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## AFDC, SSI, and Welfare Reform Aggressiveness: Caseload Reductions Versus Caseload Shifting

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# **AFDC, SSI, and Welfare Reform Aggressiveness: Caseload Reductions vs. Caseload Shifting\***

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## **Abstract**

Welfare reform has made receipt of cash benefits more difficult and less attractive for single mothers. We examine whether reforms of AFDC affected caseloads of another program - Supplemental Security Income (SSI). We exploit state variation in welfare reform over time, and find that female-headed households in states aggressively pursuing welfare reform were 21.6 percent more likely to receive SSI. This implies that a decrease in caseloads in one program cannot be interpreted as an equal-sized decrease in the number of families receiving public assistance. In addition, our results have policy implications for the well-being of families affected by welfare reform time limits.

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## I. Introduction

Efforts at welfare reform over the past decade, including the imposition of work requirements, sanctions for noncompliance, and time limits, have made receipt of welfare benefits both more difficult and less attractive for single mothers and their children. During the mid- to late- 1990s, caseloads in the Aid to Families with Dependent Children (AFDC) program declined rapidly, as illustrated in Figure 1. Between January 1993 and January 1999, caseloads dropped by 49 percent.<sup>1</sup> Recent literature provides an ongoing debate over what portion of this drop can be attributed to welfare reform versus the strong economy.<sup>2</sup>

Regardless of the causal factors behind this dramatic decrease in caseloads, it could be misleading to interpret the reduction in AFDC caseloads as an equal-sized decrease in the number of families receiving public assistance. The Supplemental Security Income (SSI) Program provides means-tested income support to disabled individuals. The population served by this program has many similarities to AFDC populations in terms of employment history and educational status. There is also evidence of high disability rates among both women and children in AFDC families.<sup>3</sup> Thus, it is possible that some of those leaving the AFDC rolls have simply moved on to SSI.

There have always existed both individual-level and state-level incentives for shifting from AFDC to SSI. For individuals, the SSI program pays higher benefits. For states, the SSI program is financed entirely by the federal government, as opposed to the AFDC program, which shares costs between the state and the federal governments. However, we might expect to see *increased* shifting after welfare reform. Individuals might choose to move to SSI, which places fewer restrictions on benefit receipt. And for political reasons, states have a greater incentive to decrease AFDC caseloads than to decrease SSI caseloads. This type of shifting has fiscal implications for both federal and state governments. In addition, it has implications for the well being of AFDC recipients faced with time limits or

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<sup>1</sup> Passage of the Personal Responsibility and Work Opportunity Reconciliation Act in 1996 eliminated the AFDC program and replaced it with Temporary Assistance for Needy Families (TANF). Figure 1 presents AFDC caseloads through 1996, and TANF caseloads after that point.

<sup>2</sup> See Blank (2001), Council of Economic Advisers (1997, 1999), Levine and Whitmore (1998), Ziliak and Figlio (1999), and Wallace and Blank (1999).

other sanctions under welfare reform. If shifting of families from AFDC to SSI exists, the negative effects of these time limits on women with disabilities will be, to some extent, mitigated.

If such shifting is taking place, we expect to see an increase in SSI receipt among single mother families in states with greater welfare reform intensity. Figure 2 plots SSI participation rates at the national level for various demographic groups. Female-headed households experienced the largest percentage point increase in SSI participation, almost doubling from 2.28% to 4.18% between 1990 and 1996. However, other groups experienced increases over this period as well. In this paper, we take a more rigorous approach to examine whether the intensity of state welfare reform efforts prior to the passage of the Personal Responsibility and Work Reconciliation Act (PRWORA) of 1996 is associated with a significant increase in SSI caseloads among families headed by a single mother.

We use repeated cross-section data from the Current Population Survey March Supplement to examine changes in the probability that a woman or her children receive SSI. We find that individuals from the AFDC-eligible population in states aggressively pursuing welfare reform are 21.6 percent more likely to participate in the SSI program.

## II. Why might welfare reform affect SSI caseloads?

A public assistance program provides eligible families with some financial benefit, at some cost of program participation. This suggests that an individual's decision to shift from one program to another will depend on the relative benefits and costs associated with those programs. Even if relative benefit levels remain constant, a change in the relative cost of participation between the two programs should lead to a shift in participation.

Two major public assistance programs for low-income individuals existed during the 1980s and 1990s. The AFDC program provided means-tested benefits to single parents and their children.<sup>4</sup> Efforts at reforming the welfare system were expanded beginning in the early

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<sup>3</sup> See Loprest and Acs (1995), and Acs and Loprest (1999).

<sup>4</sup> Two-parent families were also eligible for AFDC benefits through the AFDC-Unemployed Parents program. State participation in the AFDC-UP program was mandated beginning in 1990. However, AFDC-UP caseloads and expenditures remained a small share of total caseloads and expenditures. In 1995, only 6.9% of the total

1990s, as states were granted federal waivers to experiment with their welfare programs.<sup>5</sup> These waivers granted permission to incorporate time limits, work requirements, family caps, higher earnings disregards, and stronger sanctions for noncompliance with rules. As of 1996, 31 states had been granted some type of welfare waiver. Several recent studies find evidence that waivers played a role in decreasing AFDC caseloads over this time period, but that the strong economy was responsible for a greater share of the reduction.<sup>6</sup>

The Supplemental Security Income (SSI) program is a means-tested federal program that makes monthly payments to individuals who have limited income and resources if they are age 65 or older, blind or have another disability. Disabled SSI recipients include both adults who have a work-limiting disability, and children who suffer limitations that prevent them from pursuing age-appropriate activities.

There have always been financial incentives for individuals to shift from AFDC to SSI, as the SSI program pays higher benefits. To illustrate the relative incentives, consider a single mother with one child and no earnings, living in Maryland in 1996. As an AFDC recipient, she received a monthly benefit of \$292. If she moved to SSI, she received a \$470 monthly federal benefit.<sup>7</sup> In addition, her child became an AFDC "child only case,"<sup>8</sup> and received benefits of \$165 per month. The total monthly benefit she would have received under SSI was \$343 higher than the benefit she received as an AFDC recipient. Alternatively, identification of her *child* as disabled for SSI purposes would have generated a similar financial gain.

However, there are costs of participating as well. The application process for AFDC prior to welfare reform was relatively simple, and the requirements for benefits minimal. The application process for SSI includes a time-consuming disability determination process,

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AFDC caseload was comprised of AFDC-UP cases. These cases represented 10.1% of total AFDC expenditures. We discuss the implications of this program for our empirical results in Section IV.

<sup>5</sup> Several waivers were granted in the early 1980s, but it was not until the early to mid-1990s that the major, statewide waivers that are a focus of this paper were approved and implemented. See Harvey et al (2000) and Council of Economic Advisers (CEA) (1999).

<sup>6</sup> See Blank (2001), CEA (1997, 1999), Levine and Whitmore (1998), Ziliak and Figlio (1999), and Wallace and Blank (1999).

<sup>7</sup> Although the federal benefit level is fixed, states are able to provide a supplement to SSI recipients at their discretion. Maryland does not supplement SSI benefits.

which requires medical evaluation.<sup>9</sup> Under the pre-welfare reform regime, for some individuals, the costs of participating in SSI likely outweighed the difference in benefit levels. However, as AFDC became increasingly restrictive, the individual calculus changed. The lack of time limits and work requirements in SSI shifts the relative costs of participating in the two programs, with SSI participation becoming relatively less burdensome. In addition, the sanctions and time limits imposed by welfare reform imply that movement of a child from AFDC to SSI is not as beneficial as moving the mother. If the child shifts, the family does receive more money, but the mother is still subject to high participation costs. If the mother shifts, those participation costs fall.

In addition to the incentives faced by individuals, political and budgetary incentives faced by states encouraged movement of AFDC families to the SSI rolls. AFDC benefits were financed partially by the federal government and partially by the state. SSI benefits (with the exception of optional state supplements) are financed entirely by the federal government. There was, therefore, a fiscal incentive for states to move families from AFDC to SSI. To illustrate the states' incentives, consider again the state of Maryland in the year 1996. For the single mother of one, the state paid 50 percent of her monthly AFDC benefit of \$292, or \$146. If the state moved her to SSI, it paid only \$82.50 (50 percent of the child-only AFDC benefit), since Maryland does not supplement SSI benefits. As with the individual-level incentives, this financial incentive always existed. However, with welfare reform came increasing political pressure to reduce AFDC caseloads. Because the SSI program was much less controversial, similar pressures to decrease SSI caseloads did not exist.

Although *incentives* for both individuals and states suggest that SSI caseloads might increase, the definition of disability for SSI eligibility appears to be a fairly objective standard. As a result, the disability determination process is also likely to constrain movements between AFDC and SSI. This would imply relative invariability of SSI caseloads. However, there are reasons why we might expect SSI caseloads to fluctuate even

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<sup>8</sup> The number of child-only AFDC cases rose by 90 percent between 1990 and 1994 (Blank, 2001).

<sup>9</sup> For a detailed description of the disability determination process, see Lahiri et al (1995).

if objective disability conditions remain fairly constant. First, as with most public assistance programs, SSI take-up rates are considerably less than 100 percent.<sup>10</sup> McGarry (1996) finds take-up rates of approximately 56% among the elderly SSI population. This implies that SSI participation rates could increase even if the underlying characteristics of the population remain unchanged. Second, there is some evidence that the self-reporting of disability is endogenous. Holding actual disability level constant, individuals may respond to changes in the programs that provide income maintenance to the disabled.<sup>11</sup> Thus, changes in economic circumstances or relative program incentives may result in changes in self-reported disability rates, leading to increases in SSI participation.

In addition, there is evidence of similarities between populations receiving SSI and AFDC. Loprest and Acs (1995) find evidence of high disability rates among AFDC recipients. Depending on the data source, between 16.6 and 20.1 percent of women receiving AFDC answered yes to the question, “Do you have a physical, mental, or other health problem that limits the kind or amount of work you can do?” Between 8.4 and 10.6 percent of female AFDC recipients reported a serious disability preventing one or all work-related functions. Since both AFDC and SSI are means-tested programs, recipients are also likely to be similar with regard to other characteristics, such as education and work experience.

Perhaps due to this overlap in potential populations, research suggests that there has been some movement of both adults and children between public assistance programs. Bound, et. al. (1998) find that the elimination of Michigan's General Assistance (GA) program, along with outreach efforts by state agencies, played an important role in increased SSI applications in the state. Garrett and Glied (2000) find that after the *Sullivan v. Zebley* Supreme Court decision liberalizing the disability standard for children, the states that had the highest increases in AFDC benefits showed lower increases in SSI caseloads than other states. Kubik finds that families eligible for more assistance from other programs are less

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<sup>10</sup> Hypotheses for this phenomenon of “non-participating eligibles” include the stigma of receiving public assistance, transaction costs of participation, and incomplete information about the availability of benefits. See Moffitt (1992) and Blank and Ruggles (1996).

<sup>11</sup> See Waidmann et al (1995), and Bound and Burkhauser (1999). Bound and Burkhauser observe that “...the decision to apply for disability program benefits is not purely a function of health but is also related to economic alternatives – work or alternative program eligibility” (page 2).

likely to apply for SSI (1999), and that states undergoing budgetary difficulties are more likely to show increases in child SSI caseloads relative to their AFDC population (1998). More recent evidence by Loprest (1999) suggests that 23 percent of non-working welfare leavers were receiving Supplemental Security Income.

This evidence that individuals and states respond to differential incentives in program benefits and costs suggests that the decrease in AFDC caseloads should be associated with an increase in SSI caseloads for those individuals most likely to be eligible for AFDC. We expect that states with more aggressive welfare reform should experience a larger increase in SSI caseloads among the relevant population -- single mothers and their children. This is the hypothesis explicitly tested in this paper.

### III. Data

We use data from the Current Population Survey (CPS) March Supplement from years 1988 through 1997 (corresponding to calendar years 1987 through 1996).<sup>12</sup> The CPS, like other Census data sources, does not identify who in the household is eligible for the SSI benefit. This means that SSI recipients in our sample include SSI mothers as well as SSI children under 15. This complicates the analysis, since, there have been changes in SSI regulations over time that affected children's rates of SSI participation, and children's rates of SSI receipt have increased dramatically over the 1990s (see Kubik, 1999). In the next section, we discuss how we deal with this complication.

Our sample consists of individuals over the age of 17 and under the age of 45. Summary statistics by demographic group can be found in Table 1a. Column 1 presents summary statistics for female-headed households, who are most likely to be affected by welfare reform. Columns 2 through 4 present summary statistics for three control groups expected to be less affected by welfare reform: married mothers, single women without children, and single men without children.

Table 1b compares sample means for AFDC and SSI recipients with all individuals.

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<sup>12</sup> Rupp and Stapleton (1995) suggest that the nature of the SSI program experienced a significant change beginning in the late 1980s.



Individuals who receive SSI benefits are more likely to be nonwhite than the full sample, and average 2.7 fewer years of education.<sup>13</sup> Table 1b also illustrates many similarities between the SSI population and the AFDC population. Like SSI recipients, AFDC recipients are less likely to be white, and are also more likely to be Hispanic. On average they have 1.9 fewer years of education than the general population. AFDC recipients are, on average, younger than the general population, while SSI recipients tend to be older.

A non-negligible number of individuals report having received both SSI and AFDC in the prior year. Since on an individual basis a person cannot receive aid from both programs simultaneously, this likely represents some families where a parent receives aid from one program and a child receives aid from another program. For example, a woman who is on SSI could have a child on AFDC as a child-only case, or a child on SSI could have a mother and siblings on AFDC. In addition, the data also likely represent some cases where an individual switches from AFDC to SSI, perhaps in response to shifting relative costs of program participation. We explore these individuals with "dual receipt" further in Section IV.

#### IV. Model Specification and Empirical Results

To test whether welfare reform aggressiveness is increasing SSI participation, we need some source of identifying variation in welfare reform aggressiveness. The state waivers in the 1990s provide rich state-level variation over time.<sup>14,15</sup> The number of states with major waivers approved by year is shown in Table 2a.<sup>16,17</sup> There has been some debate

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<sup>13</sup> The race and Hispanic ethnicity variables are overlapping. Non-white includes the race categories Black, Asian, and all other non-Caucasian categories. Both the White and the Non-White categories include individuals of Hispanic origin. The Hispanic variable controls separately for this ethnicity.

<sup>14</sup> Although the Family Support Act changed welfare participation rules beginning in 1988, it is difficult to test what effect this had on SSI participation because there were not dramatic differences in the rules by state.

<sup>15</sup> Due to the limited data available in the post-PRWORA era, in this paper we choose to focus on the effects of state waivers rather than the state-level differences in TANF administration. As additional years of data become available, it will also be possible to test whether the changes in eligibility and participation rules under TANF have led to an increase in SSI participation. For a discussion of PRWORA reforms affecting the SSI program, see Karoly et. al (2001).

<sup>16</sup> Major waivers include the following: time limits, expanded work requirements, family caps, JOBS exemptions, earnings disregards, and sanctions.

<sup>17</sup> We use the coding system described in Council of Economic Advisers (1997, updated with 1999 corrections

regarding the validity of the welfare waivers as a means to identify welfare reform. Martini and Wiseman (1997) contend that using dates of waiver approval can cause significant specification errors, since in many cases there are non-negligible lags between the date of approval and the date of implementation. For our purpose, date of approval may be more appropriate, since individual and caseworker behavior may begin to change once there is knowledge of reform. As such, we code waivers by date of approval. However, our results are robust to an alternate specification that codes waivers by data of implementation.<sup>18</sup>

It is possible that there exist systematic differences in SSI participation across states that are correlated with, but not caused by the waivers. Our approach to estimating the effects of waivers, given this possible unobserved heterogeneity, involves identifying a treatment group (single mothers), for whom the waivers should have a direct effect, and a control group for whom they should not. This approach, analogous to differences-in-differences estimation, should allow us to estimate our parameter of interest without bias.

We estimate the following linear probability model:

$$SSI\_PART_{ijt} = \mathbf{a} + \mathbf{b}_1 X_i + \mathbf{b}_2 Z_{jt} + \mathbf{b}_3 (SSI\ Benefits)_{jt} + \mathbf{b}_4 (AFDC\ Benefits)_{jt} + \mathbf{b}_5 (SingleMother)_i + \mathbf{b}_6 (Waiver)_{jt} + \mathbf{b}_7 (SingleMother * Waiver)_{ijt} + \mathbf{S}_j \mathbf{d}_j S_j + \mathbf{S}_t \mathbf{d}_t T_t + \mathbf{e}_i$$

where  $i$  indexes the individual,  $j$  indexes the state, and  $t$  indexes the year. Our dependent variable,  $SSI\_PART$ , is a binary variable that takes the value of one if the individual received SSI benefits in the year in question. The  $X$  vector includes individual-level characteristics that affect participation in the SSI program. These include age, race, ethnicity, education, and veteran status. The  $Z$  vector contains state-level variables that affect SSI participation, such as the annual unemployment rate and its lagged value. It also includes a measure of state-level Medicaid eligibility for SSI recipients.<sup>19</sup> We control for the maximum level of SSI

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for the coding of West Virginia). For waivers granted in the middle of a year, the variable is equal to the share of the year after the waiver was approved. We are grateful to Rebecca Blank for providing us with these data.

<sup>18</sup> States with major waivers by date of implementation can be found in Table 2b.

<sup>19</sup> States' Medicaid eligibility for SSI recipients falls into three categories: 1) recipients are automatically eligible; 2) all recipients are eligible but must fill out a separate application; and 3) the 209 (b) option, where

benefits as higher benefits make a program more attractive and could lead to higher participation.<sup>20</sup> Likewise, we control for the maximum level of AFDC benefits by state for a family of four. The dummy variable *Single Mother* is an indicator for whether the individual is a single (widowed, divorced, separated, or never married) mother.

This specification also includes state fixed effects ( $S_j$ ) to control for any time-invariant unobserved state characteristics that may influence SSI participation. We also control for national trends in SSI participation over time through the use of year fixed effects ( $T_t$ ). This is important, as SSI participation among disabled individuals was increasing over this time period due to the national changes in policy governing the program described in Section III. In addition, the year fixed effects will absorb the effects of business cycles at the national level. The error term is represented by  $e_i$ .<sup>21</sup>

*Waiver* is an indicator for whether state  $j$  had approved a major waiver by year  $t$ . If there is unobserved heterogeneity in SSI rates that is correlated with the waivers, we would expect it to be reflected in  $b_6$ , the coefficient on this variable. *A priori*, the direction of this correlation is unclear. If states pursuing welfare reform most aggressively also discourage public assistance receipt in general,  $b_6$  would be negative. If, instead, those states that implemented waivers did so because of an unexplained increase in AFDC caseloads that was correlated with a similar increase in SSI caseloads,  $b_6$  would be greater than zero.

The hypothesis that we test in this paper is that  $b_7$ , the coefficient on the interaction of state-level welfare reform aggressiveness and single motherhood, is positive.  $b_7$  will provide an unbiased estimate of the effect of waivers on SSI participation, as long as the unobserved factors correlated with individual SSI receipt and state welfare reform do not affect single mothers differentially from individuals in our control group.

The validity of this approach is determined by the adequacy of the control group

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Medicaid eligibility is more restrictive than SSI eligibility. There is some movement of states among these categories over the period of our analysis.

<sup>20</sup> While the federal SSI benefit is fixed, we include state supplements, which fluctuate over this time period.

<sup>21</sup> We calculate robust standard errors that correct for within state correlation, as per Moulton (1986). When the unit of observation is the individual but the independent variables of interest vary only across regions, the uncorrected standard errors can be severely understated, leading to misleading interpretations of the significance of coefficients.

used. As such, we explore the use of several different control groups, each of which has some advantages, as well as some potential problems. If our results are robust to the use of these different control groups, it will allow for greater confidence in our results. The first control group consists of married mothers. Since SSI rules about child eligibility were changing over this time period, and since there was a large increase in SSI child cases, families with children might be affected differently than families without children. This suggests estimating regressions estimated only on women with children, as a means of controlling for these changes. The effect of the changes in SSI should be nationwide, and, once we control for income, should not affect married mothers differentially from single mothers.<sup>22</sup>

However, as mentioned in Section II, two-parent families were eligible for welfare under the UP program, and as states were mandated to offer UP benefits beginning in 1990, the share of caseloads that was UP was increasing over this time period. We control for this share explicitly, by state and year, in our regressions. More problematic are state waivers over this time period that relaxed eligibility requirements for two-parent families.<sup>23</sup> To the extent that the married mothers are influenced by welfare policy aimed at two-parent families, their validity as a control group is questionable.

Because of these concerns, we use two alternate control groups - single women without children, and single men without children. Each of these control groups is unable to control for changes in the SSI program over this time period that affected all families with children. However, each is less likely to be contaminated by changes in welfare policy affecting benefits for two-parent families.

Results from the estimation of our baseline model with the three separate control

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<sup>22</sup> It is possible that marital status is endogenous to the presence of state-level waivers. Schoeni and Blank (2000) find a small but significant effect of waivers on the probability that women with low levels of education are married. We believe this small potential bias would bias our results to a null finding. If we assume that all single women have a higher propensity to receive SSI than all married women, because they are poorer, a shift in marital status due to waivers, from single to married should increase the probability of SSI receipt among our control group, married women, in the waiver period. There are income effects associated with marriage. We address these specifically later in the paper.

<sup>23</sup> Harvey et. al (2000) report that 30 states have relaxed at least one of the three main restrictions on two-parent families.

groups are found in Table 3. Since our results are derived from a linear probability model, the coefficients can be interpreted as percentage-point changes. The probability of SSI receipt increases with age and decreases with education. Non-white individuals are significantly more likely to participate in the SSI program, and individuals of Hispanic origin are less likely to participate. All of these demographic variables are of the expected sign and are generally statistically significant at the five-percent level or higher.

The coefficient on the unemployment rate is negative in each case, and statistically significant at the five-percent level or higher, implying that higher unemployment leads to lower SSI participation. We expected it to be positive, as SSI participation has been found in the past to be countercyclical.<sup>24</sup> However, our findings are consistent with a more recent study by Garrett and Glied (2000), who also find a significantly negative effect of unemployment on SSI receipt.<sup>25</sup>

The estimated coefficient on *Single Mother* varies significantly across the three regressions, showing the differences in the likelihood of SSI participation between single mothers and individuals in the three control groups. Single mothers are significantly more likely to participate in the SSI program than are their married counterparts. However, they are less likely to participate than either single men or single women without children.

The estimate of  $b_6$ , the coefficient on the waiver variable, is negative and statistically significant in all three cases, implying that individuals in states with increased welfare reform aggressiveness were significantly less likely to receive SSI benefits. States' attitudes towards various public assistance programs are likely to be correlated. This could mean that the states that are pushing welfare reform most aggressively are also the most likely to be unfriendly towards SSI recipients. Related explanations include the possibility that aggressive reform increases the stigma associated with participating in any public assistance program, or the possibility that women erroneously think that reform applies to SSI as well.

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<sup>24</sup> See Rupp and Stapleton (1995).

<sup>25</sup> Work by Klerman and Haider (2000) discusses the difficulties of using contemporaneous economic conditions to explain welfare caseloads (stocks) due to the dynamic processes of exit and entry that determine the number of public assistance recipients (flows). If SSI participation is an absorbing state, then it is likely that SSI participation is explained better by a combination of lagged economic conditions than by current ones. This

Alternatively, outreach efforts by the Social Security Administration over the 1990s could mean a diversion of resources towards single mothers and away from other individuals, leading to the negative relationship between SSI receipt and other individuals in waiver states.

Our estimate of  $b_7$ , the effect of welfare reform on SSI receipt, ranges between 0.006 and 0.010 depending upon the control group, and is always significant at the five-percent level or higher. The point estimate from Column 1, comparing single mothers with married mothers, is 0.00595, implying that single mothers in states that implemented major waivers were 0.6 percentage points more likely than other mothers to receive SSI benefits. Since the weighted probability of SSI receipt among single mothers is 2.9%, this implies that the presence of a waiver increases the probability that a single mother receives SSI to 3.5%, a 21.6 percent increase. Since the results are robust across a variety of control groups, this gives us greater confidence in the reliability of our estimates.<sup>26</sup> For the remainder of the analysis we focus on results comparing single mothers to married mothers.

Column 4 of Table 3 presents the results from a regression equivalent to that in Column 1 (with married mothers as the control group), but that also controls for state-specific linear time trends. This trend captures any other variation in economic conditions across states over this time period that might affect SSI participation. The coefficient on the waiver variable (picking up heterogeneity in which states passed waivers) is no longer statistically different from zero. However, our estimate of  $b_7$ , our coefficient of interest, is essentially unchanged in magnitude and significance, showing that our main result is robust to this alternative specification.

One concern with our preferred control group of married mothers is that single-mother families are different from married mother families, particularly in the resources available to the family. It is likely that the *Sullivan v. Zebley* decision affecting child

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might possibly explain the counter-intuitive sign on the contemporaneous unemployment rate.

<sup>26</sup> The  $R^2$ s in the regression results presented in Table 3 are low (ranging from 0.02 to 0.04). This is primarily because it is difficult to explain SSI receipt while excluding all health-related variables. The addition of self-reported disability status to the regression in Column 1 would increase the  $R^2$ . However, we are concerned with the possibility that self-reports of disability might respond to changes in relative program costs and benefits, so

participation had a greater effect on single mothers relative to married mothers, since SSI participation decreases with income and female-headed households have lower income. Thus, in Columns 1 of Table 4, we present analogous results that control for family income.<sup>27</sup> The inclusion of income reduces the estimated coefficient on the single mother variable from 0.02068 to 0.01726, suggesting that 17% of the difference between single and married mothers in their likelihood of SSI participation can be attributed to differences in family income. The estimated coefficient on the interaction of *Single Mother* with *Major Waiver* remains significant and of essentially the same magnitude.

As an additional test of the possibility that the increase in child SSI cases during the 1990s is driving our result, we modify our baseline regression to control for the number of children. Families with more children, holding all else constant, should face a higher that at least one child has a disability, and therefore should be more likely to have a family member that reports SSI. If our results are entirely driven by the growth in child SSI cases, we would expect the magnitude of  $b_7$  to fall when we control for the number of children. Results from this specification are presented in Column 4 of Table 4. As expected, the coefficient on the number of children variable is positive and significant at the one-percent level. However, the estimate of  $b_7$  actually increases slightly relative to our baseline model, giving us added confidence that our results are not driven by the liberalization of child eligibility resulting from *Sullivan v. Zebley*.

As mentioned previously, there have always been incentives at both the individual and state-level to switch from AFDC to SSI. Some of these incentives are financial, and have not changed substantially over time. Welfare reform is primarily expected to affect the non-pecuniary incentives. As such, we try to break out the effects of the financial incentives from those of the non-pecuniary incentives. The individual incentive to switch is equal to the difference in family benefits that the individual would receive on SSI versus AFDC. This is a function of the benefit levels of the two programs in the state, and of family size. We

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we exclude it from our analysis.

<sup>27</sup> Family income and SSI participation are clearly endogenously determined. However, this specification allows us to check whether our key results presented in the previous table are spurious due to this correlation.

calculate an individual-level benefit to switching, and add this to the baseline regression in equation (1). The state-level incentive to switch depends upon the state share of AFDC benefits paid, which is equal to one minus the federal matching rate. We add this to the regression in equation (1) as well. Results from this regression can be found in Column 1 of Table 5.

The estimated coefficients are as predicted by theory. A higher state share of AFDC benefits paid has a positive effect on the probability of SSI receipt, with an estimated coefficient of 0.0006. In addition, a higher individual-level gain to switching also increases the probability of SSI receipt, with an estimated coefficient of 0.00002. However, the estimated coefficient on  $b_7$  remains positive and statistically significant. This implies that the non-pecuniary effects of welfare reform on caseload shifting are in addition to any pre-existing financial incentives of individuals or states to shift. Due to the limitations of our data, we cannot further decompose the non-pecuniary effect into state and individual components.

We also explore whether aggressive welfare reform affected the probability that a family would report receipt of both programs in a given year. If a woman switched from AFDC to SSI, our data would indicate that she received income from both sources in that year. While this may include households where the mother received income from one program and the child received income from another, it is also likely to indicate shifting. We estimate a model where the dependent variable is an indicator variable for whether the individual received income from both programs. Our results, in Column 2 of Table 5, show a positive effect of the interaction between *Single Mother* and *Waiver*, with a magnitude of 0.00394. The baseline share of single mothers reporting dual receipt was 1.3%, so this effect implies a 30 percent increase in the probability that a single mother would report receipt of both programs. This effect is a larger percentage increase than our baseline effect. However, this is as would be expected if the dual receivers represent a flow of program switchers, while those reporting SSI receipt only represent a stock of those individuals on the program.

This increase in SSI receipt among single mothers in states that are aggressively pursuing welfare reform could be due to two factors. First, it is possible that rates of self-



reported disabilities among this group are endogenous and they respond to the changed program incentives.<sup>28</sup> Alternatively, self-reported disability rates could be constant and take-up rates among previously eligible populations could be changing.<sup>29</sup> To test which of these is happening, we regress self-reports of disability on the same set of independent variables specified in our earlier regression. Results are reported in Table 6. The point estimate of the coefficient on the interaction between *Single Mother* and *Major Waiver* is positive, as would be expected if disability rates were changing in response to welfare reform. However, neither this coefficient nor the coefficient on the major waiver variable is significantly different from zero. Thus, we find no compelling evidence that our results are due to higher reported disability rates among single mothers. Instead, it is likely that the increase in caseloads is due to an increase in take-up rates. As discussed earlier in the paper, this is expected due to changing incentives at both the state and the individual levels.

In 1995, there were 465,787 single mothers receiving SSI. Our baseline estimates imply that the probability of SSI receipt rose by 21.6 percent because of waivers. A rough back-of-the-envelope calculation implies that there would have been 82,778 fewer SSI cases in the absence of waivers. The total number of AFDC caseloads in 1995 was 4,876,240. The increase in SSI caseloads implied by our model suggests a shift of approximately 1.8 percent of the total AFDC caseload. Although the waiver effect is small in relation to the entire AFDC caseload, it is clear that a decrease in caseloads in one public assistance program cannot be interpreted as an equal-sized decrease in overall public assistance caseloads.

## V. Conclusion

The results of this paper have several important implications for evaluating the effectiveness of welfare reform. We find that female-headed households in states approaching welfare reform with greater aggressiveness were 21.6 percent more likely to receive Supplemental Security Income. These results are robust to a number of alternate

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<sup>28</sup> See Waidmann et al (1995).

<sup>29</sup> This distinction is analogous to that drawn in the AFDC literature between changes in take-up rates and changes in eligibility. See Blank and Ruggles (1996) and Blank (1997).

specifications, and are not dependent upon the use of a particular control group. We can, therefore, conclude that changes in the relative costs and benefits of participating in two public assistance programs do have a significant effect on probabilities of participation.

This finding has implications for the well-being of women on welfare who are facing time limits. Acs and Loprest (1999) discuss the high prevalence of disability rates among those on AFDC during the 1990s, and find that few disabled recipients are able to leave AFDC for work. They conclude that disabled women on AFDC have a high likelihood of running up against any time limits imposed by welfare reform. If disabled AFDC recipients are able to switch to SSI, then the negative effects of time limits and sanctions imposed by welfare reform on disabled women could be lessened.

If our results are being driven by changes in *adult* SSI participation, then this "softening" of the welfare reform blow is possible. However, if our results are being driven by changes in *child* SSI participation, the restrictions that the 1996 PRWORA legislation placed on child SSI receipt might mean further hardship for these families over the next few years. Due to data constraints, we are unable to precisely decompose the effect on adult SSI participation from the effect on child SSI participation. However, regressions controlling for family income and number of children suggest that the results are not being driven by the liberalization of SSI eligibility for children.

An additional policy implication of our results is that a decrease in caseloads in one program cannot necessarily be interpreted as an equal-sized decrease in the number of families receiving public assistance. This analysis makes clear the importance of looking at the interactions among programs when evaluating changes to a single program.

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**Table 1a: Summary Statistics**

	Single Mothers	Married Mothers	Single Women without Children	Single Men without Children
Age	28.70 (7.88)	33.79 (6.05)	27.95 (7.64)	28.65 (7.17)
Veteran	0.009	0.010	0.008	0.102
Nonwhite	0.332	0.123	0.185	0.196
Hispanic	0.128	0.105	0.072	0.096
Years of Education	12.30 (2.19)	13.05 (2.57)	13.47 (2.47)	12.96 (2.63)
Disabled	0.057	0.030	0.063	0.073
SSI Maximum Monthly Benefit Level for an Individual (\$)	440.55 (119.49)	437.60 (120.52)	444.30 (119.66)	445.77 (120.38)
Monthly AFDC Benefit for Family of Four (\$)	478.71 (193.75)	482.55 (191.83)	500.39 (192.15)	496.50 (192.82)
Unemployment Rate	6.26 (1.53)	6.21 (1.54)	6.17 (1.51)	6.20 (1.52)
Receives SSI	0.029	0.006	0.025	0.024
Number of Observations	67,400	149,914	84,731	120,573

Sample consists of individuals aged 18-44. Summary statistics are weighted. Standard deviations are in parentheses. Sources: Individual-level data from March CPS 1987-1997. Disability is only consistently asked of all adults from 1988 on. Federal SSI Benefits from *Social Security Bulletin Annual Statistical Supplement* (Office of Research, Evaluation, and Statistics, SSA; various years). State SSI supplements from *State Assistance Programs for SSI Recipients* (Office of Research, Evaluation, and Statistics, SSA; various years) and *1996 Green Book* (U.S. House of Representatives). AFDC benefits from various editions of the *Green Book* (U.S. House of Representatives). State Unemployment Rates from U.S. Bureau of Labor Statistics Web Site (<http://www.bls.gov>).

**Table 1b:  
Comparison of Sample Means for SSI Recipients and AFDC Recipients**

	All Individuals	AFDC Recipients	SSI Recipients
Age	31.13 (7.52)	29.38 (6.72)	32.11 (7.26)
Veteran	0.069	0.018	0.037
NonWhite	0.169	0.421	0.326
Hispanic	0.101	0.164	0.103
Years of Education	13.08 (2.60)	11.23 (2.33)	10.39 (3.74)
Disabled	0.049	0.123	0.690
Receives SSI	0.014	0.057	--
Receives AFDC	0.031	--	0.127
# of Observations	676,403	21,399	8,679

**Table 2a: States with Major Waivers by Date of Approval, 1991-1996**

Year	States obtaining a Major Waiver	Total with a Major Waiver	Percent with Major Waiver	Percent of US Population in Waiver States
1991	0	0	0.0	0.0
1992	5	5	9.8	20.8
1993	4	9	17.6	29.3
1994	6	15	29.4	36.3
1995	10	25	49.0	50.9
1996	9	34	66.7	75.3

Source: Council of Economic Advisers.

**Table 2b: States with Major Waivers by Date of Implementation, 1991-1996**

Year	States obtaining a Major Waiver	Total with a Major Waiver	Percent with Major Waiver	Percent of US Population Affected
1991	0	0	0.0	0.0
1992	3	3	5.9	18.9
1993	4	7	13.7	26.4
1994	4	11	21.6	30.4
1995	8	19	37.3	43.0
1996	9	28	54.9	66.7

Source: U.S. Department of Health and Human Services.  
[http://aspe.hhs.gov/hsp/Waiver-Policies99/Table\\_A.htm](http://aspe.hhs.gov/hsp/Waiver-Policies99/Table_A.htm)

**Table 3: Regression Results for Different Control Groups**

Variables	Control Group				With State Time Trends			
	Married Mothers	Single Women without Children	Single Men without Children	With State Time Trends				
Age	0.00073 (0.00008)	***	0.00189 (0.00011)	***	0.00180 (0.00010)	***	0.00073 (0.00008)	***
Veteran Status	0.00037 (0.00384)		-0.01209 (0.00386)	***	-0.01826 (0.00220)	***	0.00056 (0.00382)	
Nonwhite	0.01077 (0.00177)	***	0.01176 (0.00225)	***	0.01197 (0.00196)	***	0.01077 (0.00177)	***
Hispanic	-0.00387 (0.00206)	*	-0.01360 (0.00390)	***	-0.01572 (0.00325)	***	-0.00382 (0.00206)	*
Years of Education	-0.00371 (0.00058)	***	-0.01212 (0.00096)	***	-0.01063 (0.00102)	***	-0.00382 (0.00206)	***
Log Max SSI Ben	0.00219 (0.00409)		0.00756 (0.00655)		0.00788 (0.00681)		0.00163 (0.00380)	
Log Max AFDC Ben	0.00169 (0.00829)		0.00625 (0.01046)		0.01188 (0.01042)		-0.00236 (0.00885)	
Unemployment Rate	-0.00111 (0.00054)	**	-0.00262 (0.00099)	**	-0.00282 (0.00080)	***	-0.00062 (0.00008)	
Single Mother	0.02068 (0.00136)	***	-0.01371 (0.00139)	***	-0.00654 (0.00165)	***	0.02069 (0.00208)	***
Major Waiver ( $\beta_6$ )	-0.00477 (0.00152)	***	-0.00552 (0.00369)		-0.00654 (0.00240)	***	-0.00275 (0.00208)	
<b>Single Mother *</b>	<b>0.00595</b>	<b>**</b>	<b>0.00658</b>	<b>*</b>	<b>0.00994</b>	<b>***</b>	<b>0.00588</b>	<b>**</b>
<b>Major Waiver (<math>b_7</math>)</b>	<b>(0.00281)</b>		<b>(0.00382)</b>		<b>(0.00345)</b>		<b>(0.00282)</b>	
R <sup>2</sup>	0.0212		0.0424		0.0375		0.0217	

\*\*\* Significant at 1% level. \*\* Significant at 5% level. \* Significant at 10% level. Dependent variable is equal to one if woman (or her children under 15) receive SSI income. Results are from linear probability model. Standard errors are corrected for within state correlation. All regressions include a constant term, as well as state and year fixed effect. Additional control variables include a one-year lag on the unemployment rate, the employment growth rate and a one-year lag, the percent of the state's welfare caseload that is two-parent, and dummies for different categories of Medicaid eligibility for SSI recipients.

**Table 4: Results Controlling for Number of Children and Income**  
**Dependent Variable = SSI Participation**

Variables	Controlling for Family Income		Controlling for Number of Children	
Single Mother	0.01726 (0.00131)	***	0.02149 (0.00144)	***
Major Waiver ( $\beta_6$ )	-0.00479 (0.00156)	***	-0.00484 (0.00153)	***
<b>Single Mother * Major Waiver (<math>b_7</math>)</b>	<b>0.00626 (0.00282)</b>	<b>**</b>	<b>0.00603 (0.00280)</b>	<b>**</b>
Log Income	-0.00725 (0.00070)	***		
Number of Children	--		0.00332 (0.00065)	***

Regressions include all the variables listed in Table 3; See additional notes for Table 3.

**Table 5: Results Breaking out State and Individual Financial Incentives**

Variables	Dependent Variable = SSI Participation		Dependent Variable = Dual Receipt	
State Share of AFDC benefits	0.00055 (0.00029)	*	0.00013 (0.00020)	
Individual Gain from Switching to SSI	0.00002 (0.00001)	*	0.00004 (0.00001)	***
Single Mother	0.02082 (0.00133)	***	0.01131 (0.00078)	***
Major Waiver ( $\beta_6$ )	-0.00481 (0.00142)	***	-0.00367 (0.00089)	***
<b>Single Mother * Major Waiver (<math>b_7</math>)</b>	<b>0.00685 (0.00301)</b>	<b>**</b>	<b>0.00394 (0.00202)</b>	<b>*</b>

Regressions include all the variables listed in Table 3; See additional notes for Table 3.



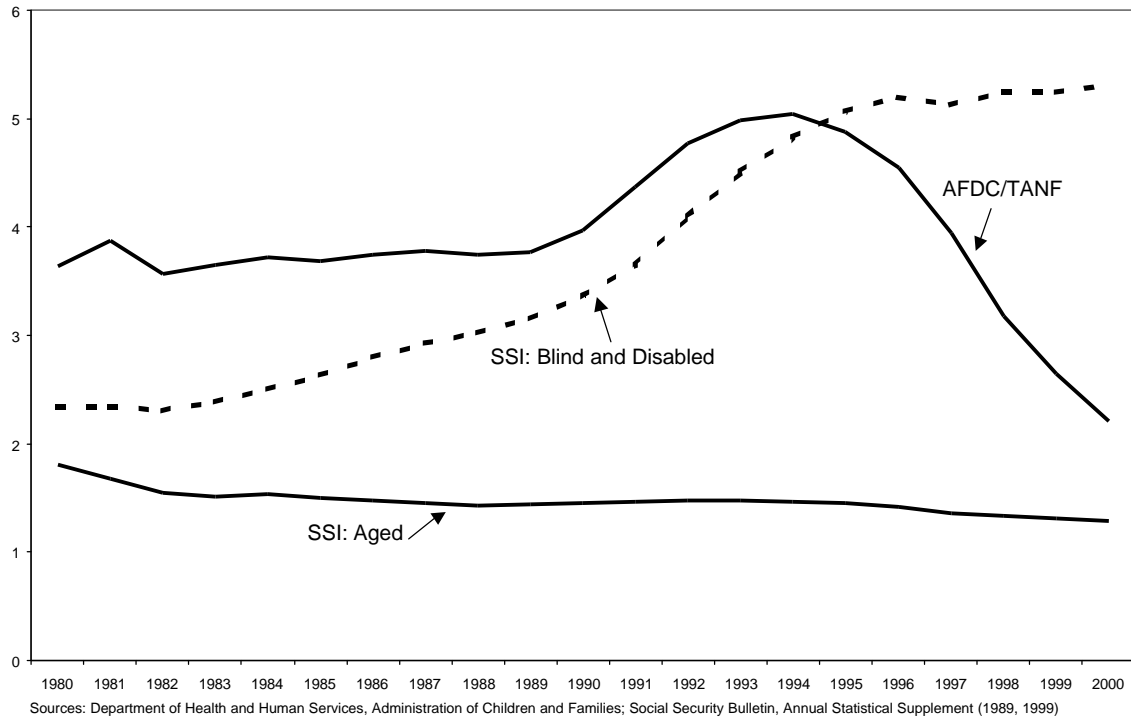
**Table 6: Self-Reported Disability Results**

<i>Variable</i>		
Age	0.00236 (0.00012)	***
Veteran Status	0.01243 (0.00697)	*
NonWhite	0.00354 (0.00168)	**
Hispanic	-0.02226 (0.00372)	***
Years of Education	-0.00702 (0.00083)	***
Log Maximum SSI Benefit	0.02556 (0.01541)	
Log Maximum AFDC Benefit	-0.01846 (0.01414)	
Unemployment Rate	0.00075 (0.00137)	
Single Mother	0.03301 (0.00198)	***
Major Waiver	-0.00175 (0.00258)	
<b>Single Mother * Major Waiver</b>	<b>0.00198 (0.00385)</b>	
R-squared	0.0184	
Number of Observations	175,039	

\*\*\* Significant at 1% level. \*\* Significant at 5% level. \* Significant at 10% level.

Dependent variable is equal to one if woman reports a disability that prevents her from working. Results are from linear probability model with state and year fixed effects. Standard errors are corrected for within state correlation. Regression includes a constant term.

**Figure 1:**  
**AFDC/TANF and SSI Caseloads (in millions)**



**Figure 2: SSI Participation Rates among Individuals 18-44**  
**1986-1997**

