
Child Support Enforcement and Welfare Caseloads

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ABSTRACT

Although there is a large body of research devoted to the issue of the determinants of welfare caseloads, none of these studies has incorporated the effects of child support enforcement (CSE). We employ annual state panel data from 1980 to 1999 and find that states with more effective CSE have significantly lower welfare caseloads. The improvement in CSE over this period reduces welfare caseloads by about 9 percent in 1999. We also discover that individual child support variables may not be good indicators of state CSE vigor and that a CSE index that includes multiple dimensions of CSE is more likely to capture the multiplicative functions of CSE.

I. Introduction

As a consequence of increasing rates of nonmarital births and divorces, the proportion of American families with children that are headed by single mothers rose sharply in the last quarter of the twentieth century. One of every eight families with children was headed by a single mother in 1970. By 1998, the proportion had doubled to one of every four. Unfortunately, the economic insecurity of

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single-mother families remains dangerously high. Nearly 40 percent are poor and another 45 percent are near-poor (below 200 percent of the poverty line) (U.S. House of Representatives 2000).

The rising number of single-mother families and their persistent disadvantage has increased public and political concerns over the roles of welfare and child support. In response to the increase of divorced and never-married mothers in Aid to Families with Dependent Children (AFDC) caseloads, state and federal legislators have taken a number of steps to prevent nonresident fathers from abandoning their children financially and to increase the responsibility of resident mothers (for a brief history, see Garfinkel, Meyer, and McLanahan 1998). In 1975, Congress created the Child Support Enforcement (CSE) Program, which established state offices of CSE and authorized Federal matching funds for states to help locate absent parents, establish paternity, establish child support orders, and obtain child support payments. From 1981 through 1999 (with the exception of 1983, 1985, and 1991), Congress passed new laws every year strengthening child support (Lerman and Sorenson 2000). The 1984, 1988, and 1996 bills were the most important. The 1984 Child Support Amendments required states to develop legislative guidelines to be used in determining child support awards and to withhold child support obligations from the paychecks of delinquent fathers. In 1988, the Family Support Act mandated states to adopt presumptive guidelines for child support awards and to initiate automatic withholding from fathers' paychecks, regardless of delinquency. The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 reinforced paternity establishment by streamlining the legal processes for establishment, requiring states to adopt in-hospital voluntary paternity establishment programs, and providing mandatory genetic testing in contested cases. It also strengthened income withholding by reducing the time for employers to remit withheld wages to seven business days and allowing issuance of electronic withholding orders by State agencies without notice to obligors. The collection system is changing from one where payment is often discretionary to one where payment is compelled and automatic (Legler 1996; Wolk and Schmahl 1999).

State and federal legislators also have passed a series of proposals designed to reduce the welfare eligibility of single mothers and increase the costs of single motherhood. These initiatives included a series of welfare waivers in the late 1980s and first half of the 1990s that lowered welfare benefits, imposed work requirements, and limited eligibility. This trend culminated in the 1996 PRWORA, which replaced AFDC by Temporary Assistance for Needy Families (TANF), eliminated the entitlement to welfare, substantially tightened work requirements, and limited total lifetime eligibility to five years.

Large fluctuations in average monthly AFDC-Basic caseloads over the past 20 years have spawned a round of welfare caseload studies. The average monthly caseload was around 3.6 million between 1975 and 1981, and then despite the severe recession in 1981–82, declined to 3.2 million in 1982. Most analysts attribute this drop to the reductions in welfare eligibility enacted by the 1981 Omnibus Budget Reconciliation Act (OBRA). Between 1982 and 1990 caseloads rose slowly but steadily to 3.8 million. In response to the recession of the early 1990s, caseloads increased from 3.8 million in 1990 to 4.6 million in 1994. After 1994, caseloads began an unprecedented decrease to 4.1 million in 1996 and 2.6 million as of the

end of 1999. Numerous studies have found that the changes in demographics, macroeconomic conditions, political party, and AFDC program characteristics help to account for the changes over time (CBO 1993; CEA 1997, 1999; Moffitt 1992, 1999; Wallace and Blank 1999; Figlio and Ziliak 1999; Schoeni and Blank 2000; Ziliak et al. 2000; Blank 2001; Klerman and Haider 2001; O'Neill and Hill 2001).

What is missing from the studies of welfare caseloads is the effect of CSE. Both reductions in welfare benefits and increases in child support payments will decrease welfare caseloads. Perhaps because direct effects are more obvious and easier to document compared with indirect effects, academic studies as well as the popular media have paid more attention to changes in welfare policies than to changes in child support policies in accounting for changes in welfare caseloads. For a number of reasons, this omission is both surprising and regrettable. First, policy makers strengthened CSE in the belief that doing so would improve collections and thereby reduce welfare costs and caseloads. Second, there is evidence that CSE has improved collections, especially among fathers whose children are likely to be on welfare. Third, as we show below, there are good reasons to expect, and fairly strong empirical evidence to support the belief, that strong CSE will reduce welfare caseloads. Finally, while cuts in welfare benefits and increases in child support payments both decrease welfare caseloads, the former reduces the economic well-being of single-mother families while the latter increases it. Thus previous studies of welfare caseloads are incomplete.

In this paper we test the hypothesis that strong CSE is associated with lower welfare caseloads. The results indicate that states with more effective CSE have significantly lower welfare caseloads, suggesting that future caseload studies should incorporate the effects of CSE. In the next section, the theory and empirical evidence that motivate our analysis are discussed. In the third and fourth sections, we describe our analytical methods and data. After that, the effects of CSE on welfare caseloads are presented. In the final section we discuss our results and their implications for both policy and future research.

II. The Multiple Effects of Child Support Enforcement on Welfare Caseloads: Theory and Previous Literature

Child support enforcement can decrease welfare caseloads both by reducing the proportion of single mothers who receive welfare and by reducing the prevalence of single mothers. Strong CSE reduces the proportion of single mothers who will rely on welfare both by increasing the economic security of mothers outside welfare and by being more complementary to work (Garfinkel, Heintze, and Huang 2001). Increases in child support payments increase the mother's income and thereby reduce the mother's need and eligibility for welfare. Compared with welfare, child support is more complementary to work because as the mother's earnings increase, child support payments fall much less rapidly than welfare benefits and in many states child support does not decline at all. A number of studies document that child support reduces poverty and welfare caseloads effectively (Robins and Dickinson

1985; Robins 1986; Garfinkel, Robins, Wong, and Meyer 1990). In terms of flows into and out of welfare, two studies (Meyer 1993; Huang, Kunz, and Garfinkel 2002) using longitudinal data find that child support payments significantly increase the likelihood of exiting welfare and decrease the probability of reentering welfare.

Though economic theory does not yield general conclusions about the effects of strong CSE on nonmarital births or divorce, theory suggests that in the presence of a welfare system, deterrence effects are likely. Stronger CSE increases the income of the custodial or resident parent and reduces the income of the nonresident parent. To simplify, yet account for most cases, we call resident parents mothers and nonresident parents fathers. If CSE is tougher, mothers will be more prone to parent a child out-of-wedlock and to divorce, while fathers will be less prone to do either. Which effect will dominate cannot be ascertained in general. But Nixon (1997) shows that stronger enforcement is more likely to deter divorce among couples where the divorced wife would rely on welfare. And, Willis (1999) finds that in the presence of a shortage of males and relatively high female income (which is produced by welfare), theory predicts stronger enforcement reduces nonmarital births. One simple though not quite full story is that among couples where the mother goes on welfare if she has a nonmarital birth or is divorced, welfare removes or at least reduces the benefit of strong enforcement. Consequently, the effect of enforcement on the incomes of these mothers and fathers is asymmetrical. In sum, previous explorations of economic theory predict that in conditions that pertain in the United States today, stronger CSE will reduce nonmarital births and may reduce divorce. Further, there is empirical confirmation that stronger enforcement reduces marital disruption (Nixon 1997), and out-of-wedlock childbearing (Case 1998; Blau, Kahn, and Waldfogel 1999; Huang 2002; Garfinkel, Huang, McLanahan, and Gaylin 2003).

In short, theory strongly suggests and empirical research confirms that strong CSE decreases welfare participation by increasing the income of single mothers and by deterring single-motherhood. The total effect on welfare caseloads could be quite substantial even if each of the individual effects were only small to modest.

There is also a relatively large body of research devoted to predicting welfare participation and welfare caseloads (see Moffitt 1992, Figlio and Ziliak 1999, Blank 2001, 2002 for thorough reviews). In studies done in the 1980s, the focus was on the effects of welfare program characteristics on the participation decision. Although the data and methods are different, the results across the studies are remarkably consistent in showing that welfare participation is an economic decision. Higher caseloads are associated with higher welfare benefits, and also with higher unemployment rates and lower wages as well as fewer other sources of income (which include but are neither limited to nor dominated by child support payments). Women who are less educated, older, in poorer health, and with more and younger children are more likely to participate in welfare.

Welfare caseloads, as mentioned above, increased greatly in the early 1990s and then abruptly decreased after 1994 during a period when guarantees and tax rates did not change much. Not surprisingly, most studies in the 1990s have shifted their focus to other factors such as demographic, macroeconomic, political, and welfare program factors. Among these factors, strong macroeconomic performance and welfare reform are most credited for the changes. The U.S. Council of Economic Advisers (CEA 1997) used annual state-level panel data for 1976–96 and modeled welfare

caseloads as a function of unemployment rates, welfare waivers, and AFDC maximum benefit guarantees. The CEA study concluded that 44 percent of the decline in welfare receipt from 1993 to 1996 can be attributed to economic growth and that 31 percent is related to welfare waivers. Wallace and Blank (1999) used annual state data for 1980–96 and a rich set of control variables to examine the changes in welfare participation. They found that caseloads are strongly affected by macroeconomic, welfare waivers, programmatic, and political factors. In the 1994–96 simulation, economic factors contribute 47 percent of caseload decline and welfare waivers account for 22 percent of the decline. Ziliak et al. (2000) argued that the use of annual caseloads masks the importance of short-run dynamics in caseload levels, and thus employed monthly state-level data and a more dynamic specification to examine AFDC caseloads. They used 1987–96 monthly data and attributed 66 percent of the caseloads decline between 1993 and 1996 to macroeconomic factors and a negligible effect to welfare waivers. Figlio and Ziliak (1999) further conducted an extensive reconciliation between the findings in Ziliak et al. and those of the CEA, and concluded that these differences are largely due to the fact that the CEA used a static model while Ziliak et al. employed a dynamic one, and that the primary consequence of controlling for caseload dynamics is to reduce the role of welfare reform relative to macroeconomic factors in generating the decline in AFDC caseloads.

Several papers extend the data period to post-1996 and compare the TANF era with the AFDC period (Council of Economic Advisers 1999; Grogger and Michalopoulos 1999; Wallace and Blank 1999; Rector and Youssef 1999; Schoeni and Blank 2000; O'Neill and Hill 2001; Grogger Forthcoming). They found welfare policy had a bigger effect in the TANF period, while unemployment had a lesser impact on caseloads. For example, the CEA (1999) indicates that the 1996 PRWORA has been a key contributor to the recent decline of the caseloads. TANF accounts for one-third of the caseload reduction from 1996 to 1998 while the improvements in the labor market account for 8 to 10 percent.

Unlike previous studies that were based on the stock of caseloads, Klerman and Haider (2001) used a stock-flow approach to examine welfare caseloads. They argued that the stock approach, which assumes welfare caseloads are static and are a function of explanatory variables, is problematic because welfare receipt is also dependent on the previous history of welfare receipt, or negative duration dependence. Such dependence is well-supported by previous welfare-flow studies (Hutchens 1981; Bane and Ellwood 1986, 1994; Hoynes 2000). Using 1989 to 1998 California data (the national data for the stock-flow approach is not available), they modeled welfare caseloads into two parts, entry and continuation rates, and allowed these rates to vary with explanatory variables. They found that approximately 50 percent of the caseload decline in California can be attributed to economic factors, substantially larger than the 20–35 percent estimates that are obtained from the stock approach.

In short, the results across studies are consistent in that both welfare and economic factors underlie the decline of the caseloads, although the relative contributions of a strong economy and welfare reform are in dispute. However, in view of the strong theoretical and empirical evidence that CSE matters, it is surprising that these studies do not incorporate the effects of changes in CSE.

III. Methods

The primary analysis technique is fixed-effects regression with welfare caseloads as the dependent variable, and child support enforcement, demographic, economic, welfare, and political variables as independent variables. Fixed-effects models are run as ordinary least squares (OLS) regressions with state and year binary variables and state-specific time trends as the fixed effects. The model specification uses the natural logarithm form and is given by:

$$(1) \ln y_{it} = \alpha_i + \beta_1 * CSE_{it} + \beta_2 * \chi_{it} + \delta_t + \eta_{it} + \varepsilon_{it}$$

where y_{it} is welfare caseloads measured for state i at time t , α_i is the individual state effect (which is taken to be constant over time), CSE is a child support enforcement variable, χ is a vector of demographic, economic, welfare, and political variables, δ_t is the time effect (which is taken to be constant across states), η is the state-specific time trends (which is the interaction of state dummies and the linear time trend variables), β is a regression coefficient, and ε_{it} is the cross-section time-series error component. Note that with state and year effects and state-specific time trends, the only way in which a variable can influence the dependent variable is through its deviation from linear time trends in the state. Variables that are largely constant over time within states or affect all states in a given year such as the Earned Income Tax Credit (EITC) will be subsumed within the state and year fixed effect. (It is for this reason that the EITC has not been included in the welfare caseloads studies).

The coefficient β_1 in Equation 1 may be biased if CSE is endogenous. States with high caseloads may have a greater incentive to enforce child support. Consequently, the error term of Equation 1 is correlated with CSE and OLS generates biased coefficients. In results not shown, female legislator ratio was used as an instrument to correct this potential endogeneity in two-stage least square regression, but most of the estimates are not substantially different from the ones from OLS. Female legislator ratio, however, may also affect other government programs, such as the generosity of welfare and child care benefits, which affect welfare caseloads and thus may not be a good instrument. Like some previous analyses of welfare caseloads, we also estimate dynamic versions of the Model 1 by including lagged welfare caseloads as an independent variable. In results not shown, the estimates of CSE are still significant although the magnitudes are reduced substantially due to the dynamic specification. Klerman and Haider (2001) provided evidence that including a lagged dependent variable in combination with the fixed effects could cause a Nickell bias that results in biased estimation in dynamic simulation, although it may identify the underlying structure of the stock-flow model if the continuation rate does not vary with duration.

Previous studies use different variables to measure the strength of a state's CSE, including state child support legislation, per capita child support expenditure, paternity establishment rate, payment rate, average payment, and collection effectiveness (Nixon 1997; Case 1998; Sorensen and Halpern 1999; Freeman and Waldfogel 2001; Garfinkel, Heintze, and Huang 2001; Huang 2002; Huang, Kunz, and Garfinkel 2002; Garfinkel et al. 2003; Huang, Han, and Garfinkel 2003). A common difficulty experienced by previous studies is that not all of the CSE measures have the right direction

or show significant effects. This may partly be due to the difficulty of measuring the effect of individual legislation or efforts and partly to the ambiguity of the correct specification of CSE. A successful enforcement of child support requires three steps: establish a legal child support order; determine award amount; and collect the payment. Moreover, effective CSE requires strict child support legislation, sufficient expenditures, and strong implementation. The beneficial effect of child support legislation would not be observed unless strong and effective enforcement is implemented (Freeman and Waldfogel 2001; Huang, Kunz, and Garfinkel 2002). Most studies, however, measure one dimension of CSE. For example, Case (1998) emphasizes child support legislation and does not include measures of states' abilities to implement. Nixon (1997) uses payment rate, average payment, and accounts receivable to measure state CSE and does not include legislation activity.

Effective CSE is derived in part, but not in whole, from laws. Good laws that are not effectively enforced may have little effect. Thus, it seems reasonable to hypothesize that welfare caseloads will be more strongly related to effective enforcement practices than to laws *per se*. While utilizing measures of child support payments has advantages, there are disadvantages as well. Most important, not all of the effects of child support laws on welfare caseloads operate indirectly through their effects on child support payments. For example, laws that strengthen the requirements for mothers receiving AFDC/TANF to cooperate with OCSE officials in the establishment of paternity and enforcement of support could deter mothers from applying for welfare even if the law had no effect on child support payments. Similarly, laws strengthening paternity establishment could affect father's marriage and fertility behavior rather than payment behavior. Because CSE is a multiplicative function of the probability of having a legal obligation, the level of the obligation, and the probability of paying the full obligation, individual child support variables may not be a good indicator of state CSE, and this may be the reason that individual child support variables do not show consistent results in previous studies.

Thus, to capture the strength of a state's CSE, we create a CSE index that includes state child support legislation, expenditures, and implementation ability. First, a legislative index is created to measure the vigor of state child support legislation (for an earlier example of a legislative index, see Freeman and Waldfogel 2001). The legislative index includes eight measures of child support legislation (values range from zero for states with no law to eight for states with all eight laws) and covers steps for establishing paternity, obtaining an award, and collecting child support payments: genetic tests, paternity establishment, numerical guidelines, presumptive guidelines, wage withholding under delinquency, immediate wage withholding for a new case, universal wage withholding, and state income tax refund interception (for detailed information on these child support laws, please see Huang 2002 and Huang, Kunz, and Garfinkel 2002).

Second, we create a measure of CSE expenditures. Previous studies use child support expenditures, reported by the Office of Child Support Enforcement (OCSE), divided by number of single-mother families in that state to measure the per capita child support expenditure (Freeman and Waldfogel 2001; Huang, Kunz, and Garfinkel 2002). However, it is not clear this is correct specification of per capita child support expenditure. The caseloads of OCSE include not only single-mother cases but also remarried ones. Also, federal child support law requires each state OCSE to

provide services to all welfare families and to offer to provide services to nonwelfare families. As a result, state OCSE is more likely to spend money on current or former welfare cases. Thus, we create four alternative variables to measure per capita child support expenditure, in which each state's child support expenditures are divided by number of single-mother families, total OCSE caseload, total OCSE current and former welfare caseload, and total OCSE current welfare caseload.

Finally, we create a measure of the state's CSE implementation ability, using three variables: collection rate, amount, and effectiveness. The collection rate is the proportion of single-mother families on welfare who receive any child support, and the collection amount is the average child support payment for families on welfare, calculated as total state child support collection for families on welfare divided by the total number of families on welfare. The collection effectiveness is defined as the child support collection amount in a state divided by the child support amount owed under the Wisconsin guideline for that state (Garfinkel 1992). The collection effectiveness is the most comprehensive measure of the strength of a state's CSE system because it captures the effects of: 1) the probability of establishing a legal child support obligation, 2) the dollar value of the obligation, and 3) the degree to which the obligation is paid. The collection rate and amount, while not quite as comprehensive as collection effectiveness are still very good measures of the strength of a state's enforcement system because they reflect success at both getting a child support award and securing a payment.

In addition to these variables, we create a variable to measure the level of child support payments relative to welfare generosity in each state, calculated as state average child support payments divided by maximum AFDC/TANF benefits. The higher the proportion of child support payments relative to welfare benefits is, the more likely it is that single mothers would move out of welfare caseloads.

IV. Data

The data for this study came from several sources. In previous studies, welfare caseloads have been defined as AFDC-Basic caseloads divided by the state population or by the female population aged 15–44. Although both measures adjust for state size, the latter one is preferred because it takes account of the size of the population at risk in that state and therefore we follow it here.¹ AFDC-Basic caseloads come from Quarterly Public Assistance Statistics (QPAS) from 1980 to 1996 and are from the Office of Planning, Research and Evaluation (OPRE) for 1997–99 (Department of Health and Human Services 2002). State female population aged 15–44 come from the 1980–99 March Current Population Survey (CPS).

As discussed above, the key independent variable, the strength of the state's CSE system is measured by an index that is made up of three types of measures: child support legislation, enforcement expenditures, and implementation ability (which

1. Both measures have been analyzed and the results are robust. We also follow Blank (2001) in using AFDC-Basic caseloads minus child-only caseloads as an alternative numerator for the dependent variable, and the results are similar with those using AFDC-Basic caseloads.

includes the collection rate, collection amount, effectiveness, and the level of child support payments relative to welfare benefits). The data for child support legislation are from Huang (2002) and Huang, Kunz, and Garfinkel (2002). Child support expenditure and number of OCSE caseloads are from OCSE's annual report to Congress. The number of single-mother families comes from 1980–99 March CPS.

We calculate the collection rate and amount from two different data sources: OCSE and CPS. For OCSE measures, the number of families on welfare receiving child support and the dollar amount received reported by OCSE are divided by the number of OCSE welfare cases to measure the OCSE collection rate and amount for current welfare mothers. The OCSE data are not reliable for tracking payments to all families eligible for child support. Federal legislation does not require each state OCSE to provide services to nonwelfare families. States differ on the extent to which they incorporate nonwelfare cases into their administrative systems. Over time, however, virtually all states have brought an increasing proportion of all eligible families into their state OCSE systems. Thus a large part of the difference among states and over time in OCSE collections for nonwelfare families is a result of counting more families in one state than in others where child support was already being paid. The OCSE administrative data are subject to various kinds of reporting error (Guyer, Miller, and Garfinkel 1996). It is possible that states report child support payments to former welfare cases as payments to current welfare cases. Though the data matching capabilities of state offices of welfare and CSE have improved over time, this type of error is still likely to occur, especially since federal law gives state offices of CSE greater incentives for collecting from welfare than from nonwelfare cases. Also, welfare caseloads dropped dramatically after 1996 PRWORA, and state OCSE may not have had the capacity to update their caseloads promptly. Most important, mothers who leave welfare are less likely to reenter if they receive child support (Meyer 1993; Huang, Kunz, and Garfinkel 2002). Thus, the OCSE measures for current and former welfare cases may be better indicators of state CSE. We create these measures accordingly, in addition to the OCSE measures for current welfare cases.

For CPS measures, both numerators (number of families on welfare receiving child support and amount received) and the denominator (number of families on welfare) are from CPS.² The major weaknesses of the CPS measures are the small sample size of single mothers in many states and the underreporting of welfare receipt. Sample sizes are smallest and sampling error greatest for the proportion of welfare cases receiving child support. This problem is more serious after 1996 when welfare caseloads dropped substantially. In the 1999 CPS, there are 773 cases of single-mother families on welfare. About 26 states report numbers of families on welfare as fewer than 10 cases. The underreporting of welfare receipt in the CPS is a well-known problem and one that leads to identifying a welfare sample with error. To reduce the impact of sampling and reporting error, we utilize three-year moving averages for CPS measures. In addition welfare recipients receive at most \$50 per month in child support before 1996 and, in most states, receive zero payment after

2. Prior to 1989 CPS did not separate child support income from alimony. As such, child support income is imputed for 1980–88 using the April CPS—child Support Supplement to determine the percentage of the combined child support and alimony that is exclusively child support.

1996. These families may underreport receipt of child support because the child support payment comes not as a separate check, but as an addition to their welfare check. Finally, we calculated collection effectiveness, child support collection amount divided by the child support amount owed under the Wisconsin guideline, from CPS. Because we need the micro data to match the guideline amount for a given family, we are unable to calculate this variable from the aggregate data in the OCSE reports.

In addition to CPS measures for families on welfare, we calculate the same variables for never-married mothers. Compared to divorced mothers, never-married mothers are more economically disadvantaged and more likely to be on welfare (U.S. House of Representatives 2000). In addition, the number of never-married mothers increases over time and is, therefore, less likely to suffer from sampling error in later years. In the 1999 CPS, 1,917 cases of never-married mothers were sampled and only one state reported cases fewer than 10. The CPS measures for never-married mothers may provide better assessments of state CSE than the CPS measures for families on welfare.

Thus, both the OCSE and CPS measures suffer from measurement errors, the CPS measure is subject to sampling error, while the OCSE measures may have reporting errors. The measurement errors of the variables may be a reason that CSE does not have consistent results in previous studies (Case 1998; Sorensen and Halpern 1999; Freeman and Waldfogel 2001; Garfinkel, Heintze, and Huang 2001; Garfinkel et al. 2003; Huang, Han, and Garfinkel 2003). That measurement errors exist on individual measures highlights the importance of creating a CSE index that considers more than one measure. In this paper, we create a new CSE index, which consists of the summative rating of standardized scores of child support variables, to represent state CSE vigor. We also test the robustness of our results to alternative indices (please see results section for discussion of the different CSE indices).

For welfare variables, maximum AFDC/TANF benefits for a four-person family were collected from various Green Books. Average Medicaid expenditures for a family with one adult and two children came from the Health Care Financing Administration. Following the 1999 CEA study, the welfare waivers include six major types of waivers: termination time limits, work requirement time limits, family caps, JOBS exemptions, JOBS sanctions, and the earnings disregard. A dummy variable is created to indicate whether a state had any major waiver implemented by the survey year. Although TANF came into effect in September 1996, the actual implementation date varied among states. Like the 1999 CEA study, we used state actual date of TANF implementation, and turned off the welfare waiver indicator once states implemented TANF. A dummy variable is created to indicate whether a state implemented TANF by the survey year. Data on the dates of state welfare waivers and TANF implementation come from the 1999 CEA study.

Information on state-level demographics largely came from both U.S. Census and CPS data. Values for the intercensal years were interpolated from the 1980 and 1990 Censuses, and values for 1991 through 1999 were updated by the 1991–99 CPS. Demographic data include the percentage of the population that is African American and the percentage with less than high school education. The number of newly arrived immigrants is available from 1980 to 1999 from The Statistical Yearbook of the U.S. Immigration and Naturalization Services. Male and female tenth-percentile

Table 1
Welfare Caseloads and Participation

Variables (percentage)	1980–99	1980	1985	1990	1995	1999
Welfare caseloads/female population aged 15–44	5.42 (2.04)	6.10 (1.98)	5.33 (1.68)	5.72 (1.61)	6.38 (1.79)	2.41 (1.39)
Single mothers/female population aged 15–44	14.37 (3.09)	11.38 (1.90)	13.72 (2.05)	14.23 (2.74)	15.92 (3.18)	15.93 (3.40)
Welfare caseloads/single mothers	38.62 (14.19)	53.63 (15.69)	38.91 (10.97)	40.70 (10.43)	40.26 (9.27)	15.71 (9.82)

Note: Unit is state. Standard errors appear in the parentheses

wages were computed from the 1980–99 CPS. Unemployment rates were taken from the Statistical Abstract, U.S. Census Bureau. Political variables include the party affiliation of the governor and the majority party of the state House and state Senate, collected from the Book of States reports.

We use annual data because our CPS figures and some aggregate data are only available at the annual level. Data were complete for every variable for each state and year. The final sample consists of 1,000 observations—50 states for 20 years, 1980 to 1999.³ Variables expressed in dollars were collected as nominal amounts, and converted to real (constant) 1999 dollars using the consumer price index.

V. Results

A. Descriptive Results

Means and standard deviations of welfare caseloads and state CSE variables are listed in Table 1 and 2. The welfare caseload rate—a state’s welfare caseload divided by its female population aged 15 to 44—is around 6 percent over the 1980–95 period and then falls to 2.4 percent in 1999. The rate is affected both by the proportion of females who are single mothers and the proportion of single mothers who participate in welfare, and the trends in these variables are quite different. The proportion of females who are single mothers increases steadily, but at a decreasing rate. By way of contrast, the proportion of single mothers who receive welfare declines over the period, except for periods of economic recession.

For state CSE, it is evident that states have stricter child support legislation, allocate more expenditures for enforcement, and collect more child support payments over time. Different measures have different rates of increase. The trends in some measures, however, indicate they may not be appropriate indicators of state CSE.

3. In another analysis, we include the District of Columbia and drop political variables that are only available at the state level, but the results are not different from the ones reported here.

For example, child-support expenditure per OCSE current welfare cases increases almost six times over the period while other per capita child-support measures increase less than three times. The large increase in OCSE current welfare case measure is mainly because of the substantial reduction in OCSE current welfare cases after 1996. The collection rate also shows substantial increases for both OCSE and CPS measures before 1996, but shows different trends after 1996. For CPS measures of mothers on welfare, the collection rate declines, while OCSE measures and CPS measures of never-married mothers continually increase. The decline in CPS measures of mothers on welfare may partly be due to more advantaged mothers moving out of caseloads after 1996, thus increasing the proportion of the most disadvantaged cases (who are less likely to receive child support payments), and partly due to sampling errors given the small sample sizes after 1996. In contrast, the high OCSE collection rates in 1999, 30 percent for current welfare mothers and 39 percent for current and former welfare mothers, may suggest OCSE improved their child support collection on current and former welfare cases after 1996, but may also be due to measurement and reporting errors of OCSE (Guyer, Miller, and Garfinkel 1996). These findings, again, highlight that an individual child support variable may not be a good indicator of state CSE vigor. Finally, the collection effectiveness and level of child support payments relative to maximum welfare benefits show substantial increases for both CPS and OCSE measures.

As mentioned earlier, we create a CSE index to represent state CSE vigor. Because we are less confident of OCSE measures of current welfare mothers, our preferred index is composed of the summative rating of standardized scores of 13 child support variables in Table 2: Child support legislation (Variable 1), child support expenditure per OCSE current and former welfare cases (Variable 4), three OCSE collection measures of current and former welfare cases (Variables 6–8), and all eight CPS collection measures (Variables 12–19) (please see next section for discussion of the different CSE indexes). The Cronbach's alpha of this index is 0.92 and indicates high reliability of the index.

State environments changed over the period as well (shown in appendix). Some of these changes, such as the decrease in wage rates, are expected to increase caseloads. Other changes, such as the decrease in AFDC/TANF benefits, implementation of welfare waivers and TANF, and increase in education attainment, are expected to decrease caseloads. In short, welfare caseloads fluctuate over the period, and this is accompanied by improvements in CSE and changes in states' welfare and socio-economic environments. The decline in welfare participation among single mothers and the rate of growth of female headship are consistent with the hypothesis that improvements in CSE have led to decreases in welfare caseloads. These simple time trends, however, do not control for the effects of other variables or for the differences across states and time.

Figures 1 and 2 explore further the relationship between CSE and welfare caseloads over time and across states. Figure 1 exhibits a scatterplot of state welfare caseloads and our state CSE index over the 1980–99 period. Figure 2 displays the percent change of caseloads and CSE index realized every two years in each state (between 1980 and 1981, 1981 and 1982, and so on). There are 1,000 cases in Figure 1 (50 cases * 20 years), and only 950 cases in Figure 2 (50 cases * 19 years of change). For Figure 1, the correlation coefficient is -0.33 ($p < .01$) and indicates

Table 2
Measures of State Child Support Enforcement

Variables	All	1980	1985	1990	1995	1999
1. Child support legislation ^{a*}	3.72 (2.98)	0.28 (0.50)	1.02 (1.15)	3.90 (1.09)	6.92 (0.98)	7.78 (0.42)
Child support expenditure per capita						
2. Per single-mother family	296 (178)	174 (109)	183 (104)	301 (128)	478 (248)	489 (197)
3. Per OCSE total caseload	186 (99)	197 (197)	161 (98)	177 (63)	219 (97)	257 (93)
4. Per OCSE current and former welfare cases*	326 (214)	253 (276)	226 (160)	306 (148)	462 (242)	418 (174)
5. Per OCSE current welfare cases	501 (425)	253 (276)	226 (160)	461 (223)	670 (347)	1468 (663)
Child support (CS) Implementation Current and former welfare mothers, OCSE						
6. Percent of mothers with CS payment (CSP)*	15.54 (10.42)	13.99 (11.78)	13.00 (11.66)	13.33 (6.39)	16.84 (7.33)	38.87 (13.61)
7. Average CSP*	279 (201)	169 (175)	206 (172)	261 (141)	334 (140)	726 (365)
8. Average CSP/maximum welfare benefits*	0.04 (0.04)	0.02 (0.02)	0.03 (0.02)	0.04 (0.02)	0.06 (0.02)	0.13 (0.06)
Current welfare mothers, OCSE						
9. Percent of mothers with CSP	14.88 (9.62)	13.79 (11.29)	12.98 (11.65)	14.82 (6.91)	15.75 (7.09)	29.58 (16.55)
10. Average CSP	462 (315)	343 (335)	318 (266)	511 (301)	542 (269)	526 (505)

11. Average CSP/Maximum Welfare Benefits	0.07	0.04	0.04	0.08	0.09	0.09
Welfare Mothers, CPS	(0.05)	(0.03)	(0.03)	(0.04)	(0.03)	(0.08)
12. Percent of mothers with CSP*	17.47	8.99	10.11	19.93	26.09	20.62
	(10.64)	(6.37)	(5.40)	(11.17)	(10.14)	(11.77)
13. Average CSP*	252	182	166	228	318	386
	(210)	(144)	(113)	(166)	(178)	(366)
14. Ratio of CS collections to CS guidelines*	0.07	0.05	0.05	0.06	0.10	0.10
	(0.06)	(0.04)	(0.03)	(0.03)	(0.07)	(0.10)
15. Average CSP/maximum welfare benefits*	0.04	0.02	0.03	0.04	0.06	0.07
	(0.04)	(0.02)	(0.02)	(0.02)	(0.04)	(0.07)
Never-married mothers, CPS						
16. Percent of mothers with CSP*	12.53	5.14	7.01	13.30	19.15	21.09
	(8.55)	(5.45)	(4.35)	(6.89)	(7.06)	(7.83)
17. Average CSP*	235	94	127	223	367	521
	(203)	(119)	(96)	(124)	(201)	(270)
18. Ratio of CS collections to CS guidelines*	0.08	0.03	0.04	0.08	0.13	0.13
	(0.06)	(0.04)	(0.04)	(0.04)	(0.06)	(0.06)
19. Average CSP/maximum welfare benefits*	0.04	0.01	0.02	0.03	0.07	0.10
	(0.04)	(0.02)	(0.02)	(0.02)	(0.04)	(0.06)
Preferred CSE Index	0.00	-0.60	-0.50	-0.06	0.55	1.21
	(0.72)	(0.36)	(0.38)	(0.39)	(0.54)	(0.82)

Note: Unit is state. Standard errors appear in parentheses. All dollars amounts are in 1999 dollars.

a. Child support legislation is the sum of indicators for eight child support laws.

* indicates the variable is included in the preferred CSE index.

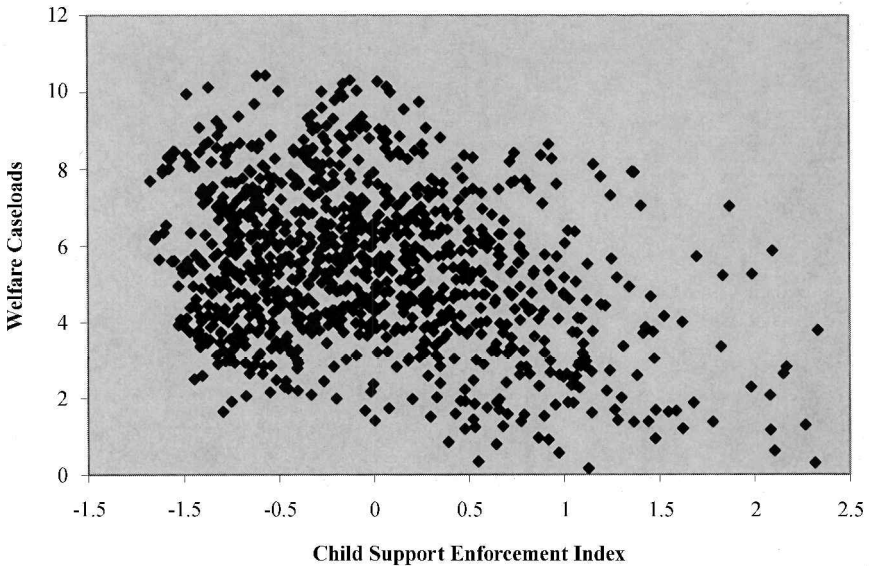


Figure 1
Welfare Caseloads and Child Support Enforcement ($r = -0.33$)

a strong negative relationship between state welfare caseloads and CSE. Once state-fixed effects are removed by examining percentage changes in these variables in Figure 2, the negative relationship between welfare caseloads and CSE is still strong but decreases substantially, with a correlation of -0.11 ($p < .01$). We explore these relationships further in the next section in the context of multivariate analyses.

1. Regression Results

Table 3 presents the determinants of state welfare caseloads for the 1980–99 period, estimated from OLS regressions. Model 1 includes all the independent variables, except CSE. The state CSE index is added into Model 2 (the results for alternative CSE indices and individual child support variables are reported in the following table). Both models take account of state, year, and state-time trend effects. Consistent with previous studies, our results in Model 1 show that unemployment has a strong and long-term effect on caseloads. A 1 percent increase in the unemployment rate in the current year would raise the caseload share by 0.2 percent in the current year, another 1.4 percent in the next year, and 3.0 percent in the second following year. The total effect of a one percentage point increase in the unemployment rate on caseloads would be 4.6 percent. This number is in the middle of previous estimates—higher than Blank’s 3.7 percent (2001, Table 2 Column 3), but lower than Wallace and Blank’s 4.7 percent (1999, Table 2 Column 3) and the CEA’s 5.4 percent (1999, Table 2 Column 1). The difference may be due to the data period and model specification.

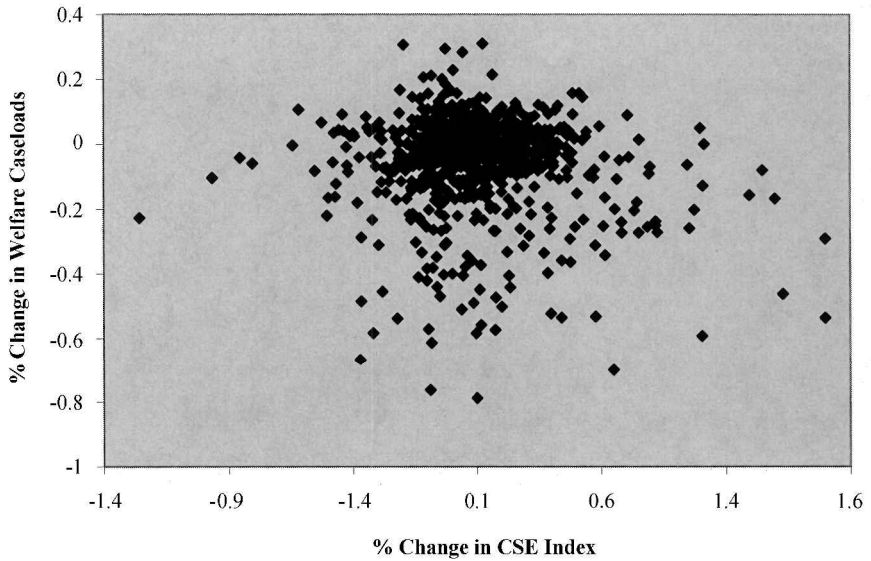


Figure 2
Percentage Change in Welfare Caseloads and Child Support Enforcement
 ($r = -0.11$)

As expected, better employment prospects as measured by the male and female tenth-percentile wages reduce welfare caseloads. A 1 percent increase in the male tenth-percentile wage would reduce caseloads by 0.5 percent, and an equivalent magnitude increase in the female tenth-percentile wage would lead to a 0.3 percent decrease in caseloads. The results highlight the importance of the economic opportunities of low-income men and women. An increase in the wage for a low-income man raises a man's potential marriage prospects, which indirectly reduces caseloads by increasing marriage (Huang and Mincy 2002). An increase in the wage for a low-income woman has a direct effect on her income, which decreases her probability of being on welfare.

States with a stricter welfare policy or more limited benefits have lower welfare caseloads. States with any major welfare waiver reduce their caseloads by 7 percent. The implementation of TANF is associated with a 10 percent decline in welfare caseloads. A one percent decrease in AFDC/TANF benefits will reduce caseloads by 0.25 percent. The estimate of welfare waivers found here is higher than Wallace and Blank's 4 percent (1999, Table 2 Column 3) but lower than the CEA's 9 percent (1999, Table 2 Column 1). For TANF implementation, the estimate, 10 percent, is lower than the CEA's 18 percent. The estimate of AFDC/TANF benefits is similar to Blank's 0.24 percent (2001, Table 2 Column 3) and Wallace and Blank's 0.20 percent, but higher than the CEA's 0.15 percent. These numbers suggest that the CEA's model, without a rich set of socioeconomic covariates, is more likely to overestimate the effects of welfare waivers and TANF implementation and to underestimate the impacts from other variables.

Table 3
Determinants of State Welfare Caseloads, 1980–99

Variable	Model 1				Model 2			
	β	Standard Errors	P	Robust	β	Standard Errors	Robust	P
Child support enforcement index	—	—	—	—	-4.43	1.98	**	**
Unemployment rate	0.20	0.63			0.09	0.63		
Unemployment rate, $t-1$	1.41	0.66	**		1.40	0.66	**	**
Unemployment rate, $t-2$	2.95	0.58	***		2.89	0.57	***	***
Log (male tenth-percentile wage)	-50.14	10.79	***		-51.64	10.82	***	***
Log (female tenth-percentile wage)	-32.59	11.57	***		-34.20	11.46	***	**
Log (maximum welfare benefits)	24.88	14.36	*		24.01	14.35	*	*
Log (yearly Medicaid benefit level)	1.82	2.02			1.97	1.92		
Any major waiver implemented	-0.07	0.03	**		-0.07	0.03	*	*
TANF implemented	-0.10	0.06	*		-0.09	0.06		+
Republican governor	-0.05	0.01	***		-0.06	0.01	***	***
Both state senate and house Democratic	0.04	0.02	*		0.04	0.02	*	*
Percent black	-9.33	6.09	+		-9.89	6.07	+	+
Percent with less than high school education	-0.31	1.00			-0.27	0.99		
Percent immigrants $t-1$	2.76	3.97			3.37	3.90		
State and year effects				Yes				Yes
State time trends				Yes				Yes
R ²				0.910				0.911

Dependent Variable = Log (AFDC-basic caseload/female population aged 15–44). N = 1,000. + $p < 0.15$; * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Political variables matter, too. Having a Republican governor substantially reduces caseloads, by 5 percent, while having both the state House and Senate controlled by Democrats increases caseloads by 4 percent. These findings suggest that Republican governors and Democratic legislators are able to shape administrative processes to affect caseloads.

Turning to the CSE index, our main independent variable, we see this has a strong and negative effect on welfare caseloads in Model 2. Using the improvement of CSE over the 1980 to 1999 period, this coefficient predicts a 9 percent reduction in caseloads. That is, without the improvement in CSE over this period, the actual welfare caseloads would be about 9 percent higher in 1999. Including state CSE does not notably change the findings from Model 1. This suggests that models that omit CSE will probably not yield greatly biased coefficients.

Table 4 presents the robustness tests of CSE. The first panel displays our preferred CSE index and alternative indices that include different items of child support variables in the second panel. Each index or individual child support variable is entered into the model separately and includes all the variables in Model 1 of Table 2. To further evaluate the robustness of model specification, we first drop state-time trends in Model 1 and then included the trends in Model 2. With respect to alternative CSE indices, we experimented with the sensitivity of the preferred index by removing OCSE or CPS measures or replacing them with other variables. Specifically, Alternative Index A takes OCSE collection measures out of the preferred index. In contrast, Alternative Index B removes all CPS collection measures out of the index, and Alternative Index C only takes CPS measures of welfare mothers out of the index. In Alternative Index D, we replace per capita child support expenditures with the one based on total OCSE caseload. Alternative Index E replaces OCSE measures of current and former welfare mothers with OCSE measures of current welfare mothers. The last alternative index only includes child support legislation and CPS measures of never-married mothers. All indexes have high reliability, with Cronbach's alpha over 0.87, and are associated with lower welfare caseloads, even the ones that include individual child support variables that are not significant or in the right direction (Index D and E). The results indicate that an index that includes multiple dimensions of CSE is more likely to capture the multiplicative function of CSE and also less likely to suffer from the measurement errors of individual variables. If a state has strict child support legislation, spends more money on enforcing child support, and collects more child support payments according to both OCSE and CPS measures, it is more likely to have high CSE rigor and more likely to reduce its welfare caseloads.

For individual child support variables, not all of them have a significant effect or in the expected direction. For example, child support legislation is only significant in the model without state-time trends, and child support expenditure per single-mother family and per OCSE total case have the wrong sign. The latter may be because states with more single mothers or total caseloads are more willing to spend money on CSE in order to reduce single motherhood or caseloads. Two OCSE measures of current and former welfare mothers are negative and significantly different from zero in the state-time trend model. Likewise, three CPS measures for never-married mothers are significant and in the right direction. The CPS and OCSE measures of current welfare mothers, by way of contrast, are much weaker. The results are consistent with the hypothesis that measures from mothers on welfare are more

Table 4
Robustness Tests of Child Support Enforcement

Variable	Model 1			Model 2		
	β	Robust Standard Errors	P	β	Robust Standard Errors	P
CSE index						
Preferred Index: 1, 4, 6-8, and 12-19.	-6.90	2.09	***	-4.43	1.98	**
Alternative Index A: 1, 4, 12-19.	-4.89	1.70	***	-2.63	1.53	*
Alternative Index B: 1, 4, and 6-8.	-5.74	2.31	**	-5.05	2.38	**
Alternative Index C: 1, 4, 6-8, and 16-19.	-9.07	2.15	***	-6.45	2.20	***
Alternative Index D: 1, 3, 6-8, and 12-19.	-6.43	2.08	***	-3.65	1.99	*
Alternative Index E: 1, 5, 9-19.	-7.08	1.86	***	-4.36	1.81	**
Alternative Index F: 1, and 16-19.	-6.03	1.58	***	-3.30	1.63	**
Individual CSE variable						
1. Child Support Legislation	-1.91	0.61	***	-0.79	0.63	
Log (child support expenditure per capita)						
2. Per single-mother family	4.60	2.74	*	7.53	3.15	**

3. Per OCSE total caseload	4.49	2.18	**	8.28	2.81	***
4. Per OCSE current and former welfare cases	-2.40	1.69	+	-0.87	1.89	***
5. Per OCSE current welfare cases	-9.33	2.02	***	-9.04	2.05	***
Current and former welfare mothers, OCSE						
6. Percent of Mothers with Child Support Payment (CSP)	-0.09	0.12		0.08	0.11	
7. Log (Average CSP)	-2.47	1.82		-4.16	2.08	**
8. Average CSP/welfare benefits	-2.17	0.71	***	-1.91	0.70	***
Current welfare mothers, OCSE						
9. Percent of mothers with CSP	-0.13	0.11		-0.10	0.11	
10. Log (Average CSP)	0.75	2.39		1.45	2.99	
11. Average CSP/welfare benefits	-0.33	0.37		0.02	0.40	
Welfare mothers, CPS						
12. Percent of mothers with CSP	-0.19	0.10	*	-0.13	0.09	
13. Log (average CSP)	0.45	0.89		0.13	0.62	
14. Collection effectiveness	-0.17	0.12	+	-0.16	0.12	
15. Average CSP/welfare benefits	-0.15	0.24		0.17	0.20	
Never-married mothers, CPS						
16. Percent of mothers with CSP	-0.46	0.14	***	-0.38	0.14	**
17. Log (average CSP)	-0.86	0.43	**	-1.35	0.39	***
18. Collection effectiveness	-0.67	0.20	***	-0.50	0.19	**
19. Average CSP/welfare benefits	-1.01	0.30	***	-0.35	0.30	
State time trends	No			Yes		

All the models including the covariates listed in model 1 of Table 3. N = 1,000. + $p < 0.15$; * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table 5
Simulation of Recent Caseload Changes

	Percent Explained by Independent Variables	
	94–96	96–99
Panel 1: Based on Model 2 of Table 3		
Preferred CSE index: 1, 4, 6–8, and 12–19.	7.6%	4.4%
Decline in unemployment	38.0%	6.8%
Change in male tenth-percentile wage	–4.8%	5.1%
Change in female tenth-percentile wage	3.0%	3.2%
Any major waiver implemented	13.3%	—
TANF implemented	—	15.7%
Change in AFDC/TANF benefit level	8.6%	1.8%
	Percent Explained by CSE Index	
Panel 2: Based on Model 2 of Table 4		
Preferred CSE Index: 1, 4, 6–8 and 12–19.	7.6%	4.4%
Alternative Index A: 1, 4, 12–19.	4.4%	0.8%
Alternative Index B: 1, 4, and 6–8.	8.8%	10.4%
Alternative Index C: 1, 4, 6–8, and 16–19.	14.0%	9.1%
Alternative Index D: 1, 3, 6–8, and 12–19.	5.8%	4.0%
Alternative Index E: 1, 5, 9–19.	8.0%	2.6%
Alternative Index F: 1, and 16–19.	7.4%	1.9%

likely to be corrupted by sampling and reporting errors, particularly after 1996, and may not be a good indicator of state CSE on its own.

2. Relative Importance of Child Support Enforcement

The results from Tables 3 and 4 are used to calculate the importance of CSE, as well as other variables, in explaining recent caseload declines between 1994 and 1996 (the waiver period) and 1996–99 (the TANF period). Specifically, the change in each variable is multiplied by its relative coefficient in Tables 3 and 4 to determine the changes induced by that factor. The ratio of the share of this change to the total change in welfare caseloads during this period is reported in Table 5. In results not shown, we found adding CSE into the model increases the percentage of variance explained by the independent variables, although it does not substantially change the estimated proportion explained by other variables.

Two panels are listed in Table 5. The first panel is based on Model 2 of Table 3, which includes the CSE index, and alternative indexes from Model 2 of Table 4 are listed in the second panel. For the 1994 to 1996 period, the overall caseloads are reduced by 12.5 percent. Decline in the unemployment rate is the most important

factor and explains about 38 percent of the decline. Both male and female tenth-percentile wage decline in this period and contribute to an increase, rather than decrease, in the caseloads. For example, male tenth-percentile wage was reduced from \$6.80 in 1994 to \$6.73 in 1996 (both in 1999 dollars) and led to a 0.6 percent increase in caseloads, which is about a -4.8 percent of the caseload decline in this period ($0.6/-12.5$). Implementing a major welfare waiver contributes to a 13 percent of the decline, and the decline in AFDC benefits explains 9 percent of the decline. For CSE, the preferred index on its own explains about 8 percent of the caseload decline. The estimates from alternative indices range from 4 to 14 percent. The wide range is largely due to the different improvements of individual child support variables over time. With respect to the 1996 to 1999 period, the overall caseloads are reduced by 59 percent. The decline in the unemployment rate and the increase in both male and female wages explain 15 percent of the decline, while implementation of TANF explains 16 percent of the decline. The CSE index contributes to 4 percent of the decline, while the estimates of alternative indexes range from 1 to 10 percent. The fact that less variance explained is by the independent variables over the 1996 to 1999 period warrants further research on this period.

The estimates of the caseload reduction attributed to welfare waivers and TANF implementation found here are lower than the ones found in the CEA study (1999). For example, the CEA study attributed 15 percent of the caseload reduction in the waiver period to welfare waiver and 36 percent of the reduction in the TANF period to TANF implementation, while our estimates are 13 and 16 percent respectively. In contrast, we found a bigger impact of macroeconomic factors than the CEA study. About 17 percent of the reduction in the waiver period was attributed to macroeconomic factors in the CEA study. The estimate found in this study is 30 percent. As mentioned earlier, the CEA's model did not include a rich set of socioeconomic covariates and tend to overestimate the impacts of welfare waivers and TANF implementation and underestimate the effects of other variables.

VI. Conclusion

Previous research on the determinants of welfare caseloads has not incorporated the effects of CSE. This is regrettable because legislators passed laws to strengthen enforcement with the expectation that stronger CSE would reduce welfare costs and caseloads. Furthermore, their expectations were not unreasonable: There are good theoretical reasons and relatively strong empirical support for the belief that strong enforcement reduces welfare caseloads by deterring entrances into and promoting exits from welfare and by deterring divorce and nonmarital births. Finally, CSE among current and former welfare families has improved dramatically in recent years.

This paper employs annual state panel data from 1980 to 1999 to examine the effects of CSE on welfare caseloads and provides evidence that CSE plays a role in reducing welfare caseloads. Specifically, our estimates imply that the improvement in CSE between 1980 and 1999 reduced welfare caseloads by about 9 percent in 1999. Without the improvement of CSE over the period, the mean welfare participation rate in 1999 would be 2.65 percent rather than the actual 2.41 percent. The

inclusion of CSE improves the ability to explain the changes in welfare caseloads that would not be explained by welfare and/or economic factors alone. This paper also provides evidence that individual child support variables may not be good indicators of state CSE vigor and that a CSE index that includes multiple dimensions of CSE is less likely to suffer from the measurement errors of individual variables and is more likely to capture the multiplicative functions of CSE.

After the 1996 welfare reform, national caseloads decreased substantially, from 4.1 million in 1996 to 2.6 million in 1999. This dramatic decrease is expected to bring a new round of caseload studies and studies of the well-being of single mothers after welfare. This paper provides evidence that, in addition to the strong effects of the economy and welfare reform, there is also an effect of CSE, which should not be overlooked in caseload studies. Studying the effects of CSE on welfare caseloads is also particularly timely in light of recent changes in child support policy at the national level. For instance, the 1996 welfare reform law gave states the option to eliminate the \$50 pass-through to mothers on welfare for whom child support is being collected. To date, most of the states have taken up this option and no longer pass on a share of the payments to the mother. This change may affect mothers' willingness to cooperate with CSE, which might increase welfare caseloads in the long run, but it may also decrease their incentive to be on welfare, which should decrease caseloads in the short run. These, and other effects of the 1996 child support reforms, will be important to study in the years to come.

Table A1
Means and Standard Deviations of Analysis Variables

Variables	1980-99	1980	1985	1990	1995	1999
Unemployment (percent)	6.23 (2.19)	6.76 (1.63)	7.07 (1.93)	5.35 (1.11)	5.23 (1.36)	4.11 (1.01)
Male tenth-percentile wage (\$ real 1999)	7.15	8.14	7.26	7.00	6.74	7.13
Female tenth-percentile wage (\$ real 1999)	(1.05)	(1.19)	(1.09)	(1.04)	(0.70)	(0.79)
	5.22	5.34	5.20	5.13	5.22	5.49
	(0.59)	(0.53)	(0.61)	(0.75)	(0.52)	(0.52)
Yearly maximum welfare benefits (\$ real 1999)	6884 (2646)	8514 (2993)	7401 (2636)	6936 (2646)	6138 (2331)	5739 (2173)
Yearly Medicaid benefit level (\$ real 1999)	4445 (1580)	3087 (847)	3356 (900)	4573 (1336)	5527 (1514)	5623 (1449)
Any major welfare waiver implemented (percent)	5.4 (22.6)	0.00 (0)	0.00 (0)	0.00 (0)	38.00 (49.0)	0.00 (0)
TANF implemented (percent)	17.3 (37.84)	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	100 (0.00)
Party of governor (Republican=1) (percent)	43.8 (49.63)	34.00 (47.8)	30.00 (46.3)	44.00 (50.1)	38.00 (49.0)	64.00 (48.5)
Both state senate and house Democratic (percent)	59.2 (49.2)	68.00 (47.1)	70.00 (46.3)	60.00 (49.5)	54.00 (50.3)	44.00 (50.1)
Female population aged 15-44 (1,000)	1149 (1253)	1054 (1110)	1111 (1202)	1167 (1298)	1198 (1333)	1223 (1363)
Percent black	9.36 (9.16)	9.02 (9.12)	9.22 (9.15)	9.36 (9.19)	9.58 (9.36)	9.71 (9.49)
Percent with less than high school education	23.55 (8.22)	32.53 (7.57)	28.41 (6.56)	23.71 (5.63)	17.16 (4.80)	15.47 (4.44)
New immigrants (1,000)	16 (47)	10 (23)	11 (27)	30 (101)	14 (31)	13 (28)

Note: Unit is state. Standard errors appear in parentheses

References

- Bane, Mary J., and David Ellwood. 1986. "Slipping Into and Out of Poverty: The Dynamics of Spells." *Journal of Human Resources* 21(1):1–23.
- . 1994. *Welfare Realities: From Rhetoric to Reform*. Cambridge: Harvard University Press.
- Blank, Rebecca M. 2001. "What Causes Public Assistance Caseloads to Grow?" *Journal of Human Resources* 36(1):85–118.
- . 2002. "Evaluating Welfare Reform in the United States." *Journal of Economic Literature* 40(4):1105–66.
- Blau, Francine, Lawrence Kahn, and Jane Waldfogel. 1999. "Does Welfare Influence Young Women's Marriage, Single Parenthood, and Female Headship Decisions?" Working paper, Columbia University.
- Case, Anne. 1998. "The Effects of Stronger Child Support Enforcement on Nonmarital Fertility." In *Fathers Under Fire: The Revolution in Child Support Enforcement*, ed. Irwin Garfinkel, Sara McLanahan, Daniel Meyer, and Judith A. Seltzer, 191–215. New York: Russell Sage Foundation.
- Congressional Budget Office. 1993. "Forecasting AFDC Caseloads, with an Emphasis on Economic Factors." Staff memorandum. July. Washington, D.C.:CBO.
- Council of Economic Advisers. 1997. "Technical Report: Explaining the Decline in Welfare Receipt, 1993–1996." Executive Office of the President of the United States. Washington, D.C.
- . 1999. "Technical Report: The Effects of Welfare Policy and the Economic Expansion on Welfare Caseloads: An Update." Executive Office of the President of the United States. Washington, D.C.
- Freeman, Richard, and Jane Waldfogel. 2001. "Dunning Delinquent Dads: The Effect of Child Support Enforcement Policy on Child Support Receipt by Never Married Women." *Journal of Human Resources* 36(2):207–25.
- Figlio, David, and James Ziliak. 1999. "Welfare Reform, the Business Cycle, and the Decline in AFDC Caseloads." In *Economic Conditions and Welfare Reform*, ed. Sheldon H. Danziger, 17–48. Michigan: W. E. Upjohn Institute for Employment Research.
- Garfinkel, Irwin, Daniel Meyer, and Sara McLanahan. 1999. "A Brief History of Child Support Policies in the United States." In *Fathers Under Fire: The Revolution in Child Support Enforcement*, ed. Irwin Garfinkel, Sara McLanahan, Daniel Meyer, and Judith A. Seltzer, 14–30. New York: Russell Sage Foundation.
- Garfinkel, Irwin, Theresa Heintze, and Chien-Chung Huang. 2001. "The Effect of Child Support Enforcement on Women's Income." In *The Incentives of Government Programs and the Well-Being of Families*, ed. Bruce Meyer and Greg Duncan, 1–25 (chapter 9). Chicago: Joint Center for Poverty Research.
- Garfinkel, Irwin, Philip P. Robins, Patrick Wong, and Daniel Meyer. 1990. "The Wisconsin Child Support Assurance System: Estimated Effects on Poverty, Labor Supply, Caseloads, and Costs." *Journal of Human Resources* 25(1):1–31.
- Garfinkel, Irwin, Chien-Chung Huang, Sara McLanahan, and Daniel Gaylin. 2003. "Will Child Support Enforcement Reduce Non-Marital Childbearing?" *Journal of Population Economics* 16 (1):55–70.
- Grogger, Jeffrey. Forthcoming. "The Effects of Time Limits, the EITC, and Other Policy Changes on Welfare Use, Work, and Income Among Female-Headed Families." *Review of Economics and Statistics*.
- Grogger, Jeffrey, and Charles Michalopoulos. 1999. "Welfare Dynamics under Time Limits." National Bureau of Economic Research, Working Paper no 7353. Cambridge, MA: NBER.
- Guyer, Jocelyn, Cynthia Miller, and Irwin Garfinkel. 1996. "Using the Office of Child Sup-

- port Enforcement Data to Rank the States: A Cautionary Note." *Social Service Review* 70(4):635–52.
- Hoynes, Hilary W. 2000. "Local Labor Markets and Welfare Spells: Do Demand Conditions Matter?" *Review of Economics and Statistics* 82(3):351–68.
- Huang, Chien-Chung. 2002. "The Impact of Child Support Enforcement on Nonmarital and Marital Births: Does It Differ by Racial and Age Groups?" *Social Service Review* 76(2):275–301.
- Huang Chien-Chung, James Kunz, and Irwin Garfinkel. 2002. "The Effect of Child Support on Welfare Exits and Re-Entries." *Journal of Policy Analysis and Management* 21(4):557–76.
- Huang, Chien-Chung, and Ronald B. Mincy. 2002. "Marriage Promotion: Are Men Marriageable?" Paper presented in the 42nd Annual Workshop of the National Association for Welfare Research and Statistics, Albuquerque, New Mexico, August 25–28, 2002.
- Huang, Chien-Chung, Wen-Jui Han, and Irwin Garfinkel. 2003. "Child Support Enforcement, Joint Legal Custody, and Parental Involvement." *Social Service Review* 77(2): 255–78.
- Hutchins, Robert M. 1981. "Entry and Exit Transitions in a Government Transfer Program: The Case of Aid to Families with Dependent Children." *Journal of Human Resources* 16(2):217–37.
- Legler, Paul. 1996. "The Coming Revolution in Child Support Policy: Implications of the 1996 Welfare Act." *Family Law Quarterly* 30(3):519–63.
- Lerman, Robert, and Elaine Sorensen. 2000. "Child Support: Interactions between Private and Public Transfers." Paper presented at the NBER Conference on Means-Tested Transfer Programs in the U. S. May 11–12, 2000. Boston, Mass.
- Klerman, Jacob A., and Steven J. Haider. 2001. A Stock-Flow Analysis of the Welfare Caseload: Insights from California Economic Conditions. Working Paper Series 01–02, Labor and Population Program, RAND.
- Meyer, Daniel R. 1993. "Child Support and Welfare Dynamics: Evidence from Wisconsin." *Demography* 30(1):45–62.
- Moffitt, Robert. 1992. "Incentive Effects of the U.S. Welfare System: A Review." *Journal of Economic Literature* 30(March):1–61.
- . 1999. "The Effects of Pre-PRWORA Waivers on AFDC Caseloads and Female Earnings, Income, and Labor Force Behavior." In *Economic Conditions and Welfare Reform*, ed. Sheldon H. Danziger, 91–118. Michigan: W. E. Upjohn Institute for Employment Research.
- Nixon, Lucia A. 1997. "The Effect of Child Support Enforcement on Marital Dissolution." *Journal of Human Resources* 32(1):159–81.
- O'Neill, June E., and M. Anne Hill. 2001. "Gaining Ground? Measuring the Impact of Welfare Reform on Welfare and Work." Civic Report No. 17, Center for Civic Innovation. New York: Manhattan Institute.
- Rector, Robert E., and Sarah E. Youssef. 1999. "The Determinants of Welfare Caseload Decline." The Heritage Foundation Paper # CDA99–04. Washington, DC: The Heritage Foundation.
- Robins, Philip. 1986. "Child Support, Welfare Dependency, and Poverty." *The American Economic Review* 76(4):768–88.
- Robins, Philip, and Katherine Dickinson. 1985. "Child Support and Welfare Dependence: A Multinomial Logit Analysis." *Demography* 22(3):367–80.
- Schoeni, Robert F., and Rebecca M. Blank. 2000. "What Has Welfare Reform Accomplished? Impacts on Welfare Participation, Employment, Income, Poverty, and Family Structure." National Bureau of Economic Research Working paper 7627. Cambridge, Mass.: NBER.

- Sorensen, Elaine, and Ariel Halpern. 1999. "Child Support Enforcement: How Well Is It Doing?" Urban Institute. Discussion papers 99-11.
- U.S. House of Representatives, Committee on Ways and Means. 2000. Overview of Entitlement Programs. 2000 Green Book. Washington, D.C.: GPO.
- U.S. Department of Health and Human Services, Office of Child Support Enforcement. 1980-99. Child Support Enforcement: Annual Report to Congress. Washington, D.C.: The Department of Health and Human Services, Administration for Children and Families.
- U.S. Department of Health and Human Services. 2002. Data on Temporary Assistance for Needy Families, 1997-1999. Office of Planning, Research and Evaluation. (<http://www.acf.dhhs.gov/programs/opre/tanfdata/caseload/tanfcaseload.htm>) Data retrieved on October 2002.
- Wallace, Geoffrey, and Rebecca Blank. 1999. "What Goes Up Must Come Down?" In *Economic Conditions and Welfare Reform*, ed. Sheldon H. Danziger, 49-90. Michigan: W. E. Upjohn Institute for Employment Research.
- Wolk, James L., and Sandra Schmahl. 1999. "Child Support Enforcement: The Ignored Component of Welfare Reform." *Families in Society* 80(5):526-30.
- Willis, Robert J. 1999. "A theory of out-of-wedlock childbearing." *Journal of Political Economy* 107(6):33-64.
- Ziliak, James P., David N. Figlio, Elizabeth E. Davis, and Laura Connelly. 2000. "Accounting for the Decline in AFDC Caseloads: Welfare Reform or Economic Growth?" *Journal of Human Resources* 35(3):570-86.