sanction *reduces* the caseload meeting work requirements (although with no effect on the overall work participation rate). Since the model is identified by states that switched policies, a natural interpretation of the perverse estimate is that states with low work participation rates who were seeking improvements changed to gradual full-family sanction policies. The second significant effect implies, similar our preferred model, that an immediate grant elimination sanction reduces the caseload failing to meet requirements (although the estimated effect on the overall work participation rate is significant only at the .10 level).

Columns 7-12 in Table A.4 present the results of two robustness checks. First, we exclude cases in SSPs because, as discussed above, SSP data may be of lower quality than TANF caseload data. Doing so does not substantially change the estimates of grant elimination sanctions, although gradual grant elimination sanctions are less precisely estimated and are no longer significant. Second, we drop fiscal years 1998 and 1999, which were years when the TANF

Emergency Data Report was in effect. Doing so reduces the significance of gradual full-family sanctions from the 0.05 to the 0.10 level, although again the estimated coefficient changes little.

Although we have little confidence in the estimates, for completeness we also present model results using the Two Parent rate as the outcome (see Table A.5). The number of observations is 357, not 400, because in some years states had no adults in two-parent families that were required to be counted in the federal rate calculation. We do not perform the robustness check of dropping cases in SSPs because about half of all two-parent families were in SSPs. In 2005, 31 states had SSPs.

The estimates imply implausibly large policy effects. While they are in the same direction in the case of time limits, the results for sanction policies are difficult to interpret. In states that included two-parent cases in their TANF caseload, two-parent sample sizes are small, thus decreasing the precision of the work participation estimates. In addition, the estimates may be driven by large effects in states that have few two-parent cases (and in some years, no two-parent cases).¹⁰

¹⁰ We note that if we restrict the observations in the All Families rate regressions (reported in Table A.4) to be the same states in the same years as used in the Two Parent rate model, having no time limit continues to increase the work participation rate by a statistically significant 51 percent and gradual and immediate grant-elimination sanctions also increase the rate by 36 and 55 percent, respectively (although the former estimate is significant only at the 10 percent level). Full results are available from the first author upon request.

Table A.4
Effects of state TANF policies on work participation, all families rate

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|--------------------------------------|-------------------------|----------------------------------------|-------------------------------|-------------------------|----------------------------------------|-------------------------------|-------------------------|----------------------------------------|-------------------------------|-------------------------|----------------------------------------|-------------------------------|
| | Work participation rate | Caseload required to meet requirements | Caseload meeting requirements | Work participation rate | Caseload required to meet requirements | Caseload meeting requirements | Work participation rate | Caseload required to meet requirements | Caseload meeting requirements | Work participation rate | Caseload required to meet requirements | Caseload meeting requirements |
| Time limits | | | | | | | | | | | | |
| Grant elimination (reached) | 0.14 (0.20) | 0.023 (0.22) | 0.16 (0.20) | -0.11 (0.23) | 0.38 (0.24) | 0.27 (0.32) | 0.26 (0.25) | 0.14 (0.22) | 0.41* (0.21) | 0.28 (0.25) | 0.11 (0.22) | 0.39+ (0.22) |
| Extended if meeting work requirement | 0.14 (0.11) | -0.11 (0.12) | 0.035 (0.13) | -0.11 (0.077) | 0.024 (0.11) | -0.087 (0.14) | 0.027 (0.10) | -0.059 (0.12) | -0.032 (0.13) | 0.038 (0.098) | -0.050 (0.12) | -0.012 (0.12) |
| No time limit | 0.45* (0.20) | 0.25 (0.27) | 0.70* (0.23) | -3.22 (2.30) | 1.60 (2.02) | -1.61 (2.75) | 0.54* (0.26) | 0.37 (0.29) | 0.90* (0.26) | 0.64* (0.24) | 0.24 (0.30) | 0.88* (0.29) |
| Grant reduction (implemented) | 0.41* (0.20) | -0.19 (0.16) | 0.22 (0.24) | -0.010 (0.17) | -0.069 (0.18) | -0.079 (0.32) | 0.037 (0.14) | -0.044 (0.16) | -0.0067 (0.15) | 0.079 (0.13) | -0.071 (0.16) | 0.0076 (0.15) |
| Grant elimination (implemented) | 0.27 (0.16) | -0.064 (0.20) | 0.21 (0.17) | -0.18 (0.25) | 0.46+ (0.23) | 0.28 (0.31) | 0.35 (0.22) | 0.070 (0.23) | 0.42* (0.19) | 0.35 (0.22) | 0.072 (0.24) | 0.42* (0.20) |
| Work-related sanctions | | | | | | | | | | | | |
| Gradual grant elimination | 0.41* (0.17) | -0.30+ (0.17) | 0.11 (0.13) | -0.18 (0.11) | -0.18 (0.11) | -0.36* (0.14) | 0.35 (0.22) | -0.34 (0.19) | 0.0012 (0.091) | 0.39+ (0.22) | -0.41* (0.19) | -0.020 (0.093) |
| Immediately grant elimination | 0.67* (0.21) | -0.71* (0.23) | -0.040 (0.20) | 0.33+ (0.19) | -0.32* (0.16) | 0.0068 (0.25) | 0.63* (0.28) | -0.93* (0.26) | -0.31 (0.18) | 0.67* (0.28) | -1.02* (0.27) | -0.34+ (0.18) |
| Adult removed | 0.18 (0.20) | -0.19 (0.22) | -0.0076 (0.18) | -0.42+ (0.23) | -0.11 (0.18) | -0.53+ (0.27) | 0.037 (0.30) | -0.26 (0.26) | -0.23 (0.18) | 0.085 (0.29) | -0.28 (0.27) | -0.20 (0.18) |
| R-squared | 0.70 | 0.87 | 0.84 | 0.82 | 0.95 | 0.93 | 0.69 | 0.90 | 0.85 | 0.79 | 0.90 | 0.88 |
| Observations | 400 | | | 400 | | | 400 | | | 300 | | |
| State-specific controls | X | | | X | | | X | | | X | | |
| State fixed effects | | | | X | | | | | | | | |
| Fiscal year fixed effects | X | | | X | | | X | | | X | | |
| Types of cases included | TANF/SSP | | | TANF/SSP | | | TANF | | | TANF/SSP | | |
| Years | FY 98-05 | | | FY 98-05 | | | FY 98-05 | | | FY 00-05 | | |

SOURCE: Authors' calculations from TANF and SSP Data Reports and the variables described in Table A.3.

NOTES: Columns 1 and 2 contain the estimates discussed in the body of the report. All dependent variables are in natural logs, and caseloads are divided by females 16-46 in a state and year. All models are estimated on 8 fiscal year observations for each of 50 states (we exclude the District of Columbia). State-specific controls are listed in Table A.3. Models are estimated with robust standard errors corrected for state-level clustering. Complete model results available from the first author upon request.

Significance: + = .10; * = .05

Table A.5
Effects of state TANF policies on work participation, two-parent rate

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|-------------------------|---------------------------------------------|-------------------------------|-------------------------|---------------------------------------------|-------------------------------|
| | Work participation rate | Caseload required to meet work requirements | Caseload meeting requirements | Work participation rate | Caseload required to meet work requirements | Caseload meeting requirements |
| Time limits | | | | | | |
| Grant elimination (reached) | 0.1017 (0.4041) | 0.21 (0.47) | 0.3347 (0.6387) | 0.1786 (0.4868) | 0.35 (0.37) | 0.5477 (0.7809) |
| Extension if meeting work requirement | -0.0250 (0.2752) | 0.18 (0.21) | 0.1511 (0.3548) | -0.0705 (0.3888) | 0.24 (0.20) | 0.0963 (0.5714) |
| No time limit | 2.0218 (0.5884)* | 0.42 (0.62) | 3.0137 (1.0989)* | 2.9305 (0.8434)* | -0.036 (0.60) | 3.8667 (1.6023)* |
| Grant reduction (implemented) | 0.5747 (0.5867) | -0.35 (0.31) | 0.0879 (0.7054) | 0.5101 (0.8627) | -0.060 (0.26) | 0.5423 (1.3580) |
| Grant elimination (implemented) | 0.3964 (0.3637) | 0.19 (0.44) | 0.6771 (0.6137) | 0.4402 (0.5285) | 0.33 (0.40) | 0.9232 (0.8397) |
| Work-related sanctions | | | | | | |
| Gradual grant elimination | 0.2457 (0.2746) | -0.81 (0.48) | -0.6914 (0.6965) | 0.2648 (0.3927) | -0.83 (0.50) | -0.6295 (0.9455) |
| Immediate grant elimination | -0.1186 (0.4917) | -1.50* (0.51) | -2.1341 (1.0451)* | -0.2984 (0.8471) | -1.78* (0.54) | -2.7048 (1.5801)+ |
| Adult removed | -0.5926 (0.3132)+ | -1.22* (0.54) | -1.9772 (0.7639)* | -0.4978 (0.5713) | -0.72 (0.50) | -1.2943 (1.0722) |
| R-squared | 0.49 | 0.85 | 0.67 | 0.58 | 0.90 | 0.69 |
| Observations | 357 | | | 278 | | |
| State-specific controls | X | | | X | | |
| Fiscal year fixed effects | X | | | X | | |
| Years | FY 98-05 | | | FY 00-05 | | |

SOURCE: Authors' calculations from TANF and SSP Data Reports and the independent variables described in this Appendix.

NOTES: All dependent variables are in natural logs, and caseloads are divided by females 16-46 in a state and year. All models are estimated on up to 8 fiscal year observations for each of 50 states (we exclude the District of Columbia). Years in which a state had no cases required to be counted in the Two Parent rate are dropped. State-specific controls are listed in Table A.3. Models are estimated with robust standard errors corrected for state-level clustering. Complete model results available from the first author upon request.

Significance: +=.10; *=.05

Robustness of Methodological Approach

A central concern about the approach we take to estimate the effects of policies on the work participation rate is that unobserved state characteristics may bias the estimated effects of sanction and time-limit policies. In this section, we test the robustness of our approach to resolving this concern.

A typical method used by researchers is to “difference out” such unobserved characteristics by including an indicator variable for each state that captures all time-invariant background state characteristics that are difficult to measure or even identify. This approach is unavailable to us because the data on work participation rates begin simultaneously with states’ implementation of their TANF programs. Thus, as we discussed in the previous section, including state-level indicators sweeps out effects of the policies of interest.

For this reason, the approach we take in this report is to measure important state political, demographic, economic, and TANF program characteristics that are likely candidates for biasing the policy estimates. We also include fiscal year indicator variables to flexibly capture nationwide changes that affected work participation.

As a robustness check on this approach, we use state-level official welfare caseloads that span both the TANF and the AFDC (roughly, pre-1997) periods.¹¹ With these data, we can estimate models of caseload size using the identical approach we use to estimate models of the work participation rate. That is, we can use both the control variables and year indicators we used in the models presented in the report. We can then add state indicators. The results of this comparison are presented in Table A.6. If the control variables adequately capture state differences that are correlated with the

¹¹ These data include both TANF and SSP cases.

outcome of interest, the estimates in the first two columns should be substantially the same.

The one difference between the specifications in Table A.4, columns 1-3 and Table A.6, column 1, is that we add two indicator variables to mark the date of implementation of each state's TANF program, as well as any AFDC waiver program that pre-dated it. However, if we exclude these two variables, the estimates in columns 1 and 2 are not meaningfully different.

Turning to Table A.6, the pattern of significance across the two sets of policy variables is identical across columns 1 and 2, and the substantive size of the significant estimate for immediate full-family sanctions is quite similar across the columns.¹² These results show that the addition of flexible state-specific, but non-time varying, controls does not wash out policy effects. We thus increase our confidence that the approach we take in the report adequately controls for unobserved state characteristics that are correlated with the policies and outcomes of interest. In column 3 we present estimates from a model that excludes the control variables included in columns 1 and 2. In other words, this is the conventional differences-in-differences specification. The estimates in column 3 provide some evidence that state-level, time-varying factors are correlated with welfare policies. Reaching full family time limits becomes significant in the conventional difference-in-differences specification as does the maximum benefit for a

¹² It is unrealistic to expect that the substantive size of the coefficients in this table should match the coefficients in column 2 of Table A.4. First, these caseloads include child-only, or zero-parent cases. Such cases are likely not affected by the policy changes brought by TANF and the predecessor changes under AFDC waivers. Thus, the effects we estimate in Table A.6 are relatively diluted. Second, these regressions include the earliest implementation of TANF policies (roughly, 1996 and 1997). Thus, policy effects may be diluted because they are averaged over years in which many states were ramping up their programs and years in which the programs were fully in place. Danielson and Klerman (2009) find strong evidence of gradual policy phase-in.

family of three with no earnings (last estimate not shown in table). The time-limit estimate becomes insignificant if we add back in variables describing the details of states' time-limit extension and exemption rules (estimate not shown in table).

Table A.6
Policy effects on the TANF and SSP caseload

| | (1) | (2) | (3) |
|---------------------------------------|----------------------|----------------------|----------------------|
| Time limits | | | |
| Grant elimination (reached) | 0.0016 (0.0873) | -0.0866 (0.0883) | -0.1323 (0.0629)* |
| Extension if meeting work requirement | -0.0932 (0.0831) | -0.0442 (0.0642) | -0.0671 (0.0680) |
| No time limit | 0.0210 (0.1225) | 0.5523 (0.3558) | -0.3400 (0.2274) |
| Grant reduction (implemented) | -0.0100 (0.1036) | -0.0609 (0.0955) | -0.0464 (0.0837) |
| Grant elimination (implemented) | -0.0670 (0.0714) | -0.0670 (0.0661) | -0.0868 (0.0560) |
| Work-related sanctions | | | |
| Gradual grant elimination | -0.0621 (0.0897) | -0.0199 (0.0766) | -0.1225 (0.0843) |
| Immediate grant elimination | -0.3217 (0.0860)* | -0.3016 (0.0790)* | -0.2877 (0.1244)* |
| Adult removed | -0.0456 (0.0834) | -0.0409 (0.0736) | -0.0471 (0.0880) |
| Fiscal year fixed effects | X | X | X |
| State fixed effects | | X | X |
| State-specific controls | X | X | |
| Major AFDC waiver/TANF policies | X | X | X |
| Years | FY 90-05 | FY 90-05 | FY 90-05 |
| Observations | 800 | 800 | 800 |
| R-squared | 0.89 | 0.95 | 0.90 |

SOURCE: Authors' calculations from ACF caseload data and independent variables as described in Table A.3.

NOTES: Major AFDC waiver/TANF policies are maximum benefit, maximum earnings at application, maximum earnings at months 1 and 13 to retain eligibility, diversion, and indicators for implementation of other waiver and TANF policies. The dependent variable across all columns is the natural log of the total caseload (AFDC and then the combined total of TANF and SSP cases) divided by females ages 14-46 in a state and year. All models are estimated on 16 years of observations for each of 50 states. Standard errors are corrected for state-level clustering. Complete model results are available from the first author upon request.

Significance: * = .05

2. Analysis of Family Economic Circumstances

Data: Dependent Variables

Current Population Survey

We construct family well-being measures using the Annual Social and Economic Supplement (also known as the March supplement) to the Current Population Survey (CPS). We include in our sample only single women who had not completed a bachelor's degree and who were between the ages of 16 and 46 at the time of the survey for the time periods 1990-1996 and 1999-2005. We exclude 1997 and 1998 because those were the initial implementation years of TANF, and any policy effects during these years are likely diluted.

Excluding the District of Columbia, this gives us a total sample size of 212,023. The state with the smallest sample of single women ages 16-46 is Arkansas. Its sample ranged between 117 and 206 over the period 1990-2005, excluding 1997-1998. The state with the largest sample is California, with a yearly sample of between 1,106 and 1,799.

We construct four main outcome variables: (1) an indicator of whether the woman's family income was below the federal poverty line; (2) an indicator of whether a woman worked using the reported number of annual hours worked;¹³ (3) the natural log of the woman's reported annual earnings; (4) the natural log of the total annual income of the household in which the woman and her children lived. CPS definitions of family, household, and income can be found at

www.census.gov/population/www/cps/cpsdef.html.

¹³ We obtained similar results using an indicator of whether the woman worked in the week before the survey.

Data: Independent Variables

In the models of family economic circumstances we use all the variables in Table A.3, except for the state-level demographic characteristics listed in the last section of the table. The individual-level variables that we include in their stead are listed in Table A.7.

Table A.7
Additional independent variables used in the analysis of family economic conditions

| Variable description |
|------------------------------------------------------------------------------------|
| Any children under age 6 and under age 18 |
| Number of children under age 6 and under age 18 (minus 1) |
| Racial/ethnic categories: non-Hispanic white, non-Hispanic non-white, and Hispanic |
| Age categories: 16-24, 25-29, 30-34, 35-39, 40-46 |
| Education categories: high school dropout, high school graduate, some college |
| Marital status: never married, divorced, widowed |
| Whether pregnant |
| Amount of unearned Income |
| Whether lives in central city |

SOURCE: Annual Social and Economic Supplement to the Current Population Survey.

NOTES: Sample limited to single women between the ages of 16 and 46 who have not obtained a bachelor's degree.

Methodology and Detailed Model Results

We examine four measures of the economic well-being of single mothers: family poverty, any hours of employment in the last year, annual earnings, and household income.

We estimate probit models for poverty and employment, and linear models for the natural log of annual earnings and the natural log of household income. The models include the policy characteristics and independent variables described in Table A.3 and add the variables listed in Table A.7. The policy effects are estimated using individual-level variables from the CPS and a difference-in-difference-in-differences approach. We include state and year fixed effects to net out national changes over time that affected poverty, employment, and income among single women, as well as constant, state-

specific factors associated with these outcomes. Finally, we estimate outcomes for single mothers net of the effect on single women without children because TANF policies should have little or no effect on the latter, control group.¹⁴ In the case of the estimates obtained using a non-linear model, we compute the marginal effects listed in Table 5.1 and 6.1 using mean values for 2003-2005 in California.

Table A.8 provides estimates for sanction and time-limit policies.

Table A.8
Effects of state TANF policies on economic conditions of single-mother families

| | (1) | (2) | (3) | (4) |
|---------------------------------------|----------------------|------------------------------|----------------------|----------------------|
| | Income below poverty | Positive annual hours worked | Log earnings | Log household income |
| Time limits | | | | |
| Grant elimination (reached) | 0.0452 (0.051) | -0.03 (0.0486) | 0.0067 (0.0327) | -0.0314 (0.0347) |
| Extension if meeting work requirement | -0.0153 (0.03) | 0.0385 (0.0333) | 0.0432 (0.0288) | 0.0298 (0.0189) |
| No time limit | 0.0469 (0.0368) | -0.0258 (0.049) | -0.0617+ (0.0338) | 0.0055 (0.0342) |
| Grant reduction (implemented) | -0.1396* (0.0504) | -0.097 (0.0621) | -0.1384* (0.0503) | 0.0508 (0.0366) |
| Grant elimination (implemented) | 0.0073 (0.0436) | 0.0307 (0.0533) | -0.0358 (0.0425) | -0.0106 (0.0282) |
| Work-related sanctions | | | | |
| Gradual grant elimination | -0.0983* (0.0342) | 0.0048 (0.0456) | 0.0095 (0.0372) | 0.038 (0.0322) |
| Immediate grant elimination | -0.137* (0.033) | 0.0668 (0.0452) | -0.0238 (0.0296) | 0.0794* (0.0252) |
| Adult removed | -0.0457 (0.0447) | -0.0304 (0.0532) | -0.0409 (0.0419) | 0.0258 (0.0355) |
| Observations | 212,023 | 212,023 | 149,326 | 210,086 |
| R-squared | 0.1369 | 0.1594 | 0.3811 | 0.2339 |

SOURCE: Authors' calculations from Annual Social and Economic Supplement to the CPS and other data as described in Table A.3.

NOTES: All models are estimated for 1990 to 1996 and from 1999 to 2005. Models include state and year fixed effects as well as variables listed in Tables A.3 and A.7. All variables are interacted with single mother status, and the reported coefficients are net of the effects on single women without children. Standard errors are corrected for state-level clustering. Full results are available from the first author upon request.

Significance: + =.10; * = .05

¹⁴ We also estimate models using married women as the control group, and obtain similar results. The reduction in poverty due to gradual full-family sanctions is, however, not significant in this specification. Complete model results are available from the first author upon request.