

# The role of the economy and welfare policies in shaping welfare caseloads: The California experience

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This longitudinal study analyzes the effect of labor market conditions and welfare policies accompanying the 1990s waivers granted by the federal government and Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (P.L. 104-193) on California's welfare caseload. A monthly semilogarithmic rate model is constructed for analyzing and predicting the single-parent welfare caseload from January 1983 to December 1998. The idea underlying this model is that during the study period month-to-month changes in the fraction of the female population ages 15 to 44 who headed a single-parent family and who received welfare were in response to changes in welfare policies and other programmatic and economic factors. The findings suggest that the role of welfare policies in shaping the caseload was modest, whereas the role of the economy was substantial.

**Key words:** caseload; economy; time limits; waivers; welfare reform; work incentives

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On April 10, 1999, President Clinton announced that since he took office, welfare caseloads consisting of families with children on welfare had fallen by 50 percent or more in 29 states and by about half nationwide. The most recent policy changes intended to reduce welfare caseloads were those under the Personal Responsibility and Work Opportunity Reconciliation Act (PRWOA) of 1996 (P.L. 104-193). On August 22, 1996, President Clinton signed PRWOA into law. This legislation replaced the federal entitlement program of Aid to Families with Dependent Children (AFDC) with Temporary Assistance for Needy Families (TANF). For the previous 60 years, the AFDC program had provided financial assistance to poor families with children who met categorical and income eligibility criteria. In 1998, in response to federal changes under PRWOA, California's AFDC program was replaced by California Work Opportunity and Responsibility to Kids (CalWORKs). Along with time limits, this new program implemented substantial work incentives.

Before the inception of the PRWOA, a number of states, including California, were granted waivers by the federal government to experiment with a variety of innovative approaches to end welfare dependence. From 1993 to 1997, welfare caseloads decreased in these states by nearly 20 percent, the largest decline in 50 years (Martini & Wiseman, 1997).

In light of the goals of the 1996 federal welfare legislation, it is particularly important to determine if, and the extent to which, federal or state policies played major roles in reducing welfare receipt in the context of improving economic conditions, including lower unemployment rates and growing numbers of jobs. California's very severe recession and subsequent vigorous recovery occurred in the midst of its waivers and CalWORKs, creating an excellent domain for teasing apart the effect of policy shifts from the economy in reducing the caseload.

This study determined the extent to which earlier waivers and PRWOA as implemented by

CalWORKs affected the size of the welfare caseload in California. For this investigation the largest component of the welfare caseload, the single-parent component, is considered for analysis. The AFDC-Family Groups (AFDC-FG) or CalWORKs component mainly serves single-parent families, many of whom do not have labor force experience. Understanding the role that the economy and recent welfare reform policies played in reducing the caseload after the inception of the waivers and PRWOA may foster a better design of future policies. Other research that analyzes the effect of recent welfare reform legislation on welfare caseloads is national, occurred before the implementation of PRWOA, and is in short supply. Yet, state-level rather than national-level analysis is essential because welfare policies and experiences vary drastically from state to state.

Findings from the present investigation should have special value for states that were granted work-related waivers similar to the ones granted to California or to states that implemented programs resembling the CalWORKs program. The findings also should have nationwide relevance because the relationships between welfare policy, or the economy, and welfare receipt are national concerns. Moreover, California has about 12 percent of the country's population and the largest share of the total nation's welfare caseload (20 percent). Finally, the findings from this study may be of special value to other states because California's policies play a vital role in effecting nationwide welfare legislation. Thus, the results of this study are interesting not only for what they can tell us about the effects of welfare reform in California, but also because they may serve as a template for similar research in other states.

## WELFARE INITIATIVES IN THE 1990S

An understanding of the factors that can affect the welfare caseload size is essential before the specification of a valid empirical model. The major features of the waivers granted to California or of CalWORKs were to encourage economic self-sufficiency. Economic self-sufficiency was to be accomplished by providing working recipients with greater work incentives or by increasing work requirements. The extent to which the waivers and CalWORKs affected the size of the caseload will be determined in the empirical portion of the study.

### The Waivers

From 1993 until the passage of PRWOA in 1996, the Clinton administration strongly supported state flexibility and innovation in welfare programs. In

California the waivers expected to have the greatest effect on single-parent welfare caseload size were one that provided recipients with work incentives and one that reduced the maximum benefit levels a family could receive during the month. Both waivers were implemented statewide and were intended to affect more families than other waivers. Under the waiver designed to provide work incentives, California extended the \$30 and one-third disregards for as long as the recipients retained employment. Before the implementation of this waiver, under the federal time limit, the first \$30 of the recipients' wages and then one-third of the recipients' remaining wages were disregarded when calculating their welfare grants during the first four months of work, after which time only the \$30 disregard applied. The other waiver was motivated by the idea that families are more likely to gain employment if the welfare system was made less attractive. In turn, maximum benefit levels were reduced for families by 2.7 percent.

Other waivers granted to California between 1993 and 1997 also were expected to have consequences for families, but to a lesser degree because they were meant to affect a small fraction of the caseload. For example, incentives and sanctions were to be used for teenage parents to encourage them to attend school regularly and graduate from high school. Table 1 summarizes the major elements found under the waivers and under CalWORKs.

### CalWORKs

Nationwide PRWOA meant that states were given some latitude on setting work requirements and providing work incentives. In response the Welfare-to-Work Act of 1997, AB1542, established welfare reform in California. The new AFDC program in California, CalWORKs, was implemented statewide in January 1998 (California Department of Social Services, 1998). One of the major objectives of CalWORKs is to encourage economic self-sufficiency through work incentives and paid employment with minimal government involvement. CalWORKs also encourages job readiness, two-parent families, and reduction of unplanned pregnancies. As shown in Table 1, the CalWORKs legislation substantially modified the financial incentives used in the AFDC program by permitting working recipients to keep more of their earnings. CalWORKs did away with the \$30 and one-third income disregard that existed earlier and replaced it with a \$225 and one-half disregards (California Department of Social Services, 1998).

In general, CalWORKs' major provisions are considerably different from ones found under the 1990s

**TABLE 1—Major Elements under California Waivers and CalWORKs**

Type	Elements of California Waivers
Making Work Pay	Statewide (September 1993): Extended federal four-month time limit on \$30 and one-third disregard for as long as recipients retain employment (control group in select counties). Statewide (March 1994): Increased current resource and assets limits for recipients. Statewide (September 1993): Reduced maximum benefit levels by 2.7 percent.
Parental Responsibility	Statewide (March 1994): Used incentives to encourage teenage parents to attend regularly and graduate from high school (CAL-LEARN).
Parental Responsibility	Statewide (August 1996): "Maximum Family Grant" required that there be no increase in benefits when additional children are born to parents while they are on welfare.
Type	Elements of CalWORKs under PRWOA
Time Limits	Statewide (January 1998): Benefits are limited to a life-time maximum of five years. This is a federal policy, and California opted to limit benefits to adult members only.
Treatment of Earnings	Statewide (January 1998): The \$30 and one-third disregards of earnings were replaced with a \$225 and one-half disregard.
Work Requirements	Statewide (January 1998): Increases the number of hours recipients have to engage in work-related activities and the proportion of adult recipients required to engage in work-related activities.

SOURCE: California Department of Social Services

waivers. Work requirements under the waivers were not as stringent as the ones found under CalWORKs, and welfare was not defined as a transitional program. Presently, welfare benefits are limited to adult recipients for a lifetime maximum of five years. These drastic policy shifts from AFDC to CalWORKs were expected to reduce caseload size in the coming years.

### CALIFORNIA'S WELFARE CASELOAD AND ITS ENVIRONMENT

One of the major goals of this study was to see if the expanding economy or major policy changes were most likely associated with the major changes in the welfare caseload in California during recent years. The welfare caseload considered in this article consisted of the total number of single-parent families with children on welfare in California. Certain features of the economy in particular, such as unemployment rates or employment rates, are relevant to the analysis of growth in welfare caseloads. In part, the modeling efforts in this investigation were devoted to determining the extent to which select features of the economy played a role in shaping the welfare caseload size. Before modeling efforts, a thorough examination of the how the caseload changed during the recession or economic recovery is necessary. Such an examination provides some idea of the

extent to which the economy is likely to play a role in shaping the caseload.

It would be unwise to attribute the entire rise or fall in the welfare caseload to recession, recovery, or any other single factor. Without controlling for other factors such as demographic shifts, which may effect changes in the welfare caseload, the effects of the economy or welfare policies on the caseload cannot be estimated for sure. Therefore, demographic changes also are examined in the subsequent discussion.

### The Subpopulations

California is a remarkably diverse state in terms of geography, economic streams, population density, and ethnicity or race. In 1996 nearly 8.5 percent (2.8 million people) of the state's population received welfare benefits, the highest rate in the nation. More than 10,000 families had been on welfare for 17 years or longer (Liu, 1997). As of 1996 California's population was close to 31 million people, about 12 percent of the nation's population.

The total number of females ages 15 to 44 in California grew by almost 20 percent, from 6.1 million in July 1983 to 7.3 million in December 1998. This subpopulation of childbearing age females included household heads on welfare and females in



the population at risk of becoming welfare recipients. Because the overall size of the population of females of childbearing age was expected to be associated with the caseload, the modeling efforts included testing such linkage.

### The Economy

The state of California experienced two major recessions in recent decades: one in the 1980s and the other in the 1990s. The first began in 1979 and produced maximum joblessness in 1982. The second began in 1990 and lasted until 1994. The unemployment rate during the first recessionary period was more dramatic than the one that prevailed during the second. During the 1980s economic recovery, the welfare caseload actually grew. In contrast, the 1990s economic recovery coincided with a substantial caseload decrease.

Overall, California's economic downturn in the early 1990s was severe compared with the downturns many other states experienced. The number of unemployed people in California nearly doubled from January 1990 to January 1993, from 750,000 to 1.4 million. The unemployment rate increased by nearly 60 percent from 1990 to 1993. During this time, the fraction of single-parent families on welfare of the number of females ages 15 to 44 increased by nearly 25 percent. California fared well in the earlier months of the recession, but later its economy was the weakest in the nation (Congressional Budget Office, 1993).

California's 1990 recession had consequences for female-headed families. The 1990 recession hit employment levels in the service industries particularly hard, a service sector that frequently offers employment opportunities to female-headed families (Congressional Budget Office, 1993). However, economic recovery in California was quite good, offering many employment opportunities to those in the service sector. Both of the sharp economic changes in California in the 1990s offer a good opportunity for studying the impact of the economy on the number of families entering or leaving the welfare system.

### EXPLAINING CHANGES IN WELFARE CASELOADS: THE LITERATURE

During the past two decades, several studies developed models for the AFDC caseloads using longitudinal data. The greatest number of studies developed state-level rather than national-level models of caseloads (Albert, 1988; Albert & King, 1999; Barnow, 1988; Brazzell, Lefberg, & Wolfgang, 1989; Garsky, 1989; Garsky, 1990; O'Neill, 1990; Plotnick

& Lidman, 1987; Wedel, 1987). Few studies are available that were designed to explain the substantial 1990s decline in welfare caseloads. Such studies pay particular attention the effect of the economy and of welfare waivers on the welfare caseload (Blank, 1997; Congressional Budget Office, 1993; U.S. Council of Economic Advisers, 1997; Ziliak, Figlio, Davis, & Connelly, 1997).

Researchers primarily concerned with developing nationwide or statewide models of total welfare caseloads generally use three classes of independent variables: demographic, economic, and programmatic. All researchers face the problem of choosing appropriate independent variables from these classes. In general, researchers include demographic variables such as births or the population at risk of receiving welfare (females ages 15 to 44) in their equations (Albert, 1988; Garsky, 1990; O'Neill, 1990; Plotnick & Lidman, 1987). Others account for the number of families headed by women (Congressional Budget Office, 1993).

Researchers explaining changes in the welfare caseload typically assume that for many individuals the economic appeal of the welfare system is weighed against the availability of jobs and the level of wages in the marketplace. Researchers, therefore, choose to include in their models aggregate employment or unemployment rates and measures of low wages to represent the economic appeal of the marketplace. Typically, accounting for welfare benefit levels captures the economic appeal of the welfare system. The measure that best captures welfare recipients' purchasing power is the one that includes both AFDC/TANF and food stamp benefits because most welfare participants receive both benefits (Albert & King, 1999).

Studies explaining the recent decline in the welfare caseload have several shortcomings (Blank, 1997; Congressional Budget Office, 1993; U.S. Council of Economic Advisers, 1997; Ziliak et al., 1997). One striking shortcoming is that these studies are conducted on a national level. This country supports welfare systems that provide diverse experiences for poor families. The large state-to-state variations in changes in welfare caseloads, welfare benefits, and economic conditions create a situation in which an in-depth analysis of welfare dependence needs to consider one state at a time.

To date, the studies conducted in this area of inquiry suffer from several other limitations. First, some of the studies' data do not permit them to capture adequately changes in the caseload. For example, the study performed by the U.S. Council of

Economic Advisers (CEA, 1997) and Blank's study (1997) used annual state-level panel data to model AFDC recipient rates. According to Ziliak et al. (1997), "The use of annual caseloads masks important short-run dynamics in caseload levels that can better be captured in monthly data" (p. 3). Second, some studies, for example, CEA's study, did not separately estimate AFDC-FG/TANF and the AFDC-Unemployed Parent/TANF programs (AFDC-UP). The decision to move in and out of the system is quite different between families participating in these two programs. Recipients in the AFDC-UP/TANF program have work histories, whereas this is not common in the AFDC-FG/TANF population. Moreover, until 1988, only about half the states had adopted the AFDC-UP program (Martini & Wiseman, 1997).

Next, not all of these recent studies accounted for the economic appeal of the welfare system and the availability of jobs or the level of wages in the marketplace. For example, CEA (1997) and Ziliak et al. (1997) did not include measures of the gains from welfare, which typically are the welfare benefits versus a measure of the gains from work, which typically are low wages.

Finally, researchers grapple with the problem of specifying the effects of waivers that the federal government granted to the states before the inception of the PRWOA. Some waivers were implemented statewide and others in only a part of a given state. Those implemented in only part of a state would be expected to have a smaller effect on the caseload than those implemented statewide. Ziliak et al. (1997) maintain that only statewide effects should be captured. Along the same lines, the date that best captures the presence of a waiver poses difficulties. CEA's model included the waiver application rather than approval dates. Because in some states a long time elapsed between the time the state applied for a waiver and the actual approval date, the approval rather than the application date should be integrated into the model. For example, in California it took about two years for some waivers to be approved from the time the applications were made. Martini and Wiseman (1997) also pointed out that actual implementation dates of the waivers also may differ from approval dates. Actual implementation dates, however, are difficult to determine.

Regardless of the differing methodologies and variable selection, the various studies examining the rise and decline in the welfare caseloads in the 1990s arrived at the same conclusion: In the 1990s the economy played a key role in shaping the size of

welfare caseloads. A Congressional Budget Office (CBO) study (1993) revealed that, the national welfare caseload had increased substantially in the midst of the 1990 recession. Their findings revealed that the recession had differential effects across regions. The 1990s economic downturn affected the Northeast region and California in particular, where AFDC benefits are relatively high. The 1990 recession reduced employment opportunities, especially for low-income women because of its effects on service industries. CBO's study did not account for the possible effects of federal waivers, many of which were granted after its study period.

Although researchers agree that the economy played a key role in shaping the caseload over the past few years, the effects of welfare waivers on the caseload are not clear. CEA's national analysis (1997) of caseload declines from 1993 to 1996 suggests that more than 40 percent of the decline in the caseload was a result of economic growth and that one-third can be attributed to waivers. CEA included several variables capturing whether a state applied for a waiver and whether a waiver was to be granted to a state. This latter variable is termed to have a "waiver threat" effect. As maintained by Martini and Wiseman (1997), however, many waivers are not threatening. It is difficult to believe that news of the prospect of a waiver approval would affect welfare recipients' decision to enter or exit the rolls a year in advance. Martini and Wiseman estimated that waivers decreased the caseload by about 10 percent. Blank's (1997) study analyzed the unique effect of macroeconomic and waivers on the welfare caseload. Her conclusion was that macroeconomic conditions, such as unemployment rates, are important determinants of change in the caseload. Both CEA's and Blank's study used annual data. Ziliak et al.'s (1997) national study used monthly data. The data showed that waivers granted before the passage of PRWOA played a modest role in changing national AFDC caseloads and that the decline in the caseload is attributable largely to economic growth. They do, however, caution the readers that the effects of welfare waivers are not immediate, but rather phase in over time.

## THE ANALYTIC APPROACH

The analytic portion of this study is devoted to developing and testing an aggregate time-series model of AFDC-FG/CalWORKs caseload. The size of the AFDC-FG/CalWORKs caseload is much larger than the two-parent component (90 percent). An aggregate time-series approach, as the one taken here, is frequently used by researchers interested in testing

hypotheses about the effects of major policy or program initiatives on caseload changes (Blank, 1997; Ziliak et al., 1997). Such an approach provides information about how the proportion of female-headed families with children on welfare is affected by macro-level changes in the economy or by major policy shifts. In this study time-series analysis is used to test hypotheses about the effects of various external developments, including the waivers and CalWORKs on California's AFDC-FG/CalWORKs caseload.

### Statistical Method

**Time Series.** Time-series analysis is used to analyze data that occur sequentially in time. Much like cross-sectional regression analysis, time-series analysis often uses a set of explanatory time-series variables as determinants of a dependent time-series variable. Unlike cross-sectional regression analysis, when trying to determine the functional relationship between the dependent and independent time-series explanatory variables, one often lags some of the explanatory variables. Typically, this is done when an explanatory variable is expected to have a delayed or lingering effect on the dependent variable. For example, an increase in employment opportunities in the marketplace, captured by the employment rate, would not necessarily have an immediate effect on the welfare caseload. Frequently, it takes a while for welfare recipients to obtain a job and move off the welfare rolls, and it may take them several months to obtain a job and earn enough money to be self-sufficient economically. In time-series analysis the total effect of the lagged coefficients is calculated together, and *F* tests are performed.

Autocorrelation of the residual error term often is present in time series. If autocorrelation is present the standard error of estimate of the regression coefficients tend to be under- or overestimated, resulting in the unreliability of the value of the coefficient. This could lead to spurious significance or nonsignificance of the coefficients. It is, however, often possible to model the autocorrelation of the error terms, correcting for their autocorrelation. This results in a much more accurate estimate of the coefficients and their standard error of estimate. One such procedure is used for the model in the present investigation.

In general, a time-series approach improves cross-sectional analysis in several ways. First, time-series approach allows for analysis of trends in welfare caseloads. Unlike cross-sectional analysis, the effects of historical changes in external developments on caseloads can be determined by time-series analysis.

Second, the longitudinal nature of time series allows for the analysis of the effect of major welfare policy shifts in a single county or state.

**The Model.** Time-series studies vary along the functional form specified by the researchers. A semi-logarithmic model was specified in a recent study that modeled the welfare caseload rate (CR) (Blank, 1997). In the present study a monthly semilogarithmic rate model was constructed for analyzing and predicting the AFDC-FG/CalWORKs caseload from January 1983 to December 1998. The beginning date is January 1983 because by this time the sharp decreases in the caseload resulting from the Reagan administration's Omnibus Budget Reconciliation Act (OBRA) policies in 1981 dissipated and the caseload returned to its pre-OBRA levels. The idea underlying the model is that over the study period month-to-month changes in the fraction of the female population ages 15 to 44 who headed a single-parent family and were on welfare were in response to changes in welfare policies and other programmatic and economic factors shown in earlier research to have an effect on the welfare caseload. This presents the caseload as a share of the population group that is most likely to be AFDC-FG/CalWORKs female household heads. Throughout the article, this fraction will be referred to as the CR.

I chose a semilogarithmic model because during the study period, while California's economy was in a recession, both the caseload and CR experienced very rapid growth, similar to an exponential growth. Similarly, during economic recovery, both the caseload and CR underwent a rapid decline, similar to an exponential decline. Consequently, it is reasonable to expect that CR is an exponential function of the independent variables listed below. This is equivalent to a semilogarithmic model for the CR that specifies the natural logarithm of the CR as a linear function of each independent variable. In such a model, the percentage change in the CR associated with a unit change in each independent variable is constant. The equation below is a semilogarithmic model for the CR developed in this study.

$$\ln(\text{CR}(t)) = b_0 + b_1 \text{TP}(t) + b_2 \text{WAIVERS}(t) + b_3 \text{CalWORKs}(t) + b_4 \text{MW}(t) + b_5 \text{W}(t) + b_6 \text{EMP RATE}(t) + b_7 \text{EMP RATE}(t-1) + b_8 \text{EMP RATE}(t-2) + b_9 \text{EMP RATE}(t-3) + b_{10} \text{EMP RATE}(t-4) + b_{11} \text{EMP RATE}(t-5) + e(t) \text{ for any } t \geq 6$$

where *t* = number of months from January 1983,

$\text{CR}(t) = \text{AFDC-FG/CalWORKs Caseload divided by number of females aged 15 to 44 during month } t,$

TP(t) = total payments of AFDC maximum aid and food stamps for a family of three, deflated by the CNI (1998 = 100), at month t,

WAIVERS(t) = welfare waivers are represented by a dummy variable, beginning in September 1993, at month t.

CalWORKs(t) = California's welfare reform program under PRWOA which began in January 1998, at month t.

MW(t) = full-time minimum wage gross earnings, deflated by the CPI-W (6/1998 = 100) at month t,

EMP RATE (t) = number of employed individuals in California at month t over the labor force at month t,

e(t) = random error term at t.

For variable sources, construction, and deflation see Discussion and Appendix A.

### The Data

Because a monthly model was specified, it was essential to develop a monthly time series for each independent variable in the model from January 1983 to December 1998. Generally, the independent variables capture policy or program shifts in welfare payments, wages, and the economy. Data for each of these variables were obtained from a variety of sources. The California Department of Social Services provided monthly statewide welfare data to calculate the CR. Each month the department compiles reports on the number of families with children receiving cash assistance in the AFDC-FG/CalWORKs program and the number of families during the month entering or leaving the system.

To calculate the number of females between ages 15 to 44 in California, several steps were followed. First, the number of females ages 15 to 44, including those on welfare, was obtained from the yearly data provided by the California Department of Finance. Each given datum was in July of each year. Second, these given data were geometrically interpolated to monthly counts because generally the population of California grows geometrically.

Total payments (TP) were calculated for a family of three because, on the average, single-parent households on welfare consist of three members. To calculate TPs for a family of three, monthly AFDC-FG/CalWORKs maximum aid value levels for a family of three were obtained from the California Department

of Social Services. Historically, these values changed annually. Food stamp values were calculated by using benefit calculation procedures provided by the U.S. Department of Agriculture. The food stamp regulations and procedures were used to calculate the amount of food stamp benefits a family of three would receive. Each household was assumed to receive the maximum food stamp deductions.

Materials were received from the California Department of Social Services regarding the major elements of the waivers and of CalWORKs. Such materials provided an understanding of when the major policy provisions occurred and the nature of these provisions. California Department of Industrial Relations provided hourly minimum wage values. These values were converted to gross monthly earnings. The employment rate was calculated by taking the monthly number of individuals employed over the monthly total number of individuals in the labor force. These data were obtained from the U.S. Department of Labor, Bureau of Labor Statistics.

The consumer price index (CPI) or consumer necessity index (CNI) deflated all variables valued in dollars. The California Department of Industrial Relations provided the CPI for all urban consumers. During some of the years, geometric monthly estimates of the CPI were obtained by using bi-monthly values. In contrast, the CNI, provided by California Department of Finance, is a measure of price changes for selected components of the CPI. Unlike the CPI, it only follows changes in the price of selected goods, including food, fuel and utilities, and transportation. It does not include the costs of medical care or mortgage interest payments. The CNI has been used to adjust welfare benefits in the state. In this article it is used to deflate TPs variable.

### Dependent Variable

Defining the population of potentially eligible welfare recipients poses a serious empirical problem, because potential welfare cases include not only the number of existing categorically eligible households that are poor, but also the households that are neither eligible nor poor but have the potential of becoming both. The population at risk that is considered for the present model includes all females ages 15 to 44. The number of mothers on the welfare caseload falling outside this age group is very small. During the study period, females in this age group increased by an average of 6,490 per month.

During the month the dependent variable (CR) in the model is defined to be the size of the AFDC-FG/CalWORKs caseload divided by the number of



females ages 15 to 44. This views the caseload as the percentage of females of childbearing age who are most likely to become at risk of welfare receipt. If this fraction increases, then the caseload is increasing faster than the eligible population. In this case a larger percentage of potentially eligible females is receiving welfare. If the fraction decreases then the caseload is either increasing, but not as fast as the eligible population, or decreasing in absolute terms.

### Programmatic Variables

**Total Payments.** According to economic theory, individuals choose between benefits available to them from income-maintenance programs and those available to them in the marketplace, such as wages. Available evidence strongly supports that increases in welfare payments, all else constant, increase welfare entries, decrease welfare exits, and in turn increase the welfare caseload (Albert, 1988; Albert & King 1999; Hutchens, 1981; Plotnick & Lidman, 1987). Therefore, assuming individuals choose to maximize their income, individuals will choose welfare over work as welfare benefits (TPs) increase, everything else being constant; in turn, the CR increases. In the present study, combined welfare benefits include both AFDC/CalWORKs and food stamp benefits because recipients' purchasing power is best captured when both benefits are included. In real terms, over the study period, maximum aid plus food stamp benefits decreased by \$1.11 per month. This decrease occurred partially because maximum aid was cut in absolute terms and partially because benefit levels did not keep up with inflation.

**Welfare Policies in the 1990s.** A measure frequently used by other researchers to determine the effect of policy initiatives or programs on welfare caseloads is a dummy variable representing the presence or absence of a policy or program (Albert & King, 1999; O'Neill, 1990). Dummy variables are preferred measures by researchers who are interested in determining the average rather than gradual effect of policies on caseloads. Each waiver granted to California by the federal government and CalWORKs's provisions were to be implemented at the same time across the state rather than gradually.

In this study two dummy variables capturing policy shifts are used to determine the average effect of welfare policies on the welfare CR. One dummy variable, which takes a value of 1 in all months from September 1993 onward, captures the provision that allowed California to extend the \$30 and one-third disregards beyond the first four months of work. It also captures the effects of other

waivers received during the same period, including those that expanded the work-related services and emphasized parental responsibility (WAIVERS). The other dummy variable began on January 1998 when PRWOA was implemented in California under CalWORKs. Among others, the second dummy variable captured CalWORKs work-related provisions, including its \$225 and 50 percent disregards and substantial work requirements.

The effect of welfare policy shifts of the 1990s on welfare caseload is indeterminate. On the one hand, all else constant, work requirements and incentives accompanying the waivers may have decreased the CR because more people became economically self-sufficient in response to such policies. On the other hand, the CR may have increased in the presence of welfare waivers because more recipients were able to take jobs and combine work and welfare, thus retaining eligibility for longer than if these policies had not existed. The caseload also may have increased in the presence of policy changes, perhaps because some individuals who would have left welfare decided to remain to take advantage of available work incentives and employment-related services.

### Economic Variables

**Wages.** The variable capturing monthly gross earnings from full-time minimum wage employment is incorporated in the model. This variable represents the minimal standard of living provided by full-time employment in the private economy. Controlling for inflation, on average, minimum wage from full-time employment increased by about \$0.26 per month during the study period. The evidence from past research regarding the effect of this variable on caseload is mixed. Some evidence suggested that this variable is negatively linked to the caseload, whereas other evidence suggested the contrary (Albert, 1988; Albert & King, 1999). This variable is hypothesized to vary negatively with caseload.

**Employment.** Some studies reveal that, aside from wages, the size of the welfare caseload also depends on other choices or opportunities available to welfare participants in the labor market (Albert, 1988; Albert & King, 1999). Traditionally, the measures used to capture the effect of the business cycle on caseload growth include either unemployment or employment rates. Economic growth often is measured by growth in overall employment level. According to Hoynes (1996), employment better captures demand conditions in the labor market than unemployment does. A term representing the civilian employment rate (EMP RATE), therefore, is



integrated in the model. During the study period, the number of employed people in California grew by about 24,116 people per month, which corresponds to an average increase of 0.0308 percent per month. A set of lagged employment rate variables are integrated into the model to account for a delayed response on the part of individuals leaving or entering welfare as a result of changes in labor market conditions. It is expected that, all else constant, this variable, consisting of several lags, is negatively related to the size of the caseload.

## KEY FINDINGS

The regression equation explains more than 99 percent of the variance in monthly natural logarithm of the CR. During the study period the standard error of estimate was 5.8 percent of the average of the dependent variable. The Durbin-Watson test statistic allows us to infer that there is no first-order serial correlation present. Finally, during the study period, the monthly average of the dependent variable, the CR, was 0.08342. In other words, on average, each month about 8.342 percent of females of childbearing age in the population were heads of households on welfare.

The first part of Table 2 contains information for the entire study period January 1983 to December 1998. The second part contains information during the waiver and CalWORKs period, which lasted from September 1993 to December 1998. During most of this period, California's economy had sustained almost an unprecedented growth, while the state's caseload experienced unprecedented decline. In the first part of the table, the coefficients and the *t* test statistics associated with each independent variable for the entire study period are presented. All else constant, each of these coefficients estimates the percentage change of the CR (the dependent variable), associated with a unit change in the corresponding independent variable. The second part of the table presents the average value of each independent variable, the historical average monthly change of each independent variable, and the monthly percentage change in the CR associated with the independent variables.

Taken together, these figures allow us to estimate the effect of the economy versus policy changes on the caseload from September 1993 to December 1998. A simple comparison of the size of each coefficient over the entire study period would not allow us to determine the estimated historical effect of each variable on the CR. A larger coefficient could be associated with a variable that had a smaller effect

than one with a smaller coefficient. For example, suppose variable *W* has a coefficient of 0.4 percent per unit change in *W* and variable *X* has a coefficient of 0.1 percent per unit change in *X*. Furthermore, suppose over some period, *W* changes on average by two units per month and *X* changes on average by 10 units per month. The average effect on the CR of *W* would be 0.8 percent per month (0.4 percent per unit change times two units per month) increase in the CR; while the average effect of *X* would be 1.0 percent per month (0.1 percent per unit change times 10 units per month) increase in the CR.

In general, when a single variable's coefficient is multiplied by its historical average monthly change during some time period, an estimate is obtained, all else constant, of the average monthly percentage increase in the CR associated with that variable. Such results are presented in the last column of Table 2. Using these products, we can compare the estimated historical effect of each variable on the caseload.

In the subsequent discussions, three periods are of interest: (1) the recessionary period from June 1990 to January 1994; (2) the period capturing California's waivers and CalWORKs program from September 1993 to December 1998; and (3) the entire study period from January 1983 to December 1998. During the recession the percent change in the CR averaged 0.52 percent per month. The rate is positive because during the recession the caseload was rising. The corresponding figure during the waiver period was -0.499 percent per month, which is negative because caseload was falling. Over the entire study relative growth rate averaged -0.055 percent.

## Programmatic Variables

**Total Payments.** Table 2 reveals that TPs has the expected positive sign and is statistically significant ( $p < 0.05$ ). Over the entire study period, the coefficient of total payments indicates that each \$1 per month increase in total payments is associated with a 0.01335 percent increase in the CR. During the study period, however, total payments actually decreased in real terms by \$1.11 per month. The historical net effect of this decrease in total payments is estimated to be associated with a decrease in the CR, all else equal, of 0.0148 percent per month (0.01335 percent per dollar (-\$1.11 per month)). During California's 1990s recessionary period, total payments fell by an average of \$2.36 per month, which is associated with a 0.0315 percent per month decrease in the CR. During the subsequent economic recovery

**TABLE 2—Semilog Linear Model of Welfare Caseload (Study Period: January 1983 to December 1998; Waiver and CalWORKs Period: September 1993 to December 1998)**

Variable	Lag	Coefficient (T stat)	Mean Values per Month	Historical Monthly Change	Change in Caseload Rate Associated with Historical Monthly Change in Independent Variables (%)
Constant	0	0.10568 0.20202			
Waiver	0	-0.0042107 -0.76322			
CalWORKs	0	0.0010156 0.18081			
Total payments	1	0.00013350 2.3239*	\$803.14	-\$1.29	-0.0173
Minimum wage	0	-0.000052844 -2.2985**	\$840.27	\$2.87	-0.0152
Minimum wage	1	-0.000040637 -1.7329**	\$837.41	\$2.88	-0.0117
Employment rate	0	-0.46026 -4.0280**	0.92709	0.0005743	-0.0264
Employment rate	1	-0.28921 -2.2882**	0.92651	0.0006434	-0.0186
Employment rate	2	-0.53478 -3.9765**	0.92587	0.0005991	-0.0320
Employment rate	3	-0.76620 -5.7188**	0.92527	0.0005155	-0.0400
Employment rate	4	-0.45875 -3.6239**	0.92475	0.0005334	-0.0245
Employment rate	5	-0.21953 -1.9524**	0.92422	0.0005213	-0.0114
R <sup>2</sup> (adjusted)		... 0.998			
Durbin-Watson		... 2.29			
F test for model		... F(13, 166) = 7204.9			

NOTE: \*Variable's coefficient is statistically significant ( $p < .05$ ). \*\*Because minimum wage and employment rate were lagged, an  $F$  test was performed for each of these variables. For minimum wage, lags 0 and 1,  $F(2, 166) = 3.04$ . For employment rate, lags 0 to 5,  $F(6, 166) = 7.08$ . Both  $F$  tests were statistically significant ( $p < .05$ ).

period, total payments fell by \$1.29 per month, which is associated with a 0.0173 percent per month decrease in the CR. The latter figure is only 3.5 percent of the actual relative decline rate of the CR during that period. Generally, because total welfare payments in real terms decreased during the study period, the model estimates that this is associated with a decrease in the CR in times of economic contraction and growth. The amount, however, is slight.

**Welfare Policies.** The effect of welfare waivers and of CalWORKs on the welfare caseload is captured by the waiver dummy variable (WAIVER) and the CalWORKs dummy variable. From September

1993 to December 1998, calculations reveal that, on average, the policy changes accompanying the waivers were associated with a decrease of the CR of 0.42 percent. During this period the effects of CalWORKs program were opposite: an associated increase with the average CR of 0.10 percent. During this period the percentage of women of child-bearing age heading families on welfare fell by almost 27 percent.

Overall, the effect of welfare policies on CR was very modest. Finally, and very important, the coefficients of the dummy variables are found to be statistically insignificant. Much caution, therefore,

should be used in interpreting the outcomes of the waiver and the CalWORKs program.

### Economic Variables

**Wages.** The ongoing minimum wage has an expected negative sign, indicating that an increase in the minimum wage is associated with a decrease in the CR. Minimum wage is lagged. The wage variable with lags of zero and one is jointly statistically significant [ $F(2, 166) = 3.04, p < 0.05$ ]. Because minimum wage increased in real terms during the study period by \$0.26 per month, the net effect of this variable on the CR is estimated to be associated, on average and all else constant, with a decrease of 0.0024 percent per month in the fraction of women on the caseload. During the recession minimum wage fell by \$2.16 per month. The model estimates that less than 4 percent of a 0.528 percent per month increase in relative growth rate of the fraction of women on welfare was associated with the decrease in minimum wage. During the economic recovery period, minimum wage increased by \$2.87 per month, and the relative growth rate of the CR decreased by 0.499 percent. The model estimates that 5.4 percent of that decrease was associated with the increase in income from a full-time minimum wage job. The negative association of minimum wage with the CR found here is consistent with previous findings (Albert, 1988).

**Employment.** The other economic variable in the model is the employment rate during the month. This variable captures some of the economic experiences of welfare participants in the marketplace. It has the hypothesized negative sign as indicated by each employment rate variable lagged negative coefficient. Calculations reveal that the lagged variables are jointly statistically significant ( $p < 0.01$ ). During the time of recession, with falling employment rates, the calculations reveal that the employment rate was associated with a 0.274 percent per month increase in the growth rate of the CR. In fact, this increase is 52 percent of the total increase in the relative growth rate. During the waivers and CalWORKs period, September 1993 to December 1998, the growth of California's economy, all else equal, is associated with a monthly decrease in the relative growth of the CR.

The estimated effect of California's growing economy on the CR is sizable. From September 1993 to December 1998, the model estimates that associated with this economic growth, the relative growth rate of the CR decreased, on average, by 0.153 percent per month. The effect is slightly more

than 30 percent of the historic decrease in the dependent variable, the CR. A clearer picture of the substantial effect of employment on the caseload is obtained when the following example is considered. From September 1993 to December 1998, California added 1,467,300 jobs to its economy with the employment rate increasing from 0.910 to 0.936. During that time the CR decreased from 9.82 percent to 8.22 percent, a 16.3 percent decrease. Using forecasting techniques, all else constant, the findings suggest that this growth in the economy was associated with the caseload falling by 148,700 cases.

The substantial effect of the economy on the CR is discerned when it is compared with the effect of welfare policies associated with waivers or CalWORKs. Between September 1993 and December 1998, had the waivers not been in effect, the model suggests that the caseload would have been only 30,750 cases lower and had CalWORKs not been in effect, 7,320 cases higher. (Recall that the effects of the waivers or CalWORKs should be viewed with caution because they were statistically insignificant.) In comparison, during the time the waivers and CalWORKs were in effect, economic growth was associated with almost five times the reduction associated with the waivers or CalWORKs.

### SUMMARY AND FUTURE DIRECTIONS

For this study the recent growth and subsequent decline in California's welfare CR were accounted for by using a dynamic monthly model with programmatic and lagged economic variables. The results suggest that, on an aggregate level, California's waivers, which mainly aimed to move recipients to the labor force by providing them with work incentives, played a very modest role in shaping the size of the welfare caseload. The findings were statistically insignificant. Such findings are consistent with some earlier findings which suggested that economic conditions, rather than welfare policies, account for most of the caseload reductions nationwide (CEA, 1997; Ziliak et al., 1997).

Reductions in welfare caseloads associated with work incentives, such as those found under the 1990s waivers, could prove to be quite challenging in states such as California. California, as some other states, offers relatively high welfare benefits. In relatively high-benefit states, work incentives offered through liberal grant reductions require that participants have greater gross earnings to become welfare ineligible. Presently, many states, including California, allow working participants to keep a larger portion of their benefits as their earnings increase than was the case



before the inception of the PRWOA. In California the benefit reduction rate is 50 percent, rather than the 67 percent it was before CalWORKs.

Under the present TANF system, California's and other states' liberalization in grant reduction creates more incentives for participants to take jobs but not necessarily to leave welfare. In other words, the way in which earnings are treated in combination with the new mandatory work requirements may increase the proportion of working recipients but not necessarily reduce the caseload in response to these incentives. But the transitional nature of welfare under CalWORKs may dominate the effects of the work incentives and mean substantial reductions in the caseload in the next few years. Although the findings show that CalWORKs' effect on the caseload is minimal and statistically insignificant, it should be kept in mind that this program was only in existence for about one year during the study period. The long-term effect of CalWORKs is yet to be determined. But it is reasonable to expect that the effects of time-limited welfare on caseload reductions will be substantial, because terminations will be enforced regardless of economic or other considerations.

In part, concerns about long-term welfare dependency provided the primary reason for the recent and dramatic provisions under the federal PRWOA. Most state and local efforts have been concerned with reduction of welfare caseloads and not necessarily with the elimination of barriers to employment, which are prevalent among people on welfare for a long time. This study showed that in favorable economic conditions, a large proportion of eligible families do not turn to welfare. The effect of the economy on the caseload may be particularly pronounced in California because compared with other states, job opportunities in the service industry declined substantially during the 1990s recession and increased sharply during the state's economic recovery.

Policymakers nationwide need to recognize that because the economy plays such a major role in shaping the welfare caseload, drastic measures such as time-limited welfare may not be necessary. A favorable economic environment allows many recipients to remain off public assistance without the presence of time-limited welfare. Policymakers need to pay particular attention to the fraction of the caseload that does not leave during economic upturns. States need to turn their attention to strategies to help the hardest to employ, many who are long-term recipients. Special casework services and work-related strategies could be used by states to try to employ the people with barriers to employment.

Nationwide, with favorable economic conditions accounting for a substantial portion of the downward trend in welfare caseloads, policymakers are confronted with what might happen to many welfare families when the inevitable downturn in the economy occurs. A downturn in the economy may occur around the same time that federal time limits are in effect for some families. During such times federal and state policymakers may need to relax the federal time limits to more than 60 months or possibly increase the fraction of the caseload who can be exempted from time limits. This is similar to what has been done with unemployment insurance in recessionary periods.

Presently, policymakers in some states have implemented extension policies of time limits that address the situation of recipients who look for work but cannot find it in the midst of high unemployment rates. Such extensions need to occur wherever economic downturn occurs. Under PRWOA, states also are allowed to exempt 20 percent of their caseload from the 60-month federal time limit. States decide who shall be exempted. Common exemptions include advanced age of the parent or disability. An additional exemption could be the inability to find employment.

The ramifications of future economic downturns are also for the financing of welfare programs nationwide. When an unfavorable economic environment exists, caseloads are very likely to increase substantially. This means that some of the surplus funds states presently hold because their caseloads have decreased should be set aside to provide a cushion for the next economic downturn. That is indeed the strategy taken by the state of New York. New York's Governor George E. Pataki's administration wants to set aside funds to provide a cushion for the next economic downturn. Some of the unspent funds also can be spent on job training, transportation, and child care. Such spending will ease the transition to work and allow some of those who leave public assistance to assume and maintain economic self-sufficiency. A recent study about welfare leavers conducted by the Urban Institute revealed that many leavers were having a difficult time having ends meet and that a fair number were considering returning to welfare. Using unspent monies on job training could prove to be a long-term investment on the part of states.

Overall, the recent declines in welfare caseloads have created an opportunity for states and the federal government to re-evaluate their welfare policies. States can rethink their long-term strategies of

helping those with the greatest employment barriers and assist many recipients in gaining employment that allows them to be economically self-sufficient. Finally, and very important, states and the federal government can re-evaluate the overall purpose and design of the federally imposed time limits for welfare benefits. ■

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## APPENDIX A: VARIABLE DEFINITIONS, CONSTRUCTION, AND SOURCES

**CR(t)** = The number of Aid to Families with Dependent Children-Family Group/CalWORKs Caseload divided by number of females aged 15 to 44 during month t. Welfare caseload data were provided by the California Health and Welfare Agency, Department of Social Services, Statistical Services Branch, Aid to Families with Dependent Children-Cash Grant Caseload Movement and Expenditures Report, Sacramento. Annual demographic data were provided by the California Department of Finance, Population Research Unit. Demographic data were interpolated to monthly values.

**TP(t)** = total payments, or AFDC plus food stamp benefits for a family of three (t) deflated by the California Necessities Index (CNI) 1998 = 100. AFDC maximum aid values were provided by California Health and Welfare Agency, Department of Social Services, Statistical Services Branch, Sacramento. Food stamp benefits were calculated by using Thrifty Food Plan amounts allotted to a family of three. Thrifty Food Plan values were provided by the U.S. Department of Agriculture, Food and Nutrition Services, Washington, DC.

**WAIVERS(t)** = welfare waivers are represented by a dummy variable, beginning in September 1993, at month t.

**CalWORKs(t)** = California's welfare reform program under PRWOA, which began in January 1998, at month t.

**MW(t)** = gross earnings from full-time minimum wage employment at t, deflated by the CPI-W, 6/1998 = 100. The data were provided by the State of California, Department of Industrial Relations, Industrial Welfare Commission, San Francisco.

**EMPRATE(t)** = seasonally unadjusted number of employed divided by the labor force during the month. Numbers were provided by the California Health and Welfare Agency, Employment Development Department, Report LF101, Employment Data and Research Division Estimates, Economic Research Group.

**CPI-W(t)** = California Consumer Price Index for Urban Wage Earners and Clerical Workers (t). This is a measure of the average change in prices of fixed market basket of goods. It is based on the costs of food, clothing, shelter, transportation, and other day-to-day living expenses. Data for the CPI were provided by the California Department of Finance, Financial Research Unit, Sacramento.

**CNI(t)** = California Necessities Index (t). This measure of price changes for selected components of the CPI follows changes in the prices of clothing, food, fuel, utilities, and transportation. It does not include medical care or mortgage interest rates. Data for the CNI were provided by the California Department of Finance, Financial Research Unit, Sacramento.

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