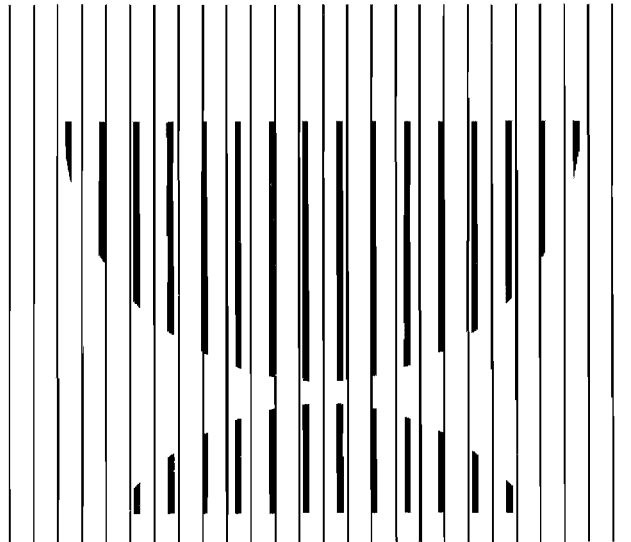


# **CBO STAFF MEMORANDUM**

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FORECASTING AFDC CASELOADS, WITH  
AN EMPHASIS ON ECONOMIC FACTORS

July 1993



CONGRESSIONAL BUDGET OFFICE  
SECOND AND D STREETS, S.W.  
WASHINGTON, D.C. 20515

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## NOTES

Numbers in the text and tables of this memorandum may not add to totals because of rounding.

All years in the text are calendar years, except for those in the section on Projecting AFDC Caseloads, 1993-1995, which are fiscal years.

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This Congressional Budget Office (CBO) Staff Memorandum analyzes growth in the number of families who receive payments from the Aid to Families with Dependent Children (AFDC) program. In particular, it focuses on the economy's effects on AFDC. To estimate these and other demographic and policy effects, CBO has developed a model that can be used to explain past growth in the program and to project future growth. This memorandum was prepared in response to a request from the Subcommittee on Human Resources of the Committee on Ways and Means.

This memorandum was written by Janice Peskin of the Human Resources and Community Development Division (HRCD), under the direction of Nancy M. Gordon and Ralph E. Smith; John Tapogna of the Budget Analysis Division, under the direction of C.G. Nuckols and Charles Seagrave; and David Marcotte, who was a summer intern in HRCD. Kimberly Guise, Mark McMullen, Jennifer Mezey, and Tahirih Senne assisted in the data development; Kimberly Guise and Julia Jacobsen prepared the figures. Jay Noell provided valuable comments. Sharon Corbin-Jallow prepared Tables D-2 and D-3. The manuscript was edited by Sherry Snyder and prepared by Jill Bury.

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## SUMMARY AND INTRODUCTION

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In the second half of 1989, the caseload in the Aid to Families with Dependent Children (AFDC) program began to increase at a rapid rate (see Figure 1).<sup>1</sup> Since then, the number of cases has risen by 1.2 million, or one-third, to 5.0 million in April 1993.<sup>2</sup> After escalating throughout 1990 and most of 1991, growth of the caseload began to taper off at the end of 1991. By the first quarter in 1993, the annual growth rate had declined to just under 5 percent from more than 10 percent in late 1991.

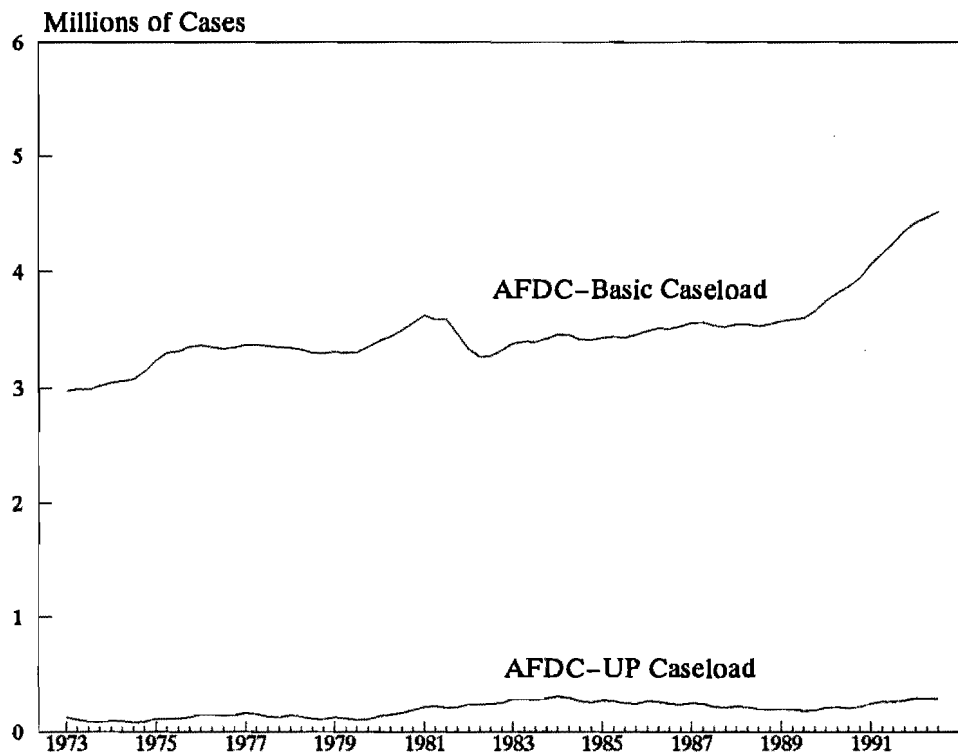
The caseload's sharp rise took welfare analysts by surprise. During most of the 1980s, the AFDC caseload had increased only moderately. From 1983 to 1989, the number of AFDC cases increased by an average of only 17,000 a year, or less than 0.5 percent, despite demographic pressures that on their own would have caused larger increases. The unemployment rate fell substantially beginning in 1983 and continued to decline until early 1989, however, slowing the increase in the AFDC caseload.

Moreover, forecasters were unable to explain the upward surge either in AFDC caseloads or in the numbers of recipients of other transfer programs such as the Food Stamp program. For example, the multivariate regression models that the Congressional Budget Office (CBO) had used successfully for a decade to project AFDC caseloads significantly underestimated caseload growth. The model for the AFDC-Basic caseload predicted only about one-third of the actual growth during the 1990-1992 period, and the AFDC-Unemployed Parent (UP) model predicted about three-quarters.

Why have AFDC caseloads grown so rapidly since 1989? The slowdown in the economy certainly accounts for some of this growth, but how much? And will caseloads decline as the economy continues to improve? This memorandum seeks to answer these questions, primarily by developing new multivariate regression models that explain, and forecast, changes in AFDC caseloads.

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1. The AFDC program provides cash payments for needy children (and their mothers or other caretaker relatives) who have been deprived of support because of a parent's absence, death, incapacity, or unemployment. Most children who receive AFDC payments are in single-parent families, usually headed by women. These families form the major portion of the "AFDC-Basic" caseload. The "AFDC-Unemployed Parent" caseload is made up of two-parent families in which the primary earner works fewer than 100 hours a month.
  2. This memorandum is based on data through the third quarter of 1992, the latest available when the analysis was undertaken.

**Figure 1.**  
**AFDC Caseloads**



**SOURCE:** Congressional Budget Office using data from the Administration for Children and Families.

**NOTES:** AFDC is the Aid to Families with Dependent Children program. The AFDC-Basic caseload consists primarily of single-parent families headed by women. The AFDC-Unemployed Parent (UP) caseload consists of two-parent families in which the primary earner works fewer than 100 hours a month.

Data for the analysis of the AFDC-UP program exclude states that established these programs in or just before October 1990 in accordance with the Family Support Act of 1988.

During the recent period of rapid growth in AFDC caseloads--the third quarter of 1989 to the third quarter of 1992 (1989:3 to 1992:3)--Basic cases increased by 920,000, or an average of 305,000 a year (see Table 1). Growth in the number of female-headed families, especially those headed by women who never married, explains 530,000, or over one-half, of the increase, although CBO's model probably overstates this effect. Both the recession and the weak economy that preceded and followed the recession explain 235,000, or just over one-quarter, of the increase in cases. The remainder--about 15 percent or an increase of 155,000 cases--is not explained by CBO's model but can probably be attributed to two general factors. One is the unusual nature of the latest recession, which hit particularly hard the service sector in which most women work and raised unemployment most in the Northeast region and in California, where there are disproportionately large numbers of families eligible for AFDC. The other is policy changes, such as the Immigration Reform and Control Act of 1986 and Medicaid outreach initiatives, that brought new families onto AFDC. Important changes in the Family Support Act of 1988 may also have contributed to rising caseloads in the short run.

In contrast, 70 percent of the increase in the UP caseload during the period of rapid growth is explained by the economic downturn. As with Basic cases, however, a considerable portion of the increase is not explained by the model.

The sources of change in AFDC caseloads during the slow growth period of the 1980s provide an interesting counterpoint to the period of rapid growth. Although the growth in female-headed families would have led to an average annual increase of 100,000 in Basic cases, the expanding economy offset 55 percent of this upward pressure. Moreover, demographic factors appear to have expanded the Basic caseload more in the early 1990s than in the 1980s. Recently, the number of families headed by women has been rising more rapidly, and mothers who have never married are accounting for more of that increase. As a result, formation of female-headed families was responsible for an average increase of 175,000 a year in Basic cases in the early 1990s, according to the CBO model.

Looking ahead to the 1993-1995 period, the CBO model predicts an increase of almost 400,000 in the Basic caseload, or an average of 130,000 a year--well above the caseload's growth during the economic expansion of the 1980s (see Table 1). The model also predicts a slight drop in the UP caseload. Expansion of the economy will cause both caseloads to decline, holding other factors constant. The moderate pace of the expansion forecast by CBO, however, will result in a smaller decline in caseloads than in earlier expansions. And, of course, other factors are not constant. The growing number of female-headed families is projected to expand the Basic caseload by an average of

TABLE 1. FACTORS RESPONSIBLE FOR THE CHANGES IN THE AFDC CASELOAD, 1983-1995 (In thousands)

Factor	Period of Slow Growth, 1983:3 to 1989:3	Period of Rapid Growth, 1989:3 to 1992:3	Projection, 1992:3 to 1995:3 <sup>a</sup>
<b>Total Change</b>			
AFDC-Basic Caseload	200	920	390
Female-headed families <sup>b</sup>	590	530	560
Employment gap <sup>c</sup>	-325	235	-95
Other <sup>d</sup>	-65	155	-70
AFDC-UP Caseload	-95	100	-5
Employment gap <sup>c</sup>	-100	70	-25
Other <sup>d</sup>	5	25	20
<b>Average Annual Change</b>			
AFDC-Basic Caseload	35	305	130
Female-headed families <sup>b</sup>	100	175	185
Employment gap <sup>c</sup>	-55	80	-30
Other <sup>d</sup>	-10	50	-25
AFDC-UP Caseload	-15	35	e
Employment gap <sup>c</sup>	-15	25	-10
Other <sup>d</sup>	e	10	10

SOURCE: Congressional Budget Office.

NOTES: Estimates are based on the regressions (including earnings) for the 1973:1-1991:3 period, except for the projections, which are based on regressions for the period through 1992:3.

Data for the analysis of the AFDC-Unemployed Parent program exclude states that established these programs in or just before October 1990 in accordance with the Family Support Act of 1988.

- a. This projection is based on an intermediate assumption about changes in the number and composition of female-headed families.
- b. This variable is the number of families headed by women with their own children under age 18, multiplied by the ratio of never-married mothers to mothers who had been married.
- c. The employment gap is the percentage difference between the economy's potential and actual employment levels, as measured by CBO.
- d. Consists of the effects of changes in real AFDC benefits, real earnings, autocorrelation corrections, and unexplained variation.
- e. Less than 2,500.

185,000 cases a year under one assumption about the growth of such families. A major cause of this expansion is expected to be more first births to never-married mothers, caused by faster growth in the number of teenagers, who account for one-half of all such births.

The newly developed CBO models account for most of the recent upsurge in caseloads that has puzzled policymakers; they are thus a major improvement over CBO's previous models. Nonetheless, enough data inadequacies, statistical problems, and specification errors exist in these analyses to argue for caution in interpreting the results. The models were developed primarily as forecasting tools and are probably more accurate in that role than in portraying precise relationships between AFDC caseloads and their determining factors.

## MODELING CHANGES IN AFDC CASELOADS

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Many economic and demographic forces, along with changes in policy, combine to determine the number of families receiving AFDC payments. These many forces may combine to increase caseloads, as when an economic downturn reinforces population growth. Alternatively, a period of strong economic expansion or program cuts may cancel the effects of population growth, resulting in relatively stable or, more rarely, decreasing caseloads.

Moreover, economic and demographic forces may differ sharply from state to state. Recessions and economic growth have affected various regions of the country quite differently, and population pressures have also varied sharply from state to state. In conjunction with AFDC benefit levels and other program parameters that differ widely among states, economic and demographic forces may lead to very different changes in caseloads among states.<sup>3</sup> During much of the 1980s, caseloads in some states increased sharply and declined in others. Changes in the U.S. caseload reflect these diverse trends among the states and thus may be difficult to explain without examining individual state trends.

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3. For more detail on changes in AFDC caseloads among states through early 1991, see Congressional Budget Office, "A Preliminary Analysis of Growing Caseloads in AFDC," CBO Staff Memorandum (December 1991).

## Factors Determining Changes in Caseloads

The CBO model of AFDC caseloads is based on theoretical relationships between caseloads and the economic, demographic, and policy or programmatic factors that affect them.

Economic Factors. A variety of economic forces can affect AFDC caseloads, but two are critical: the state of the economy over the business cycle, and the earnings (coupled with fringe benefits) of lower-income workers. The state of the economy signals the availability of jobs for those people who, if not working, would be receiving AFDC. During recessions, fewer jobs are available, resulting in an increase in AFDC caseloads.

Even when jobs are available, however, families eligible for AFDC must decide between work and welfare. Both work in the market for pay and welfare provide a package of cash and noncash benefits and entail costs that AFDC recipients and potential recipients can compare in deciding between work and welfare. In this framework, an increase in potential earnings, other things equal, causes AFDC caseloads to decline as more recipients choose to work for pay. Because this analysis focuses on the economic factors that affect caseloads, these relationships are discussed in more detail later.

Demographic Factors. Increasing population naturally brings with it an increasing AFDC caseload, but changes in the composition of the population may play an even more important role. Families headed by women who have children under the age of 18 are the major group eligible to receive AFDC, and their number has been growing as a proportion of all families with children: from 12 percent in 1970 to 26 percent in 1992, when they numbered 9 million (see Table 2). This growth slowed during the 1980s, however, as divorce rates remained relatively stable, compared with the 1970s when divorce rates soared. Thus, annual increases in families headed by women averaged about 215,000 in the 1980s--well below the average annual increases of about 280,000 in the 1970s.<sup>4</sup> In the last two years, however, increases have accelerated sharply, with families headed by women up almost 350,000 in 1991 and 285,000 in 1992.

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4. Growth in the number of families headed by women slowed even more than these data indicate. Improvements in the Census Bureau's estimating procedures in the early 1980s greatly increased the measured number of subfamilies headed by mothers. (Subfamilies are families living in someone else's household--for example, a mother and her children living in the household of the children's grandmother.) In other words, measured growth during the 1980s was too high, and measured growth during the 1970s was probably too low. Moreover, the increase in families headed by never-married mothers is overstated even more because a greater proportion of them live in subfamilies--34 percent compared with 22 percent for all single mothers in 1992.

TABLE 2. COMPOSITION OF FAMILIES WITH CHILDREN UNDER AGE 18

	1970	1980	1990	1991	1992
All Families with Children	29,631,000	32,150,000	34,670,000	34,973,000	35,378,000
Families Headed by Women					
Number	3,415,000	6,230,000	8,398,000	8,745,000	9,028,000
Percentage of all families with children	11.5	19.4	24.2	25.0	25.5
Families Headed by Women Who Never Married					
Number	248,000	1,063,000	2,775,000	3,100,000	3,284,000
Percentage of families headed by women	7.3	17.1	33.0	35.4	36.4

SOURCE: Congressional Budget Office using data from the Bureau of the Census, *Household and Family Characteristics: March 1991*, Current Population Reports, Series P-20, No. 458, and *Household and Family Characteristics: March 1992*, No. 467.

NOTE: Families include primary families, related subfamilies, and unrelated subfamilies. Subfamilies are families living in someone else's household--for example, a mother and her children living in the household of the children's grandmother.

Although divorce rates stabilized in the 1980s, increases in the number of families headed by women who had never married accelerated. In the 1980s, never-married mothers accounted for 79 percent of the growth in all families headed by women, compared with only 29 percent in the 1970s. Thus, the proportion of single-parent families headed by women who had never married increased dramatically--from 7 percent in 1970 to 33 percent in 1990.<sup>5</sup> In 1991 and 1992, the number of families headed by never-married mothers increased even more rapidly, accounting for 81 percent of the growth in all families headed by women. By 1992, families headed by a never-married mother were 36 percent of all families headed by women.

5. Part of this sizable increase reflects the measurement changes noted in footnote 4.

This shifting composition from divorced to never-married mothers points to faster growth in the AFDC caseload, other things being equal. By one estimate, one-half of women under age 20 whose first child was born out of wedlock received AFDC within 12 months after the birth of their first child; more than three-fourths received AFDC sometime during their first five years of motherhood.<sup>6</sup> Other research indicates that mothers who had not been married before they began their first AFDC spell have longer stays on AFDC: 39 percent with stays of 10 years or more, compared with 14 percent for divorced mothers.<sup>7</sup>

Policy or Programmatic Factors. Changes in public policies have also affected the size of AFDC caseloads during the 1970s and 1980s, and they will continue to do so in the 1990s. Quantifying the effects of policy changes on caseloads is often problematic, though, adding to the uncertainty of forecasts.

The cuts enacted in the Omnibus Budget Reconciliation Act of 1981 (OBRA) are the most striking example of how a major policy change by the federal government can affect caseloads. OBRA took effect on October 1, 1981, but some of the changes it mandated were implemented in the succeeding quarter or two by some states. At the time of its implementation, OBRA made about 450,000 families ineligible for AFDC, according to one study, largely because it reduced income and earnings limits.<sup>8</sup>

State policies can also significantly affect AFDC caseloads. Perhaps most important, states set maximum AFDC benefits, which help to determine whether a family is eligible for AFDC on the basis of its income. Although these maximum benefits have risen in nominal terms, their value has been sharply eroded by inflation, making some families ineligible for the program and making the program less attractive for others.

Three other policy changes may have affected caseloads significantly, especially in recent years. First, the Family Support Act of 1988 changed the AFDC program in important ways. Among them was the requirement that all states have an AFDC-UP program beginning in October 1990; before that time, about one-half of the states had no AFDC-UP program. By September 1992, the AFDC-UP caseload in the new states had reached 40,000. The act also created the Job Opportunities and Basic Skills Training (JOBS) program,

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6. Congressional Budget Office, *Sources of Support for Adolescent Mothers* (September 1990), pp. 51-52.

7. David T. Ellwood, "Targeting 'Would-Be' Long-Term Recipients of AFDC" (paper prepared for the Department of Health and Human Services, January 1986), p. 42. Ellwood defines stays as the number of calendar years in which the person received AFDC for at least two months.

8. General Accounting Office, *An Evaluation of the 1981 AFDC Changes: Final Report* (July 1985).



which increased federal funds for work-related programs for AFDC recipients and set participation targets that states had to meet. Based on experimental outcomes for earlier work-related programs as reported by the Manpower Demonstration Research Corporation, JOBS should reduce the caseload modestly. However, in the short run, JOBS could temporarily increase the caseload because entry into a work-related program, especially into the longer-term training and education programs, could slow down exits from AFDC. In addition, the existence of the work-related programs could make AFDC more attractive. Finally, the act instituted transition benefits for child care for a 12-month period after a family left AFDC because its earnings increased; the act also extended similar transition benefits for Medicaid. These benefits should lessen some of the barriers to work for low-income mothers, resulting in a caseload decline in the long run, but they could also increase AFDC entry in the short run by making the program more attractive.<sup>9</sup>

Second, the Immigration Reform and Control Act of 1986 (IRCA), which legalized 2.6 million undocumented aliens, contributed to caseload growth beginning in 1987. Although the act precluded the undocumented aliens from receiving AFDC for a period of five years after their legalization, some of these aliens--no longer fearful of deportation--appear to have claimed benefits for their children who were born in the United States. Analysts in California, which is home to more than half of all IRCA applicants, estimate that the number of AFDC cases composed of such children increased from roughly 20,000 in 1988 to more than 55,000 in 1992. Moreover, the undocumented aliens who were legalized under the act became eligible to receive AFDC in the spring of 1992, which may be causing additional growth in caseloads.

Third, many experts have speculated that changes in Medicaid policies have been a factor in increasing the AFDC caseload. Specifically, some argue that efforts to bring families into the Medicaid program--for example, by placing eligibility workers at sites, other than welfare offices, where low-income families are likely to seek health services--are reaching families who were always eligible but never participated in AFDC. The evidence supporting this theory, based on work by the Urban Institute, is ambiguous.<sup>10</sup> National AFDC participation rates began to rise shortly after the federal government

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9. Because these legislative changes became effective at the time the AFDC caseloads began to rise, they have not been included in CBO's models. If the regressions had included a dummy variable beginning in the fourth quarter of 1989 to measure the effects of the Family Support Act, the variable would probably have measured most or all of the unexplained portion of the growth in AFDC caseloads--whether or not the act accounted for this growth.

10. See Linda Giannarelli and Sandra Clark, Urban Institute, tables presented at the Association for Public Policy Analysis and Management Conference, Denver, Colorado, October 1992.

mandated the Medicaid outreach efforts in 1987. Participation rates stabilized between 1989 and 1990, however, suggesting that Medicaid outreach may not have been a major factor in the recent upward surge in AFDC caseloads. Nonetheless, in Florida, which operated the most extensive Medicaid outreach program in the country, the estimated number of families in AFDC as a fraction of eligible families increased by 20 percentage points from 1987 to 1990. In short, the Medicaid outreach efforts have probably increased AFDC caseloads in a limited number of states with aggressive programs, but appear not to have contributed substantially to the nation's recent growth in caseloads.

### Previous Studies

Surprisingly few studies that develop models of AFDC caseloads exist. Of the dozen that have become available in recent years, all but one develop models of caseloads for individual states. Appendix A provides detailed references for these studies.

Two of these studies have approached the problem by developing and estimating models of case openings and closings, although one of the studies is seriously out of date (Albert, 1988; Lyon, Menchik, and Blais, 1976). The remaining studies seek to explain changes in monthly or quarterly caseloads.

These other models--and CBO's--are similar in overall structure and include independent variables to measure the important economic, demographic, and policy effects. The specific variables used to measure these effects, however, often differ. Certain data available for the nation as a whole, such as the number of female-headed families, are not generally available for individual states.

Although this memorandum makes no attempt to compare systematically the coefficients of the independent variables across these studies, two differences with CBO's estimates stand out. First, several of the studies (Barnow, 1988; Garasky, 1989; Grossman, 1985) found that wages are negatively related to AFDC caseloads, whereas earnings are not statistically significant in the CBO regressions.<sup>11</sup> Second, two of the studies (Garasky, 1989; O'Neill, 1990) found no statistically significant relationship between current unemployment rates or similar cyclical variables and the AFDC-UP caseload, although they are important factors in CBO's model.

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11. The studies noted used various measures of real wages in retail trade and service industries. CBO used real earnings of women (in Basic equations) and of men (in UP equations), aged 18 to 24 or 25 to 34, with exactly four years of high school, who were full-time, year-round workers. CBO did try other measures of earnings, such as retail wages, but none was statistically significant.

The forecasting results of these models, and of the models developed in this memorandum, are relatively similar. Out-of-sample forecasting errors for AFDC-Basic cases are generally less than 2 percent for periods ranging from two quarters to four quarters beyond the estimating period.<sup>12</sup> CBO's four-quarter error of 0.5 percent compares favorably with the results of these other models.

Two of the studies analyzed the accuracy of alternative methods of projecting AFDC caseloads. The method used in one study (Grossman, 1985)--forecasting the caseload for the nation as a whole--was somewhat more accurate than summing the forecasts of caseloads for individual states. In its forecasts for individual states, however, this study did not tailor the time-series regressions to specific states, which would be a monumental job and one that would be difficult to update on a regular basis. The Grossman study also developed time-series cross-section models, which it found to be less accurate than the time-series models. In a study for the state of Delaware (Scholl and Stapleford, 1991), the authors found that techniques other than multiple regression--for example, various types of autoregressive and moving-average processes--performed best during a one-year period of relatively stable caseloads but that a regression model was superior during a period of cyclical change.

## THE CASELOAD MODELS AND GENERAL FINDINGS

Because the primary purpose of the modeling is to forecast AFDC caseloads accurately, CBO's analysis relies on time-series rather than cross-sectional data. Standard multivariate regression analysis is used to estimate relationships between two dependent variables--the AFDC-Basic caseload and the AFDC-UP caseload--and the independent variables theorized above to affect them. The analysis is based on quarterly observations for the 1973:1-1991:3 period.<sup>13</sup>

In addition to using AFDC caseloads as dependent variables, models were developed to explain AFDC case openings and closings. Openings and

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12. Out-of-sample forecasts are forecasts for periods beyond those for which the regression equation is estimated. For example, an equation estimated with data through 1991 would be used to forecast 1992 or later years.

13. Regressions were also estimated for the period through 1992:3, and they were used to forecast caseloads in 1993 and beyond. The regressions including 1992 observations are not discussed in this section for two reasons. First, an important independent variable--real earnings--is not yet available for 1992. Second, the 1992 numbers for female-headed families are partly estimated because they average 1991, 1992, and projected 1993 data. The regression findings including 1992 data are very close to those for the period through 1991:3, except that the coefficients and statistical significance of real AFDC benefits decline noticeably in both the Basic and UP equations.

closings can be combined to estimate changes in the AFDC caseload. These models are less successful in explaining changes in AFDC caseloads, however, because the data on openings significantly underreport the number of families that enter the program. Appendix B presents findings on openings and closings.

### Regression Results

In both the regression of the AFDC-Basic caseload and the regression of the AFDC-UP caseload, most of the independent variables are statistically significant with the expected signs; the adjusted  $R^2$ s exceed 99 percent.<sup>14</sup> Nonetheless, several of the relationships between caseloads and their determinants explored in this analysis are uncertain, particularly those for real AFDC benefits and real earnings. (The variables are defined in Table 3.) Multicollinearity is a serious problem between these variables, with the correlation coefficient for them at 0.80, and also among these two variables and others, particularly the number of female-headed families.<sup>15</sup> The data for many of the independent variables are less than perfect because of definitional problems, gaps in information, and relevance to the problem at hand. Finally, specification error exists in a number of areas. Two such errors stand out: the exclusion of potentially important variables (particularly those reflecting policy changes over the period) because of a lack of appropriate data, and the endogeneity of real AFDC benefits, discussed later.<sup>16</sup> As a result, CBO has more confidence in the forecasting abilities of the models than in some of the individual relationships they suggest.

Regression results are shown for two separate equations: one including real earnings and one excluding real earnings. Because earnings of women by age were found to be statistically insignificant, are not yet available for 1992, and cannot be projected with any reliability, the regression without earnings is used to project caseloads in 1993 and beyond and thus to test the model's accuracy in predicting 1992 caseloads.

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14. The AFDC-UP caseload used here excludes caseloads in those states that were required to start a program by October 1, 1990. These cases are excluded because they entered AFDC after one of the data periods that are used for validating the model (1973:1-1989:4).

15. Multicollinearity exists when two or more variables are highly correlated with each other. Its result is to reduce the reliability of the coefficients of the affected variables.

16. Real AFDC benefits are endogenous in that they not only affect, but are affected by, changes in AFDC caseloads.

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TABLE 3. VARIABLES USED IN THE CASELOAD REGRESSIONS

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Variable	Definition
AFDC-Basic Caseload	Number of Aid to Families with Dependent Children-Basic cases, quarterly averages of monthly numbers.
AFDC-UP Caseload	Number of AFDC-Unemployed Parent cases, quarterly averages of monthly numbers.
Female-Headed Families <sup>a</sup>	Number of families headed by women with their own children under age 18, multiplied by the ratio of never-married mothers to mothers who had been married.
Employment Gap <sup>b</sup>	Percentage difference between the economy's potential and actual employment levels in the current quarter.
Employment Gap <sub>t-n</sub>	Percentage difference between the economy's potential and actual employment levels in a preceding quarter.
Real AFDC Benefits <sup>c</sup>	Maximum AFDC benefit for a family of three, expressed in 1991 dollars; weighted average of state benefits.
Real Earnings of Women, HS, 18-24 <sup>d</sup>	Average earnings of women aged 18 to 24 with exactly four years of high school and who work full time, year-round, expressed in 1991 dollars.
Real Earnings of Men, HS, 18-24 <sup>d</sup>	Average earnings of men aged 18 to 24 with exactly four years of high school and who work full time, year-round, expressed in 1991 dollars.
OBRA	Dummy variable equal to 1 in 1981:4 and all subsequent quarters.
OBRA 1	Dummy variable equal to 1 only in 1981:4.
OBRA 2	Dummy variable equal to 1 only in 1982:1.
Quarter 1	Dummy variable equal to 1 in the first quarter of the calendar year.
Quarter 2	Dummy variable equal to 1 in the second quarter of the calendar year.
Quarter 3	Dummy variable equal to 1 in the third quarter of the calendar year.

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SOURCE: Congressional Budget Office.

NOTES: Data series are shown in Tables D-2 and D-3.

HS = high school; OBRA = Omnibus Budget Reconciliation Act of 1981.

- a. Families equal primary families plus unrelated subfamilies; related subfamilies are excluded because of the revision in estimating procedures by the Bureau of the Census in the early 1980s, which significantly increased the measured number of related subfamilies. The annual data are averaged over three years ( $t-1$ ,  $t$ , and  $t+1$ ) and are interpolated to provide quarterly estimates.
  - b. See the section on the effects of the business cycle for more detail.
  - c. State benefits are weighted by the AFDC caseload in fiscal year 1991. State estimates are by CBO based on data from the Administration for Children and Families and the Congressional Research Service. For years before 1982, CBO estimated the quarter of the year in which a benefit change took place; for 1973 and 1974, CBO estimated changes in the benefit for a family of three based on changes in the benefit for a family of four.
  - d. Annual data are interpolated to provide quarterly estimates. Data for 1973 are estimated using the Current Population Survey of the Bureau of the Census.
-

**Economic Effects.** Three variables capture economic effects: the employment gap, real earnings, and real AFDC benefits. The employment gap, which is the percentage difference between potential employment and actual employment, measures the effects of the business cycle on caseloads. An increase in the gap is associated with a considerable rise in caseloads in both the current quarter and in the following several quarters (see Tables 4 and 5). Higher real AFDC benefits are related to modest increases in caseloads, although they are statistically significant only in the UP equation. Real earnings are not statistically significant in either the Basic or UP equations. These economic relationships are discussed in more detail below.

**Demographic Effects.** Impacts on caseloads from changing demographics are measured in the AFDC-Basic equation by the number of families headed by women with their own children under the age of 18, multiplied by the ratio of never-married mothers to mothers who had been married. The multiplicative weighting was used because the proportion of families headed by mothers who never married has risen dramatically and because more never-married mothers receive AFDC, meaning that a given increase in the number of families headed by women should have had a larger effect on Basic cases over time. As Figure 2 shows, the weighted series rises more rapidly in the 1980s and early 1990s than either the unweighted series on families headed by women with children or the series on families headed by never-married mothers.<sup>17</sup>

Based on the regression findings, an increase of 100,000 in the variable for female-headed families leads to about 56,000 more AFDC-Basic cases. Or, stated another way, about 56 percent of any change in the weighted number of female-headed families are estimated to become AFDC cases.

Year in and year out, this growth in families headed by women and the changing makeup of those families are the most important factors causing the Basic caseload to rise. Over the recent period of rapid growth in caseloads--1989:3 to 1992:3--increases in female-headed families are the primary contributor, based on CBO's regression analysis. Of the increase in the Basic caseload of 920,000, CBO estimates that the growth in female-headed families accounts for about 530,000, or 58 percent.

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17. Alternative regressions were tested using the number of families headed by never-married mothers and by ever-married mothers as separate variables. These variables were not used in the final equations because the separate coefficients were not meaningful. The "never-married" coefficient showed an increase of 102,000 Basic cases for every increase of 100,000 in families headed by never-married mothers; the "ever-married" coefficient showed a decrease in Basic cases of 23,000 for every increase of 100,000 in families headed by ever-married mothers. Both variables were statistically significant.

TABLE 4. RESULTS OF REGRESSIONS OF THE AFDC-BASIC CASELOAD, 1973:1-1991:3

Independent Variable	Regression Including Earnings Variable		Regression Excluding Earnings Variable	
	Coefficient	T-Statistic	Coefficient	T-Statistic
Female-Headed Families	564,231 <sup>a</sup>	15.26**	569,120 <sup>a</sup>	14.34**
Employment Gap	15,800	3.83**	15,516	3.72**
Employment Gap <sub>t-1</sub>	17,410	4.13**	17,245	4.02**
Employment Gap <sub>t-2</sub>	14,757	3.40**	15,879	3.72**
Employment Gap <sub>t-3</sub>	11,264	2.69**	11,689	2.79**
Real AFDC Benefits	457	1.76	355	1.42
Real Earnings of Women, HS, 18-24	-27	-1.35	n.a.	n.a.
OBRA	-469,207	-12.21**	-466,308	-12.05**
OBRA 1	297,903	10.24**	297,317	10.21**
OBRA 2	96,167	6.21**	95,383	6.19**
Quarter 1	21,319	8.68**	20,930	8.70**
Quarter 2	15,755	4.41**	14,966	4.29**
Quarter 3	-10,137	-3.99**	-9,428	-3.84**
Constant	2,910,147	9.35**	2,562,608	15.99**
Autocorrelation Correction--AR(1)	1.57	14.92**	1.62	15.75**
Autocorrelation Correction--AR(2)	-0.66	-5.91**	-0.69	-6.38**
Adjusted R-Squared	0.996		0.996	

SOURCE: Congressional Budget Office.

NOTES: Based on 73 observations; the mean of the dependent variable is 3,448,918. Sample means of the independent variables are listed in Table D-1.

\*\* indicates statistical significance at the 1 percent level.

HS = high school; n.a. = not applicable; OBRA = Omnibus Budget Reconciliation Act of 1981.

a. Reflects the increase in the caseload for every increase of 1 million in the number of female-headed families.

TABLE 5. RESULTS OF REGRESSIONS OF THE AFDC-UNEMPLOYED PARENT CASELOAD, 1973:1-1991:3

Independent Variable	Regression Including Earnings Variable		Regression Excluding Earnings Variable	
	Coefficient	T-Statistic	Coefficient	T-Statistic
Employment Gap	2,811	2.21*	2,828	2.21*
Employment Gap <sub>t-1</sub>	3,076	2.31*	3,120	2.34*
Employment Gap <sub>t-2</sub>	3,953	2.99**	4,248	3.29**
Employment Gap <sub>t-3</sub>	3,844	2.96**	4,001	3.11**
Employment Gap <sub>t-4</sub>	2,995	2.26*	2,670	2.07*
Employment Gap <sub>t-5</sub>	2,089	1.60	1,977	1.51
Real AFDC Benefits	174	2.04*	166	1.96
Real Earnings of Men, HS, 18-24	-5	-1.03	n.a.	n.a.
OBRA	-14,669	-1.18	-16,917	-1.39
OBRA 1	15,277	1.64	17,374	1.90
OBRA 2	9,588	1.92	10,250	2.07*
Quarter 1	18,484	23.02**	18,555	23.27**
Quarter 2	15,427	13.33**	15,459	13.41**
Quarter 3	1,004	1.21	1,124	1.37
Constant	548,742	0.40	534,992	0.34
Autocorrelation Correction--AR(1)	1.56	13.60**	1.57	14.03**
Autocorrelation Correction--AR(2)	-0.56	-4.87**	-0.57	-5.08**
Adjusted R-Squared	0.995		0.995	

SOURCE: Congressional Budget Office.

NOTES: Based on 72 observations; the mean of the dependent variable is 192,787. Sample means of the independent variables are listed in Table D-1.

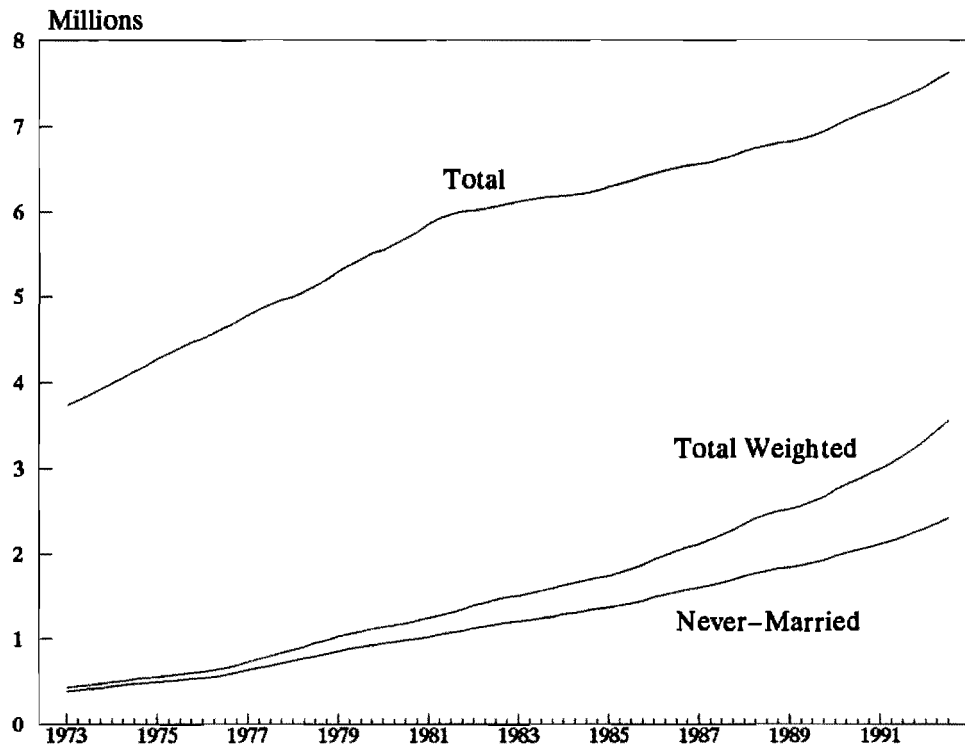
\* and \*\* indicate statistical significance at the 5 percent and 1 percent levels, respectively.

HS = high school; n.a. = not applicable; OBRA = Omnibus Budget Reconciliation Act of 1981.

Data exclude states that initiated the AFDC-Unemployed Parent program in or just before October 1990 in accordance with the Family Support Act of 1988.



**Figure 2.**  
**Families Headed by Women with Children**



**SOURCE:** Congressional Budget Office using data from the Bureau of the Census.

**NOTE:** Total weighted female-headed families is total families headed by women times the ratio of families headed by never-married mothers to families headed by mothers who had been married. This series is used in the regression analysis. Families equal primary families plus unrelated subfamilies. Annual data are averaged over three years ( $t-1$ ,  $t$ ,  $t+1$ ) and are interpolated to provide quarterly estimates.

Sometimes this steady upward pressure on the AFDC caseload from growing numbers of female-headed families can be partially offset by other factors, as occurred during the 1983-1989 period. Although the Basic caseload was growing by a modest 35,000 a year, the increase in female-headed families would by itself have caused the caseload to grow by 100,000 a year. This potentially higher growth was moderated by a rapidly improving economy following the 1981-1982 recession, however, which by itself would have reduced Basic cases by 55,000 a year.

These findings probably overstate the effect of changes in female-headed families on the Basic caseload. The regression result implies that about 80 percent of the increase in the number of families headed by women (unweighted) during 1992 would move onto AFDC, which seems unrealistically high. It may be that some of the recent caseload growth that the model attributes to increases in the variable for female-headed families was really caused by factors left out of the model, including the Medicaid outreach effort and the IRCA changes.

Policy and Programmatic Effects. The regressions included only one policy variable--OBRA, for the implementation of the Omnibus Budget Reconciliation Act of 1981 (the variable for real AFDC benefits is discussed under economic effects). Once the effect of OBRA was fully realized, Basic cases were reduced by about 470,000 based on the CBO model. In the first quarter that it was supposed to have been effective (1981:4), the caseload was about 170,000 lower (OBRA + OBRA 1); in the second quarter (1982:1), it was about 375,000 lower (OBRA + OBRA 2). The effect of OBRA on AFDC-UP cases was less important.

Other Effects. Caseloads change with the seasons, reaching their highest levels in the first quarter of the calendar year and their lowest in the third (Basic cases) or fourth (UP cases) quarters. Although seasonal changes are statistically significant for both the Basic and UP caseloads, they are relatively much more important for the UP caseload, perhaps indicating that they are primarily a function of seasonal employment demands. For example, the UP caseload is almost 12 percent higher in the first quarter of the year than in the fourth quarter, but the Basic caseload is less than 1 percent higher.

### Accuracy of the Forecasts

To test the models' forecasting accuracy, CBO made two out-of-sample forecasts. The first uses the regressions (excluding earnings) shown in Tables 4 and 5, which are based on data through 1991:3, to project caseloads for the following four quarters, 1991:4 to 1992:3. The second estimates identical

equations, but for the period through 1989:4, and uses them to forecast caseloads for the following 11 quarters, 1990:1 to 1992:3. This second test is a very strict one for several reasons. First, the regressions are not based on data from the recent period of rapid growth of the caseload or the related recession, and this is, in fact, why this longer period was chosen. Second, for purposes of short-run forecasting, CBO normally looks only six months to one year into the future--for example, projecting fiscal year 1993 based on actual values for fiscal year 1992. However, CBO must also project AFDC expenditures up to six years into the future.

The model of AFDC-Basic cases performs very well over the four-quarter forecast for fiscal year 1992 (see Table 6). The average absolute error is 0.5 percent, or about 23,000 cases. The forecast almost consistently overestimates the caseload, however, at a time when its growth is declining.

Not unexpectedly, for the longer period covering 11 quarters, the model performs less well. The average absolute error is 3.6 percent, or about 155,000 cases. Moreover, the forecast consistently underestimates the caseload over the period, and by a growing margin until the last three quarters when the underestimate declines (see Table 7). For example, for the first quarter of 1992, the forecast is 5.4 percent, or about 240,000 cases, too low. Of the increase of 860,000 in the number of Basic cases from 1989:4 to 1992:3, the model forecasts only 72 percent of the rise, or an increase of 620,000 cases. Nonetheless, this result still represents a major improvement over the previous CBO model, which predicted only one-third of the rise.

TABLE 6. OUT-OF-SAMPLE FORECAST OF THE AFDC-BASIC CASELOAD, 1991:4-1992:3 (In thousands)

Period	Caseload		Difference	Percentage Difference
	Actual	Forecast <sup>a</sup>		
1991:4	4,349	4,348	-1	b
1992:1	4,420	4,445	25	0.6
1992:2	4,462	4,503	41	0.9
1992:3	4,510	4,537	27	0.6

SOURCE: Congressional Budget Office.

- a. The forecast is based on the regression in Table 4 that excludes the earnings variable. The average absolute error is 23,446, or 0.5 percent.
- b. Less than 0.05 percent.

TABLE 7. OUT-OF-SAMPLE FORECAST OF THE AFDC-BASIC  
CASELOAD, 1990:1-1992:3 (In thousands)

Period	Caseload		Difference	Percentage Difference
	Actual	Forecast <sup>a</sup>		
1990:1	3,739	3,731	-8	-0.2
1990:2	3,808	3,768	-40	-1.1
1990:3	3,861	3,788	-73	-1.9
1990:4	3,942	3,849	-93	-2.4
1991:1	4,050	3,925	-125	-3.1
1991:2	4,154	3,983	-171	-4.1
1991:3	4,243	4,021	-222	-5.2
1991:4	4,349	4,098	-251	-5.8
1992:1	4,420	4,181	-239	-5.4
1992:2	4,462	4,235	-227	-5.1
1992:3	4,510	4,272	-238	-5.3

SOURCE: Congressional Budget Office.

a. The forecast is based on a regression using the same variables (excluding earnings) as in Table 4, but for the 1973:1-1989:4 period. The average absolute error is 153,228, or 3.6 percent.

The model of the AFDC-UP caseload does not perform as well as the model of the AFDC-Basic caseload in 1992, although the errors are so small in absolute terms as to make little difference in the overall picture of caseloads. For the four-quarter forecast, the average absolute error is 4.6 percent, or 13,000 cases (see Table 8). As with the Basic caseload model, the forecast consistently overestimates the caseload in fiscal year 1992 and underestimates it during the 11-quarter period (see Table 9). Of the increase of almost 100,000 in the number of AFDC-UP cases from 1989:4 to 1992:3, the model forecasts just over 80 percent of the rise, a slight improvement over the previous CBO model.

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TABLE 8. OUT-OF-SAMPLE FORECAST OF THE AFDC-UNEMPLOYED PARENT CASELOAD, 1991:4-1992:3 (In thousands)

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Period	Caseload		Difference	Percentage Difference
	Actual	Forecast <sup>a</sup>		
1991:4	270	273	3	1.1
1992:1	288	303	15	5.2
1992:2	290	308	18	6.2
1992:3	282	300	18	6.4

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SOURCE: Congressional Budget Office.

NOTE: Data exclude states that initiated the AFDC-UP program in or just before October 1990 in accordance with the Family Support Act of 1988.

a. The forecast is based on the regression in Table 5 that excludes the earnings variable. The average absolute error is 13,242, or 4.6 percent.

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TABLE 9. OUT-OF-SAMPLE FORECAST OF THE AFDC-UNEMPLOYED PARENT CASELOAD, 1990:1-1992:3 (In thousands)

Period	Caseload		Difference	Percentage Difference
	Actual	Forecast <sup>a</sup>		
1990:1	209	207	-2	-1.0
1990:2	212	206	-6	-2.8
1990:3	206	198	-8	-3.9
1990:4	214	203	-11	-5.1
1991:1	244	231	-13	-5.3
1991:2	259	238	-21	-8.1
1991:3	260	235	-25	-9.6
1991:4	270	244	-26	-9.6
1992:1	288	272	-16	-5.6
1992:2	290	275	-15	-5.2
1992:3	282	265	-17	-6.0

SOURCE: Congressional Budget Office.

NOTE: Data exclude states that initiated the AFDC-UP program in or just before October 1990 in accordance with the Family Support Act of 1988.

a. The forecast is based on a regression using the same variables (excluding earnings) as in Table 5, but for the 1973:1-1989:4 period. The average absolute error is 14,562, or 5.7 percent.

## EFFECTS OF THE BUSINESS CYCLE

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All of the growth spurts in AFDC caseloads since 1973 have taken place during, just before, or just after the period's four recessions. In times of economic growth, the Basic caseload has been relatively stable, decreasing slightly in the late 1970s and increasing moderately in the 1980s (see Figure 3). By contrast, the UP caseload has declined sharply during expansions (see Figure 4).

The AFDC-Basic caseload has shown a more marked increase around and especially following the latest recession than in the previous three recessions. Although the latest recession appears to have been milder than the 1973-1975 and 1981-1982 recessions, the economy has grown much less rapidly in the early stages of the expansion than in the previous recoveries. To what extent can the rapid growth of the caseload be explained by the nature of the latest recession and the following period of slow growth in the economy?

### Measuring the Effects of Business Cycles

To control for changes in the nation's overall economic condition, the model uses current and lagged values of the employment gap, which measures the percentage difference between the economy's potential employment (PE) and actual employment (AE):  $(PE-AE)/PE$ . Figure 5 compares the actual and potential employment levels used to calculate the employment gap.

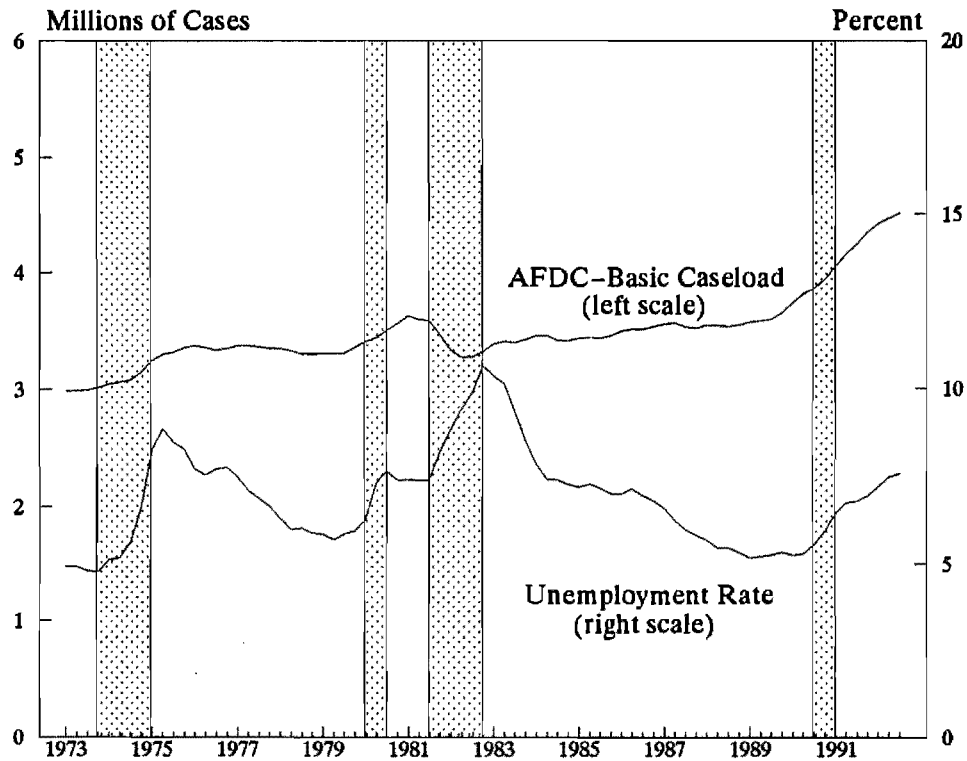
Potential employment is defined as the highest level of employment that could be sustained without increasing the rate of inflation. As measured by CBO, potential employment depends in turn on an estimate of the nonaccelerating inflation rate of unemployment (NAIRU), that is, a rate that excludes cyclical unemployment.<sup>18</sup> CBO's current estimate of the NAIRU is 5.5 percent, but it has been as high as 6.0 percent in the past 20 years. The estimate varies with changes in the demographic profile of the labor force.

In the past, there was no advantage in using the employment gap rather than the unemployment rate to model the effects of business cycles because the variation in the two indicators was almost identical (see Figure 6). However, these variables began to diverge in early 1989 as a result of the very slow growth of the labor force, which economists attribute to an unusually large increase in the number of discouraged workers (former job seekers who stopped looking for work because the job market was weak). Slower growth of the labor force kept unemployment rates relatively constant between 1989:1

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18. See Congressional Budget Office, *The Economic and Budget Outlook: An Update* (August 1987), pp. 97-100.

Figure 3.  
AFDC–Basic Caseload and the Unemployment Rate



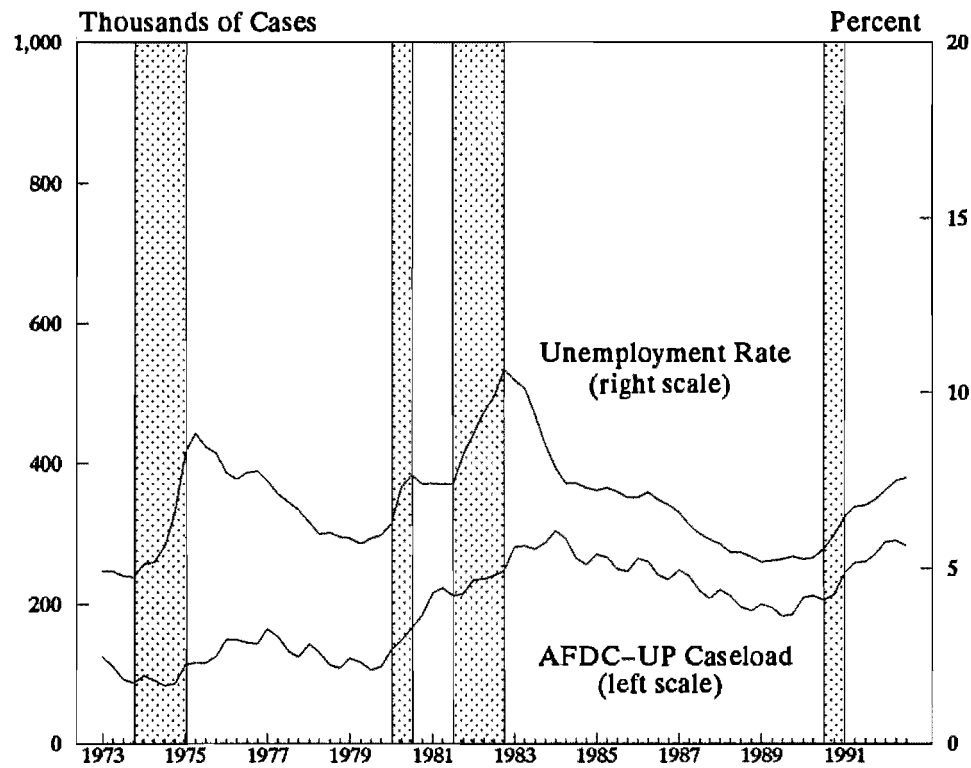
**SOURCE:** Congressional Budget Office using data from the Administration for Children and Families and the Bureau of Labor Statistics.

**NOTES:** AFDC is the Aid to Families with Dependent Children program. The AFDC–Basic caseload consists primarily of single–parent families headed by women.

The shaded areas show periods of recession.



**Figure 4.**  
**AFDC–Unemployed Parent Caseload and the Unemployment Rate**



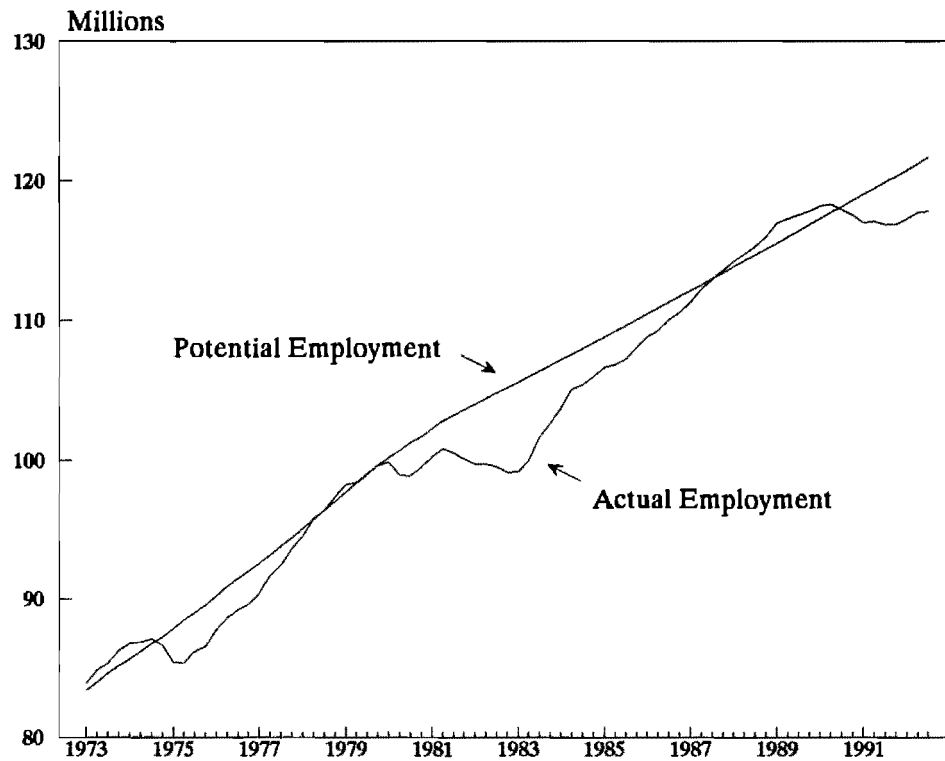
**SOURCE:** Congressional Budget Office using data from the Administration for Children and Families and the Bureau of Labor Statistics.

**NOTES:** AFDC is the Aid to Families with Dependent Children program. The AFDC–Unemployed Parent (UP) caseload consists of two–parent families in which the primary earner works fewer than 100 hours a month.

Data exclude states that initiated the AFDC–UP program in or just before October 1990 in accordance with the Family Support Act of 1988.

The shaded areas show periods of recession.

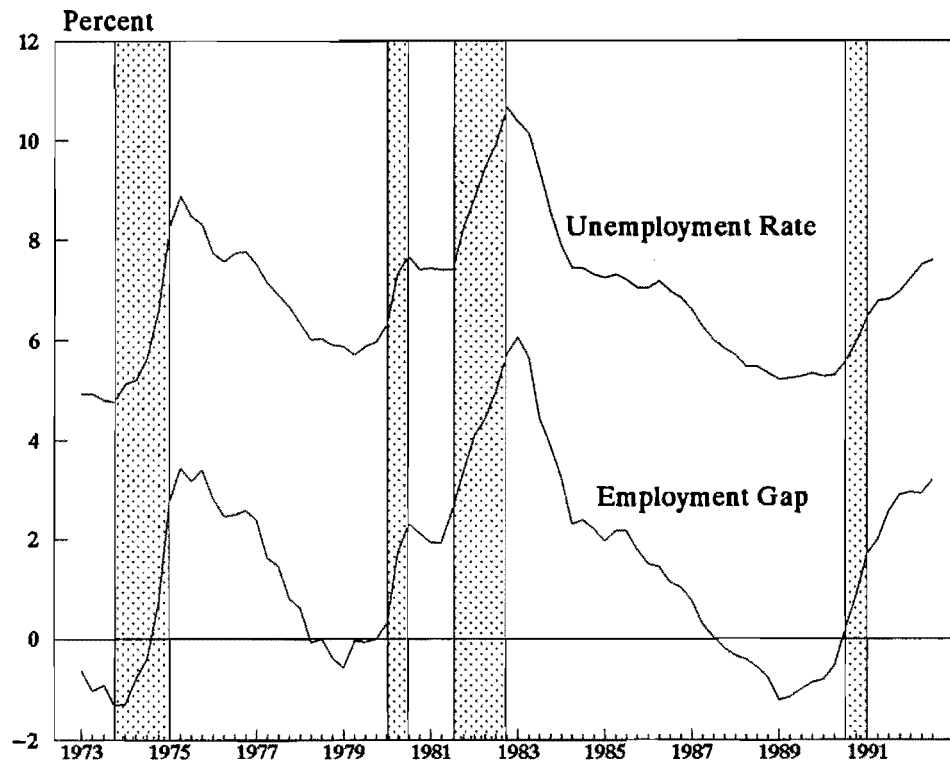
**Figure 5.**  
**Potential Versus Actual Employment**



**SOURCE:** Congressional Budget Office using data from the Bureau of Labor Statistics.

**NOTE:** Potential employment is defined as the highest level of employment that could be sustained without increasing the rate of inflation.

**Figure 6.**  
**Unemployment Rate and the Employment Gap**



**SOURCE:** Congressional Budget Office using data from the Bureau of Labor Statistics.

**NOTES:** The employment gap is potential employment less actual employment, divided by potential employment. Potential employment is defined as the highest level of employment that could be sustained without increasing the rate of inflation.

The shaded areas show periods of recession.

and 1990:2, while the employment gap, which incorporates an assumption of trend labor force growth, began to rise. The gap's upturn in 1989, which indicates a worsening economy, coincided with a period that economists have considered to be one of subpar growth.

Increases in the employment gap have an important and prolonged effect on both the AFDC-Basic caseload and the AFDC-UP caseload. If the gap increases by 1 percentage point, the number of Basic cases is estimated to rise by about 16,000, or 0.5 percent, in that quarter (see Table 4). Moreover, the effect of a one-time rise in the gap lasts for three additional quarters and is actually stronger in the second quarter and only slightly weaker in the third quarter. Thus, an increase of 1 percentage point in the gap that continues for at least three more quarters ultimately raises the Basic caseload by about 60,000 families, or 1.7 percent.

Consistent with past findings, the results indicate that the economy has a stronger and longer-lasting effect on the AFDC-UP caseload. A rise of 1 percentage point in the gap increases the number of UP families by roughly 3,000, or 1.5 percent, in the initial quarter (see Table 5). If the gap remains 1 percentage point higher for five additional quarters, the UP caseload increases by 19,000, or 9.7 percent.

How the latest economic downturn has affected AFDC caseloads is of particular interest. The increase in the employment gap accounts for about 235,000 cases, or 26 percent of the actual growth in the Basic caseload of about 920,000 from 1989:3 to 1992:3, based on the CBO regressions. For AFDC-UP, the regressions attribute to the increased employment gap about 70 percent of the actual increase of 100,000 cases.

### Is This Economic Slowdown Different?

By measuring recent economic performance more accurately, the employment gap provides a clearer picture of the business cycle's role in the growth of the AFDC caseload than does the unemployment rate. The regression results, however, average the effects of all of the business cycles during the 1973-1991 period, whereas the latest economic slowdown appears to differ from earlier slowdowns in ways that would heighten the effect of changes in the employment gap on AFDC caseloads.<sup>19</sup> These peculiarities were not successfully incorporated into CBO's models, but they are noted here because they may explain some of the unusually large rise in AFDC caseloads in the past few years, especially in light of the relative mildness of the latest recession.

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19. Recessions occurred during 1973-1975, 1980, 1981-1982, and 1990-1991.

Weakness in the Economy Before and After the 1990-1991 Recession. The strong growth of the AFDC caseload before and after the most recent recession should not be surprising given the condition of the economy during those periods. Although not technically in recession, the economy experienced a period of slow growth in 1989 and early 1990. In fact, real growth in the gross national product was as slow in the four quarters preceding this recession as in any other similar prerecession period, and slower than in most, with growth of 1.3 percent compared with a 3.3 percent average for comparable periods since 1947.<sup>20</sup>

The sluggish performance continued after the recession's official end in the first quarter of 1991. Between then and the third quarter of 1992, the economy grew at about one-half the rate experienced during comparable postrecession periods.<sup>21</sup> The number of people employed remained almost constant over the period, leaving increased productivity to account for nearly all of the expansion in output. CBO's employment gap variable, which increased almost steadily between 1989:2 and 1992:3, reflects the economy's weak condition in the months surrounding the recession.

Differential Effects on Occupations. Data suggest that the latest recession hit low-income women hard through its adverse effect on service industries. With the exception of the health sector, the job market in service-producing industries has been weak, even by recessionary standards.<sup>22</sup> In fact, total employment in these industries declined by more than 600,000 between 1990:2 and 1991:2. These losses are in contrast to past recessions in which service-sector employment either increased or remained constant.

A weak service sector reduces the job opportunities of low-income women who head families. More than 70 percent of working women who head families and have income less than 125 percent of the poverty threshold hold positions in three occupational categories: services, administrative support, and sales. Virtually all of the jobs in these occupational categories are in service industries.

The number of women at work in these occupations grew at an annual rate of 0.3 percent between July 1989 and July 1992, approximately the same

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20. See Stephen K. McNees, "The 1990-1991 Recession in Historical Perspective," *New England Economic Review* (January/February 1991), pp. 3-22.

21. See Congressional Budget Office, *The Economic and Budget Outlook: Fiscal Years 1994-1998* (January 1993), p. 4.

22. See Joseph R. Meisenheimer II and others, "Job Market Slid in Early 1991, Then Struggled to Find Footing," *Monthly Labor Review* (February 1992), pp. 3-17; and Women's Research and Education Institute, *This Recession's Invisible Victims: Women Sales and Service Workers* (Washington, D.C., May 1991).

rate experienced by all workers over the period. By contrast, over the period from July 1979 to July 1982, which roughly encompasses the previous two recessions, the number of women workers in three similarly defined occupations grew at an annual rate of 2.1 percent, more than twice the rate for all workers.<sup>23</sup>

Differential Effects on Regions. The recent economic slowdown hit hard in a number of states that offer high AFDC benefits, which probably exacerbated the growth of the caseload. Because higher AFDC maximum benefits make larger percentages of a state's population eligible for the program, a downturn centered in high-benefit states should cause stronger growth of the caseload, holding other factors constant, than a similar downturn concentrated in low-benefit states.

This economic slowdown badly hurt states in the Northeast region and California, where AFDC benefits are relatively high.<sup>24</sup> In the Northeast, the number of unemployed rose at an average annual rate of 54 percent between July 1990 and March 1991, the peak and trough of the latest recession, well above the increase experienced by other regions (see Table 10). Although California fared well in the earliest months of the economic slowdown, its economy is now one of the weakest in the country. The number of unemployed Californians has nearly doubled over the past three years--rising from about 750,000 in January 1990 to 1.4 million in January 1993.

Not only were these states affected more than others in the latest downturn, but they were affected less than others in the downturns of the early 1980s. These earlier recessions hit the Midwest and other states where AFDC maximum benefits were lower, on average, particularly hard.

These differences of the latest downturn among the various states and regions probably affected the UP caseload more than the Basic caseload. The northeastern states and California together account for about 50 percent of the UP cases, well above their share of the population.

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23. A comparison of growth in the number of workers is misleading because it does not account for underlying changes in the labor force. Thus, the relevant comparison is not that the number of workers in these occupations grew seven times faster between 1979 and 1982, but rather that these occupations fared considerably better than others in the 1979-1982 slowdown; the same cannot be said for the 1989-1992 period.

24. See Mary C. Dzialo and others, "Atlantic and Pacific Coasts' Labor Markets Hit Hard in Early 1990's," *Monthly Labor Review* (February 1993), pp. 32-39. In July 1992, maximum benefits for a family of three in the Northeast region ranged from \$421 in Pennsylvania to \$680 in Connecticut. In California, the maximum benefit for a family of three was \$663. At the same time, the maximum benefit for such families in the median state was \$367.

**OBRA.** Because of the Omnibus Budget Reconciliation Act of 1981, effects of the latest economic slowdown on caseloads should be greater than in earlier slowdowns. OBRA made about 450,000 families ineligible for AFDC, largely because of the provisions limiting the disregard of earnings in determining eligibility. Such families now form an added pool of probable AFDC recipients in the event that they lose their jobs. Attempts to include this effect in the regressions were not successful, however.

In addition, OBRA obscured the effects of the 1981-1982 recession on AFDC caseloads, making it difficult to determine how the latest increases in the caseload compare with those in 1981 and 1982. The regression findings, which reflect the implementation of OBRA, were used to estimate growth in the absence of OBRA. Figure 7 indicates that the caseload grew much more rapidly during the latest economic slowdown than in the 1980-1982 period, even after adjusting for the impact of OBRA on caseloads.

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TABLE 10. REGIONAL CHANGES IN THE NUMBER OF PEOPLE  
UNEMPLOYED DURING RECENT RECESSIONS  
(Average annual growth rates, in percent)

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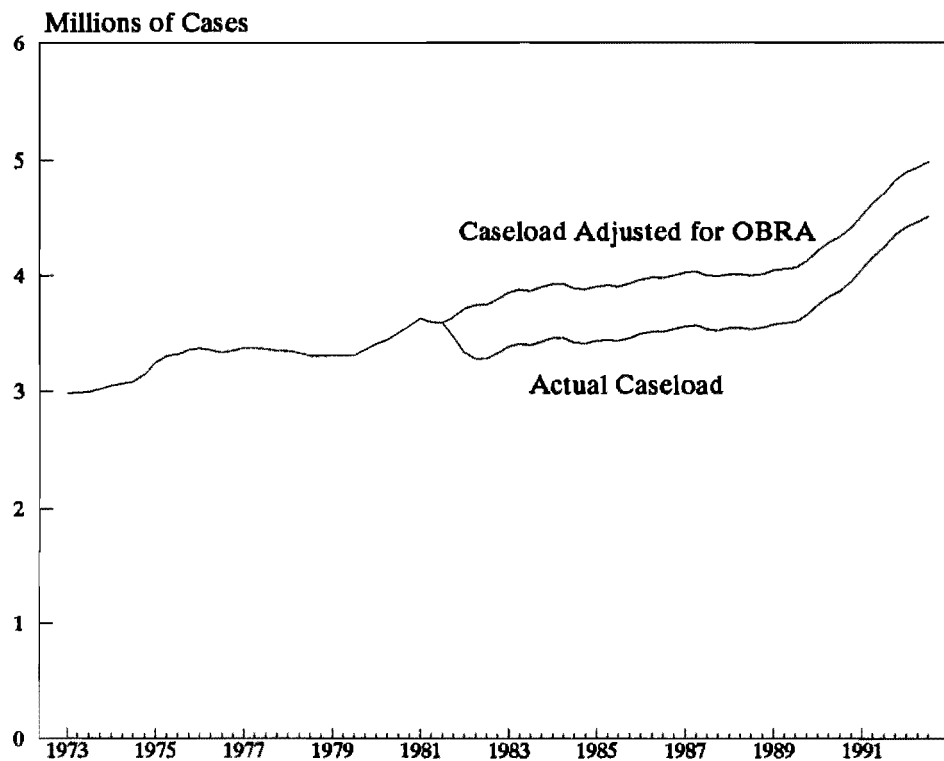
Region <sup>a</sup>	January 1980- July 1980	July 1981- November 1982	July 1990- March 1991
Midwest	102.8	37.1	43.4
Northeast	35.3	24.5	53.8
South	49.5	39.0	35.6
West	53.3	40.9	32.8
California	36.2	45.2	66.1
Entire United States	60.9	35.7	40.6

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SOURCE: Congressional Budget Office using data from the Bureau of Labor Statistics.

- a. The following states, including the District of Columbia, compose the various regions: Midwest (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin); Northeast (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont); South (Alabama, Arkansas, Delaware, District of Columbia, Georgia, Florida, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia); and West (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming).
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**Figure 7.**  
**AFDC—Basic Caseload Excluding the Effects of OBRA—1981**



**SOURCE:** Congressional Budget Office using data from the Administration for Children and Families.

**NOTE:** The effects of the Omnibus Budget Reconciliation Act of 1981 (OBRA), as estimated in the regression in Table 4, were used to adjust the Basic caseload.



## ASSESSING THE RELATIVE ATTRACTIVENESS OF WORK VERSUS WELFARE

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Although some parents who are categorically eligible for AFDC are unable to work, others are in the position of being able to choose between work for pay and welfare.<sup>25</sup> For this choice to be operative, jobs must be available, child care and transportation accessible, and serious health problems absent. If these conditions are met, a simplified view of the work/welfare decision entails comparing the net returns from work (earnings and fringe benefits after taxes and the earned income tax credit, less any out-of-pocket work-related costs such as child care and transportation) with the net returns from welfare (AFDC, food stamps, Medicaid, and sometimes housing and other benefits).

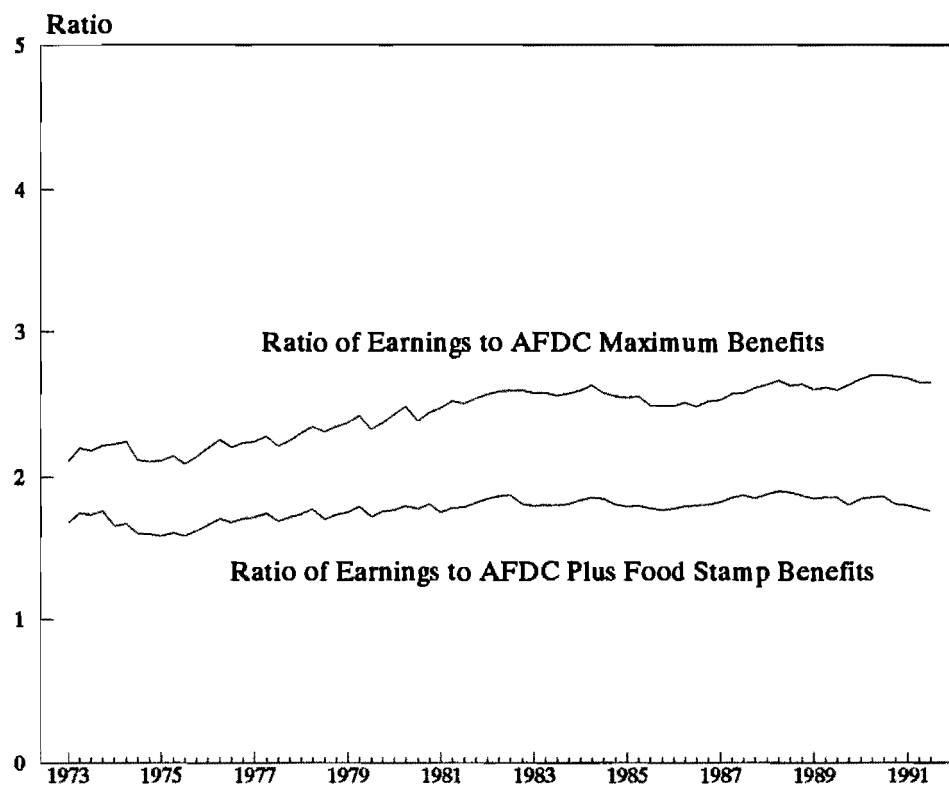
In reality, the comparison is more complex. For example, if earnings were low enough, the person who chose to work could also be eligible for a reduced package of food stamps, housing benefits, and Medicaid and might also receive subsidized child care. Moreover, a family's child support payments might rise when the family left AFDC if the payments from the absent parent were greater than \$50 a month. Finally, intangible factors would probably influence the decision: the importance of being a full-time or part-time homemaker, the subjective benefits or costs of work and the working environment, the stigma of being on welfare, and the preference for leisure.

Comparing two important pieces of this work/welfare decision--earnings, represented here by those of women aged 18 to 24 with exactly four years of high school, and AFDC maximum benefits--shows that the ratio of earnings to benefits increased modestly during much of the 1973-1991 period (see Figure 8). During most of the 1980s, however, the ratio was relatively stable, with earnings about two and one-half times AFDC benefits. Since late 1987, the ratio has increased slightly as real AFDC benefits have declined more steeply than earnings. Adding food stamps to AFDC benefits causes the ratio to rise by less over the period because food stamps offset some of the decline in real AFDC benefits. But the relative stability in these ratios masks much greater changes in their components--earnings and AFDC maximum benefits.

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25. Some families are able to receive AFDC while working for pay if they work part time, if they work full time and live in a high-benefit state, or if they are in the first few months of work when less of their earnings is counted in determining their AFDC grants.

**Figure 8.**  
**Ratio of Women's Average Earnings to AFDC and Food Stamp Benefits**



**SOURCE:** Congressional Budget Office using data from the Administration for Children and Families, the Food and Nutrition Service, and the Bureau of the Census (Current Population Survey data).

**NOTES:** AFDC maximum benefits are weighted averages across states for a family of three with no countable income. Food stamp benefits are those that a family of three with only AFDC income would receive.

Annual earnings are for women aged 18 to 24 with exactly four years of high school who are year-round, full-time workers. Annual earnings are interpolated to derive a quarterly series.

## Trends in Earnings

The labor market has undergone dramatic changes in the past two decades, altering the environment in which women who head families decide whether to engage in paid work. First, women's participation in the labor force has climbed sharply--from 55 percent in 1975 to 74 percent in 1990 for women aged 25 to 54 and from 57 percent to 63 percent for women aged 16 to 24. This greater attachment to the labor market should reduce mothers' reliance on AFDC as their marriages dissolve. Second, but most important for purposes of this analysis, real earnings have declined for many workers.<sup>26</sup>

The earnings of men have declined relative to those of women. Real earnings of men aged 18 to 34 with exactly four years of high school have fallen especially fast since the early 1980s (see Figure 9).<sup>27</sup> By contrast, earnings of young women with a high school education stagnated until recently. Women were largely insulated from the decline in real earnings that affected similarly educated men for a number of reasons. Two of the most important are the concentration of women in service occupations and industries, which fared well compared with manufacturing industries until recently, and increasing work experience as their labor force participation rates have risen. By the end of the 1980s, however, real earnings of young women were also declining--from about \$14,885 in 1988 to about \$13,560 in 1991.

Estimates of the effects of women's earnings on the AFDC-Basic caseload and of men's earnings on the AFDC-UP caseload were not statistically significant in CBO's regressions, nor were they in the regressions of AFDC case openings and closings. The high degree of correlation between earnings and other independent variables may be masking their importance. Moreover, the particular earnings series that CBO used could be inappropriate. For example, if the wage rates received by marginally employed workers are changing in ways that are different from wage rate changes for year-round, full-time workers, the earnings variables used here will not describe the true potential wages available to the AFDC population.<sup>28</sup>

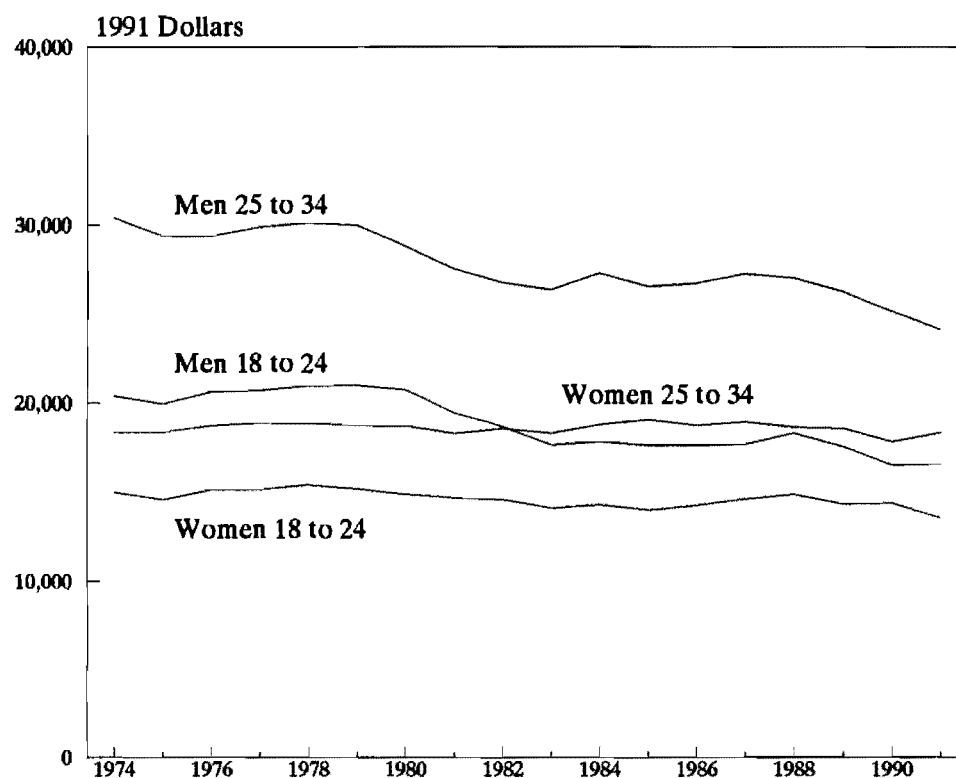
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26. See Frank Levy, *Dollars and Dreams: The Changing American Income Distribution* (New York: Russell Sage, 1987). For a review of findings on the rising inequality in earnings, see Frank Levy and Richard J. Murnane, "U.S. Earnings Levels and Earnings Inequality: A Review of Recent Trends and Proposed Explanations," *Journal of Economic Literature*, vol. 30, no. 3 (September 1992), pp. 1333-1381.

27. These series are of earnings for year-round, full-time workers. Such earnings vary mostly with changes in actual rates of pay rather than with changes in hours worked.

28. Alternative measures of earnings--for example, retail wages--were also found to be statistically insignificant.

**Figure 9.**  
**Real Average Annual Earnings of Men and Women with Four Years of High School**



**SOURCE:** Congressional Budget Office using data from the Bureau of the Census.

**NOTE:** Earnings are for men and women aged 18 to 24 or 25 to 34 with exactly four years of high school who are year-round, full-time workers.

## Changes in AFDC Maximum Benefits

States have not increased AFDC maximum benefits as rapidly as the rate of general inflation has increased, so the purchasing power of the benefits has eroded. Since 1973, average maximum benefits for a family of three declined in real terms by about 30 percent (see Figure 10). With the economic downturn in 1990, the decline in benefits accelerated. In 1991, six states, accounting for about one-quarter of the AFDC caseload, cut their nominal maximum benefits.<sup>29</sup> In 1992, three of these same states cut their benefits again, and three other states also reduced benefits.<sup>30</sup>

Because states set maximum AFDC benefits, the benefits vary greatly. For example, benefits for a family of three in the continental United States ranged from \$680 a month in Connecticut to \$120 a month in Mississippi in July 1992. When states are experiencing budget surpluses during economic expansions, AFDC maximum benefits tend to rise more rapidly in nominal terms. But when state fiscal positions deteriorate, as in recessions, AFDC maximum benefits rise more slowly. During the 1970-1993 period, no state increased or even maintained its maximum benefits in real terms.

Most families who receive AFDC also receive food stamps, which significantly increase their ability to consume. In the third quarter of 1991, food stamps supplemented the average AFDC maximum benefit of about \$425 a month for a family of three by almost 50 percent, for a combined benefit of \$635. As AFDC maximum benefits have declined in real terms, food stamps have offset some of the decline, with combined benefits falling by about 15 percent since 1973 rather than by about 30 percent for AFDC benefits alone (see Figure 10). In early 1973, food stamps supplemented AFDC benefits by only 25 percent, compared with today's 50 percent.

## Relationship Between AFDC Maximum Benefits and Caseloads

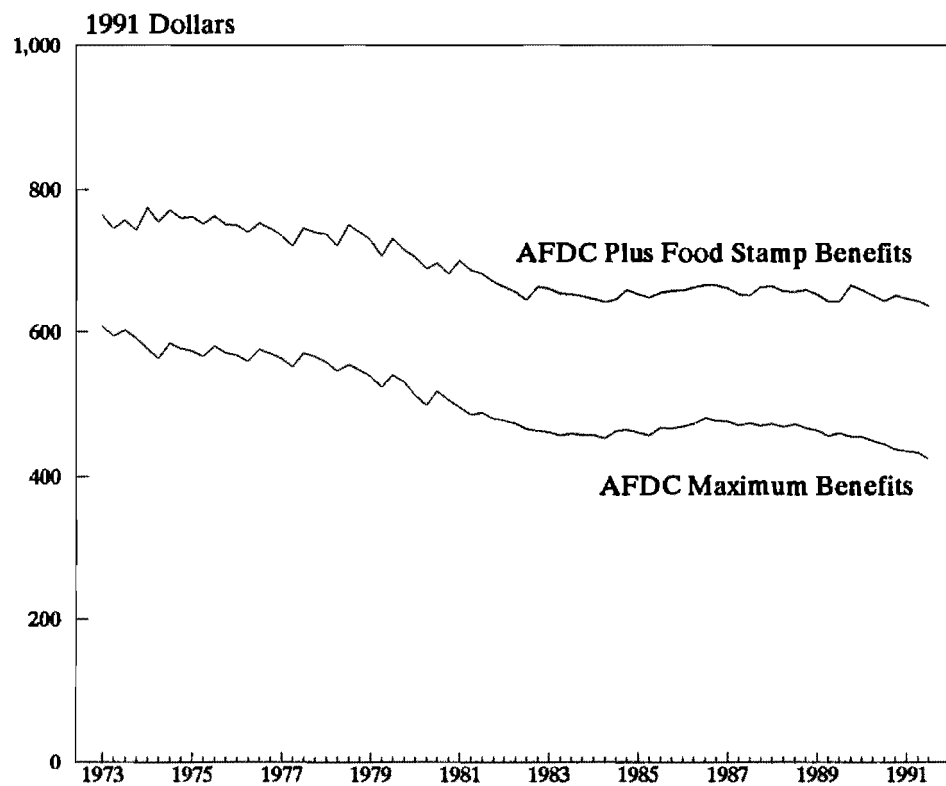
Changing AFDC and food stamp benefits affect AFDC caseloads in two ways: by altering eligibility and by changing the terms of the work/welfare decision. First, the AFDC maximum benefit helps to determine whether a family is

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29. Isaac Shapiro and others, *The States and the Poor: How Budget Decisions in 1991 Affected Low Income People* (Washington, D.C.: Center on Budget and Policy Priorities, and Albany, New York: Center for the Study of the States, 1991), pp. 9-12.

30. Iris J. Lav and others, *The States and the Poor: How Budget Decisions Affected Low Income People in 1992* (Washington, D.C.: Center on Budget and Policy Priorities, and Albany, New York: Center for the Study of the States, 1993), pp. 12-16.

**Figure 10.**  
**Real Monthly AFDC and Food Stamp Benefits**



**SOURCE:** Congressional Budget Office using data from the Administration for Children and Families and the Food and Nutrition Service.

**NOTE:** AFDC maximum benefits are weighted averages across states for a family of three with no countable income. Food stamp benefits are those that a family of three with only AFDC income would receive.

eligible for AFDC.<sup>31</sup> As it rises, other things being equal, more families become eligible for AFDC, and the caseload consequently increases. Second, as the AFDC maximum benefit rises relative to earnings, other things being equal, more families would opt for welfare over paid work.

On both counts--eligibility and work/welfare choices--theory would lead to a positive correlation between AFDC maximum benefits (with or without food stamps included) and caseloads. But the correlation between benefits and caseloads could also be negative because the size of AFDC caseloads affects the budgets of states and localities. Thus, when caseloads are rising rapidly, states may be inclined to cut AFDC benefits or raise them by smaller amounts in order to contain overall spending. If a slowing economy is the cause of the rising caseloads, AFDC benefits are even more likely to be cut because of the general deterioration in states' budget positions during such periods.

Perhaps reflecting these potentially offsetting effects, a rise in real AFDC benefits is associated with only a modest increase in AFDC caseloads, and the coefficients are not always statistically significant. For example, a 5 percent, or \$21, rise in real 1991:3 monthly benefits relates to a 0.2 percent, or 10,000, increase in the AFDC-Basic caseload. Holding benefits constant in real terms since 1973 is associated with 85,000, or 2.0 percent, more Basic cases. Results are similar for the AFDC-UP caseload, although the association with benefit increases is somewhat stronger. A 5 percent rise in real 1991:3 benefits relates to an increase in the AFDC-UP caseload of about 4,000, or 1.4 percent. These estimated effects are too low to portray accurately the consequences of changes in AFDC benefits on program eligibility. (See Appendix C for evidence from another study.)

## PROJECTING AFDC CASELOADS, 1993-1995

What will happen to AFDC caseloads in the next few years? Will an expanding economy drive AFDC caseloads lower? Or will the seemingly inexorable growth in the number of families headed by women, and changes in their composition, cause caseloads to expand? To shed some light on these questions, CBO used the regression models discussed earlier, coupled with forecasts of the independent variables, to project AFDC caseloads for 1992:4 to 1995:3. (The years for the projections in this section are fiscal years.)

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31. Currently, there are several steps in determining both eligibility and benefits for AFDC. First, the family's income must fall below the gross income limit equal to 185 percent of the state need standard. A second eligibility test for applicants is whether countable income is less than the state need standard. Finally, the family's benefits are determined by subtracting countable income from the state maximum payment level. Because maximum payment levels are below need standards in many states, families may also be found ineligible under this final step.

## Projected Caseloads

The AFDC-Basic caseload and the AFDC-UP caseload are projected to take somewhat divergent paths over fiscal years 1993 through 1995. For both, however, the strength of the economic recovery will play a major role.

AFDC-Basic. According to CBO's analysis, the AFDC-Basic caseload will not decline, although it will grow much more slowly than it did in the 1989-1992 period. The CBO model indicates that the caseload will increase from 4.4 million cases in 1992 to 4.6 million or 4.7 million cases in 1993 (see Table 11). By 1995, the caseload is projected to range from 4.8 million to 5.0 million. (The range of forecasts is based on three alternative assumptions about the growth in the number of female-headed families, which are discussed below.) Based on the middle forecast, the Basic caseload will increase by almost 10 percent in the 1993-1995 period, compared with an increase of about 25 percent during the preceding three years.

Growth in caseloads during an economic expansion is not unusual for the Basic caseload, as occurred in the period following the 1981-1982 recession (see Figure 11). What is different about the 1993-1995 forecast is the magnitude of the growth. Under the middle forecast, annual increases will average 130,000 cases from 1992:3 to 1995:3, compared with increases averaging only 35,000 during the economic expansion of the 1980s. The expected weakness of the current economic expansion explains some of this more rapid projected growth in the Basic caseload compared with that in the 1980s; growth in the number of families headed by women, and their changing composition, explain most of the remainder.

AFDC-UP. In contrast to the Basic caseload, the UP caseload is projected to decline beginning early in fiscal year 1994. From an average of 285,000 in 1992, UP cases are projected to rise slightly to 295,000 in 1993 (see Table 11).<sup>32</sup> CBO's model projects that the number of cases will have fallen to 285,000 by 1995.

Increases in the UP caseload for at least a year after the end of a recession are normal (see Figure 12). For example, following the fourth-quarter trough of the 1981-1982 recession, UP cases did not begin to decline

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32. These estimates of AFDC-UP cases do not include states with newly mandated programs.



until the last half of 1984. By the end of the first three years of the post-1982 recovery, UP cases were at just about the same level as at the end of the recession. Only after that time did they begin to decline sharply, falling by about 100,000 cases--or one-third--from their peak postrecession level. Nonetheless, the weaker recovery that CBO projects should lead to a smaller reduction in the UP caseload than occurred after previous recessions.

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TABLE 11. FORECAST OF THE AFDC CASELOAD,  
FISCAL YEARS 1993-1995

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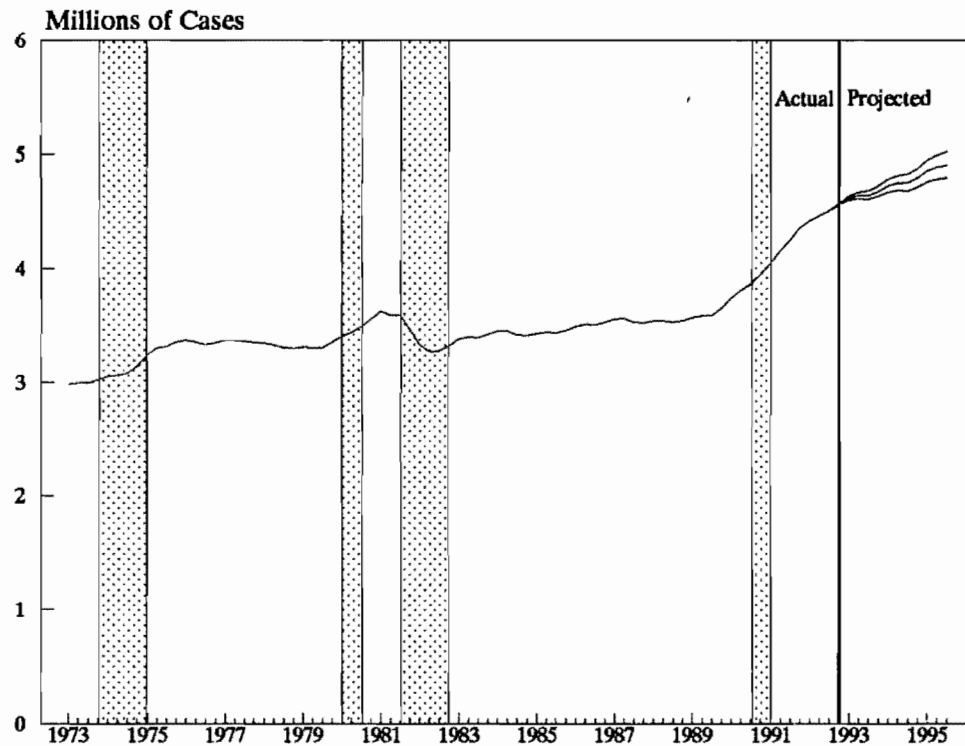
Fiscal Year	AFDC-Basic Under Three Assumptions <sup>a</sup> (Millions)			AFDC-UP <sup>b</sup> (Thousands)
	Low	Middle	High	
Actual				
1992	4.4	4.4	4.4	285
Forecast				
1993	4.6	4.6	4.7	295
1994	4.7	4.7	4.8	295
1995	4.8	4.9	5.0	285

SOURCE: Congressional Budget Office.

NOTE: The forecasts are based on regressions using the same variables (excluding earnings) as in Tables 4 and 5, but for the 1973:1-1992:3 period.

- a. The forecasts of the AFDC-Basic caseload are based on three alternative assumptions of the growth in the weighted number of female-headed families.
  - b. Data for the analysis of the AFDC-Unemployed Parent program exclude states that established these programs in or just before October 1990 in accordance with the Family Support Act of 1988.
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**Figure 11.**  
**Projected AFDC—Basic Caseload**



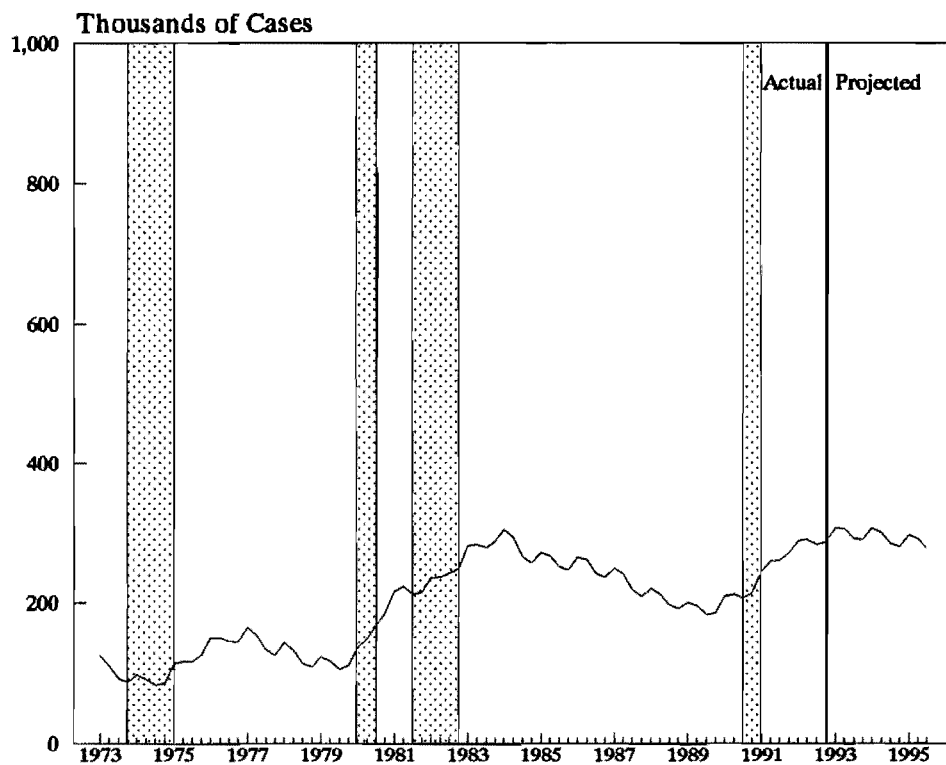
**SOURCE:** Congressional Budget Office using data from the Administration for Children and Families.

**NOTES:** AFDC is the Aid to Families with Dependent Children program. The AFDC—Basic caseload consists primarily of single-parent families headed by women.

The forecasts of the caseload are based on three alternative assumptions of the growth in the weighted numbers of female-headed families.

The shaded areas show periods of recession.

**Figure 12.**  
**Projected AFDC–Unemployed Parent Caseload**



**SOURCE:** Congressional Budget Office using data from the Administration for Children and Families.

**NOTES:** AFDC is the Aid to Families with Dependent Children program. The AFDC–Unemployed Parent (UP) caseload consists of two–parent families in which the primary earner works fewer than 100 hours a month.

Data exclude states that initiated the AFDC–UP program in or just before October 1990 in accordance with the Family Support Act of 1988.

The shaded areas show periods of recession.

## Factors Affecting Projected Caseloads

What happens to both the AFDC-Basic caseload and the AFDC-UP caseload in the future depends on the path of employment as the economy recovers from the recent recession. For the AFDC-Basic caseload, however, an even more important factor is future growth in the number of families headed by women and changes in their composition. Less important to both caseloads is any change in real AFDC benefit levels. CBO had to forecast all three of these variables in order to project AFDC caseloads.<sup>33</sup>

Employment Gap. The employment gap has declined much less rapidly than in earlier recovery periods, and CBO projects a continued moderate decline (see Figure 13). The unemployment rate that is consistent with this gap is projected to fall from a peak of 7.3 percent in fiscal year 1992 to 6.3 percent in fiscal year 1995, substantially less improvement than the drop from 10.7 percent to 7.0 percent during the first three years of the post-1982 recovery.

If the economy continues to grow only moderately, AFDC caseloads will be higher than if economic growth was more rapid. Based on CBO's models, the projected decline in the employment gap, holding other factors constant, will reduce the Basic caseload by 95,000, or just over 2 percent, from 1992:3 to 1995:3. The UP caseload will drop by about 25,000, or about 9 percent.

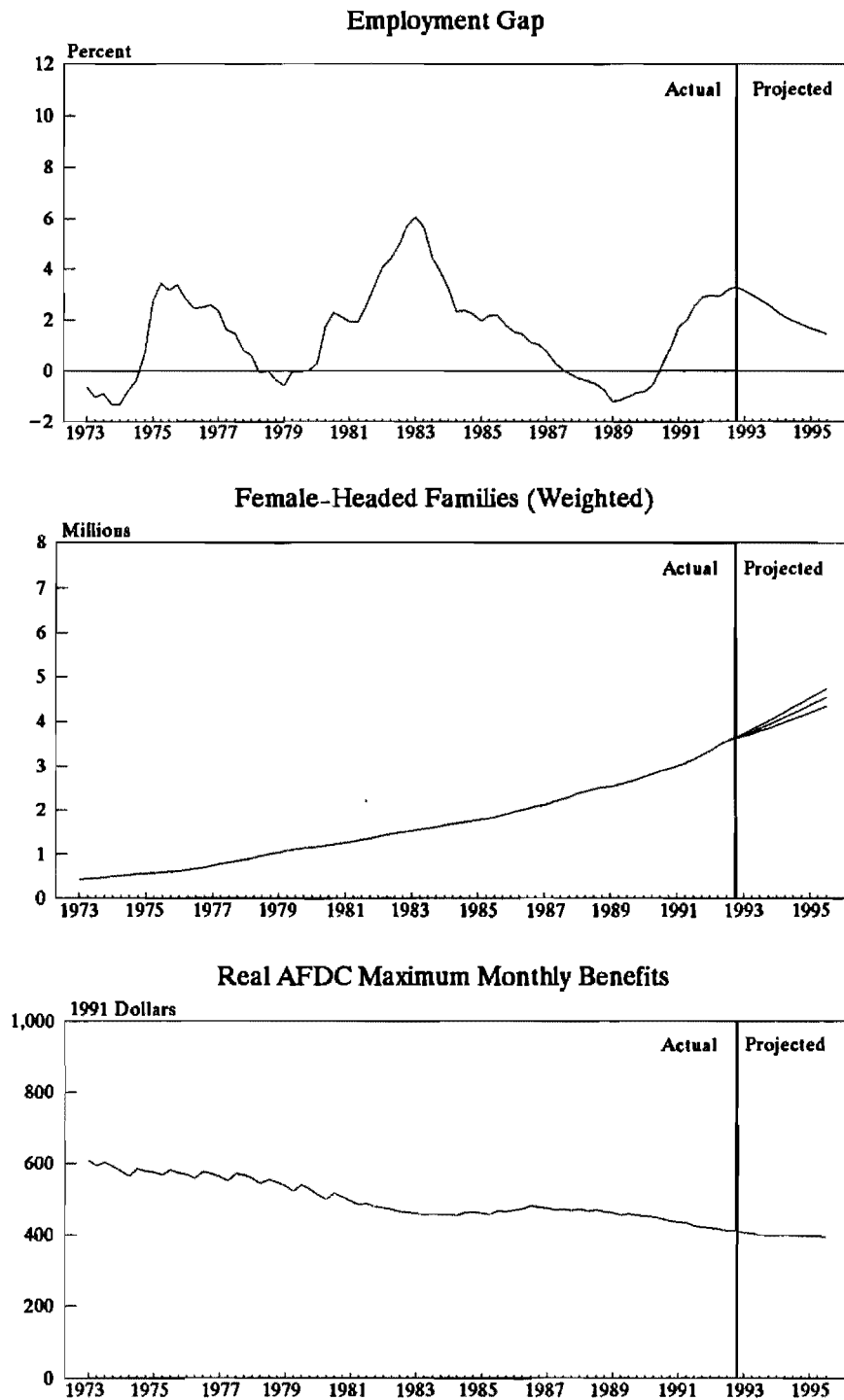
Economic projections are seldom realized precisely, so this memorandum examines how alternative economic assumptions might affect caseload growth. CBO used two alternative assumptions of the path of unemployment rates. Under the first, the economy would be weaker; after fiscal year 1993, the unemployment rate would decline to only 6.8 percent in fiscal year 1995 rather than to 6.3 percent, as in the standard (baseline) CBO forecast. Under the second, the economy would be stronger; the unemployment rate would drop to 5.8 percent in 1995. By 1995, then, the alternative unemployment rates would form an interval of 1 percentage point around the CBO baseline forecast.<sup>34</sup>

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33. As noted earlier, regressions excluding real earnings were used for forecasting because earnings data for 1992 are not yet available, were found to be statistically insignificant, and are difficult to forecast.

34. The employment gaps that are consistent with the weak and strong economic scenarios are 2.1 percent and 1.1 percent in fiscal year 1995, respectively, compared with CBO's baseline forecast of 1.6 percent.

Figure 13. Projections of Independent Variables



SOURCE: Congressional Budget Office using data from the Bureau of Labor Statistics, the Bureau of the Census, and the Administration for Children and Families.

NOTE: These series are used in the regressions, as defined in Table 3 and shown in Figures 2, 6, and 10.

An unemployment rate that was one-half of one percentage point higher in 1995 would increase the number of Basic cases by about 30,000, or 0.7 percent, and the number of UP cases by 9,000, or 3.4 percent, based on CBO's models.<sup>35</sup> As discussed earlier, the AFDC-UP caseload is more responsive to economic changes than the AFDC-Basic caseload. Because the relationships in the CBO models are linear, an unemployment rate that was one-half of one percentage point lower would decrease AFDC cases by the same amounts. Similarly, a full percentage-point increase (or decrease) in the unemployment rate would raise (or lower) AFDC caseloads by twice those amounts, or by about 80,000: 60,000 for Basic cases and almost 20,000 for UP cases.

Female-Headed Families. Barring any major legislative or programmatic initiatives, changes in the number and composition of families headed by women will be the single most important factor affecting future growth of the AFDC caseload. Yet such changes are highly uncertain, particularly beyond one or two years into the future. For this reason, CBO based its projections of the Basic caseload on three alternative assumptions of growth over the 1993-1995 period in the weighted number of female-headed families used in the analysis.

Under the middle assumption, the Basic caseload will increase by 560,000, or 185,000 a year on average, from 1992:3 to 1995:3, solely because of changes in the number and composition of families headed by women. Caseload growth over the three years increases to 680,000 (225,000 a year) under the high assumption and declines to 450,000 (150,000 a year) under the low assumption, based on CBO's model and holding other factors constant. Under all three assumptions, caseload growth caused by changes in the formation of female-headed families is much higher than during the 1983-1989 period, when it averaged only 100,000 a year.

These assumptions are neither formal projections nor high and low bounds to the changes that could occur in the number of female-headed families. They are based primarily on recent trends in the two series that form the basis of the variable used in the regression--the number of families headed by women and the percentage of such families headed by mothers who never married (see Table 12).

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35. This response of UP cases to a higher unemployment rate would be slightly greater in fiscal year 1996 than in 1995, after the lagged response of cases to changes in the employment gap was fully played out.

TABLE 12. BASIS FOR ALTERNATIVE ASSUMPTIONS  
ABOUT FEMALE-HEADED FAMILIES

Assumption	Annual Increase in Number of Families Headed by Women with Their Own Children Under Age 18	Annual Increase in Percentage of Families Headed by a Never- Married Mother
Low	150,000	1.1 percentage points
Middle	200,000	1.3 percentage points
High	245,000	1.5 percentage points

SOURCE: Congressional Budget Office.

The number of families headed by women has increased faster thus far in the 1990s than in the 1980s, averaging an added 235,000 families a year compared with 145,000 in the earlier period. (Recall that the series CBO uses is the sum of primary families and unrelated subfamilies, and that it is a three-year moving average.) All three of the alternative assumptions used in this analysis have increases above those of the 1980s; the low and middle assumptions have increases below those of the 1990s to date. The 200,000 annual increment used in the middle assumption is based on the approximate average annual increase during the 1989-1992 period, which is also the same increase that occurred during the entire 1973-1992 period. The 245,000 annual increment used in the high assumption is based on the average annual increase during the 1991-1992 period. The low assumption, an increase of 150,000 a year, applies the percentage growth in the number of family households headed by women (as projected by the Bureau of the Census) to the series on families headed by women that CBO uses.<sup>36</sup> From 7.5 million in 1992, the number of families headed by women rises to a range of 8.0 million to 8.3 million in 1995 under the three assumptions.

To obtain assumptions for the weighting factor, CBO started with projections of the percentage of families headed by mothers who never

36. Bureau of the Census, *Projections of the Number of Households and Families: 1986 to 2000*, Current Population Reports, Series P-25, No. 986 (1986), p. 9, based on the Series A projection.

married, a series that has risen rapidly in recent decades, especially in the last few years.<sup>37</sup> The annual 1.3 percentage-point increase that underlies the middle assumption equals the average 1989-1992 increase, and the 1.5 percentage-point increase used in the high assumption equals the average 1991-1992 increase. For the low assumption, the annual increase of 1.1 percentage points equals the average increase in the 1980s. From 31 percent in 1992, the percentage of families headed by mothers who have never married rises to 35 percent in 1995 under the low and middle assumptions and to 36 percent under the high assumption.

The variable for female-headed families that CBO uses in the regressions reflects these assumed changes in the two series (see Table 13). For fiscal years 1993 through 1995, the weighted variable increases by 0.8 million under the low assumption, 1.0 million under the middle assumption, and 1.2 million under the high assumption. The low increase is about equal to the actual average increase in the variable during the preceding three years, 1990-1992, and the middle increase about equals the actual increase from 1991 to 1992 (times three). The high increase exceeds recent growth.

How realistic are these assumptions? Will the number of families headed by mothers, especially those who have never married, continue to grow as rapidly as in the past few years, or perhaps even more rapidly? The evidence seems to point to a continuation of recent trends.

Almost all families headed by women with children are formed when an existing two-parent family dissolves and the mother takes custody of the children, or when a woman who is not married gives birth to a first child. The number of families headed by women declines when a single mother marries or remarries. Because divorces, separations, marriages, and births happen more frequently at some ages than at others, changes in the number and type of families headed by women depend importantly on the age distribution of the population and on social mores.

The age distribution of the population has changed significantly and will continue to do so as the baby boomers age. Baby boomers are men and women born in the years 1946 through 1964, a period of relatively high birth rates. In 1980, baby boomers ranged in age from 16 to 34; in 1990, they were 26 to 44. By 1995, baby boomers will be 31 to 49 years of age. During the 1993-1995 projection period, as the boomers age, birth rates are projected to

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37. The percentage of female-headed families with never-married mothers (P) is the critical variable in the ratio by which the number of families headed by women (N) is multiplied. The variable used in the regression equals  $N \cdot (P/1-P)$ . The expression  $P/1-P$  is numerically equal to the ratio of the number of never-married mothers to the number of mothers who had been married.



**TABLE 13. ASSUMPTIONS ABOUT THE NUMBER OF FEMALE-HEADED FAMILIES**

Fiscal Year	(A) Number of Families Headed by Women <sup>a</sup> (Millions)	(B) Percentage Who Never Married <sup>b</sup>	Weighted Number of Female-Headed Families <sup>c</sup> (Millions)
1992	7.5	31	3.4
<b>Low Assumption<sup>d</sup></b>			
1993	7.7	32	3.7
1994	7.8	34	4.0
1995	8.0	35	4.2
<b>Middle Assumption<sup>e</sup></b>			
1993	7.7	33	3.7
1994	7.9	34	4.1
1995	8.1	35	4.4
<b>High Assumption<sup>f</sup></b>			
1993	7.8	33	3.8
1994	8.0	34	4.2
1995	8.3	36	4.6

**SOURCE:** Congressional Budget Office using data from the Bureau of the Census.

- a. Families headed by women with their own children under the age of 18 are defined as primary families plus unrelated subfamilies. Fiscal year estimates are averages of quarterly (interpolated) data that are based on a three-year moving average of annual data.
- b. Families with their own children under the age of 18 headed by mothers who have never married are taken as a percentage of all families headed by women with their own children under the age of 18. Data are derived in the same manner as the series for all families headed by women.
- c. Families headed by women (column A) multiplied by the ratio of the percentage of them who never married (column B) to the percentage who had married (100 minus column B).
- d. The low increases are based on Bureau of the Census Series A projections of family households headed by women and an assumed annual increase of 1.1 percentage points in the percentage of families headed by women who have never married.
- e. The middle increases are based on an assumed annual increase of 200,000 in families headed by women and of 1.3 percentage points in the percentage of these family heads who have never married.
- f. The high increases are based on an assumed annual increase of 245,000 in families headed by women and of 1.5 percentage points in the percentage of these family heads who have never married.

fall.<sup>38</sup> The divorce rate, which was relatively unchanged during the 1980s, is expected to remain steady or even decline slightly; at the same time, the remarriage rate is expected to continue to drop, with perhaps two out of three women remarrying after divorce.<sup>39</sup> Thus, even though there might be fewer divorces, the number of divorced mothers could continue to increase because fewer of them remarry.

Any changes in the number of out-of-wedlock births will have even more important implications for the future growth of AFDC caseloads. In 1988, 81 percent of first births to unmarried women were for those aged 15 to 24, and almost 50 percent were for women aged 15 to 19. What happens in the years just ahead to these age groups is thus critical to changes in the number of out-of-wedlock births.<sup>40</sup> Population projections for the next three years show a slight overall decline in the number of women who are aged 15 to 24. The number aged 15 to 19 is projected to increase by more than 450,000, but that will be more than offset by a decline of about 550,000 in the number who are aged 20 to 24.<sup>41</sup> In sharp contrast, the number of women aged 15 to 24 fell by more than 3 million during the 1980s. This major shift can be traced to the baby boomers' passing out of this age range, but their continued aging will not result in any further drop. Also, the children of the boomers are now beginning to swell the ranks of teenagers. Given these demographic changes in the years ahead, growth in the number of never-married mothers should continue to place strong upward pressure on AFDC caseloads.

**Real AFDC Benefits.** CBO projects that AFDC maximum benefits will continue to decline in real terms, from \$416 a month in fiscal year 1992 to \$396 a month in 1995 (see Figure 13). The projected decline in real benefits is steep in 1993, when even nominal benefits are expected to decline slightly, reflecting continued fiscal problems in the states. In 1994 and 1995, nominal benefits are projected to rise by 1.6 percent a year, moderating the fall in real benefits. Based on CBO's models, the estimated effect of changing benefit levels on AFDC caseloads is small, so that the projected decline in real benefits is associated with a drop in AFDC caseloads by 1995 of about 13,000, or less than 0.3 percent.

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38. Bureau of the Census, *Population Projections of the United States, by Age, Sex, Race, and Hispanic Origin: 1992 to 2050*, Current Population Reports, P25-1092 (1992), p. xxi and Table 1.

39. Bureau of the Census, *Marriage, Divorce, and Remarriage in the 1990's*, Current Population Reports, P23-180 (1992), p. 13.

40. In addition, one analysis suggests a continuing trend in the 1990s for not marrying or marrying at a later age, leading to more families headed by never-married mothers. See Bureau of the Census, *Marriage, Divorce, and Remarriage*, p. 12.

41. Bureau of the Census, *Population Projections*.

## APPENDIXES

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## APPENDIX A. RECENT STUDIES ON MODELS OF CHANGES IN AFDC CASELOADS

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A few studies have attempted to explain changes in the Aid to Families with Dependent Children caseloads as a result of economic, demographic, and policy variables, with an eye toward forecasting changes in the caseload. In recent years, only one such study has been published for national AFDC caseloads (Grossman), but a number are available for selected states. The major studies are as follows:

Vicky N. Albert, *Welfare Dependence and Welfare Policy: A Statistical Study* (New York: Greenwood Press, 1988). This study is for California.

Burt S. Barnow, "Estimating the New Jersey AFDC Caseload" (ICF Incorporated, Washington, D.C., February 1988).

Jan F. Brazzell, Irving Lefberg, and Wolfgang Opitz, "The Impact of Population Size and the Economy on Welfare Caseloads: The Special Case of Welfare Reform," *Applied Demography*, vol. 4, no. 3 (Summer 1989), pp. 1-7. This study is for the state of Washington.

Steven Garasky, "Analyzing the Effect of Massachusetts' ET Choices Program on the State's AFDC Caseload," Technical Analysis Paper No. 39 (Department of Health and Human Services, Office of Income Security Policy, Washington, D.C., June 1989).

\_\_\_\_\_, "Analyzing the Effect of Massachusetts' ET Choices Program on the State's AFDC-Basic Caseload," *Evaluation Review* (December 1990), pp. 701-710.

Jean Baldwin Grossman, "The Technical Report for the AFDC Forecasting Project for the Social Security Administration/Office of Family Assistance," MPR Reference No. 7502-954 (Mathematica Policy Research, Washington, D.C., February 1985).

David W. Lyon, Mark Menchik, and Gerard Blais, "Predicting the New York City Welfare Caseload" (Rand Corporation, Santa Monica, California, December 1976).

June O'Neill, *Work and Welfare in Massachusetts* (Boston: Pioneer Institute for Public Policy Research, 1990).

- Robert D. Plotnick and Russell M. Lidman, "Forecasting Welfare Caseloads: A Tool to Improve Budgeting," *Public Budgeting & Finance* (Autumn 1987), pp. 70-81. This study is for the state of Washington.
- D. Scholl and J.E. Stapleford, "Forecasting State Welfare Caseloads: Alternative Methodologies" (1991). The authors are with the Delaware Office of the Budget and the University of Delaware, respectively. This study is for Delaware.
- Janet M. Wedel, "An Explanatory Model for Forecasting the New York City Public Assistance Family Caseload," in Department of Health and Human Services, Social Security Administration, *Proceedings: 27th National Workshop on Welfare Research and Statistics* (1987), pp. 605-617.

## APPENDIX B. OPENINGS AND CLOSINGS OF AFDC CASES

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Case openings and case closings can be used to derive the Aid to Families with Dependent Children (AFDC) caseload. The caseload at the end of a quarter is, in theory, equal to the caseload at the end of the preceding quarter plus openings during the quarter less closings during the quarter, or

$$\text{Caseload}_t = \text{Caseload}_{t-1} + \text{Openings}_t - \text{Closings}_t$$

The relationship, however, is not this simple, at least given the way states report data on openings and closings. States consider only those families who enter the caseload through the formal application process as case openings. Officials at the Department of Health and Human Services note that a significant number of cases join AFDC without formal applications. For example, a family who requests AFDC services in California and who had been on the program in any of the previous 12 months does not count as a case opening, even though it had earlier counted as a case closing. The number of families who begin receiving AFDC without formal application appears to have grown during the 1980s, making it difficult to estimate the AFDC caseload through case openings and closings alone (see Figure B-1).

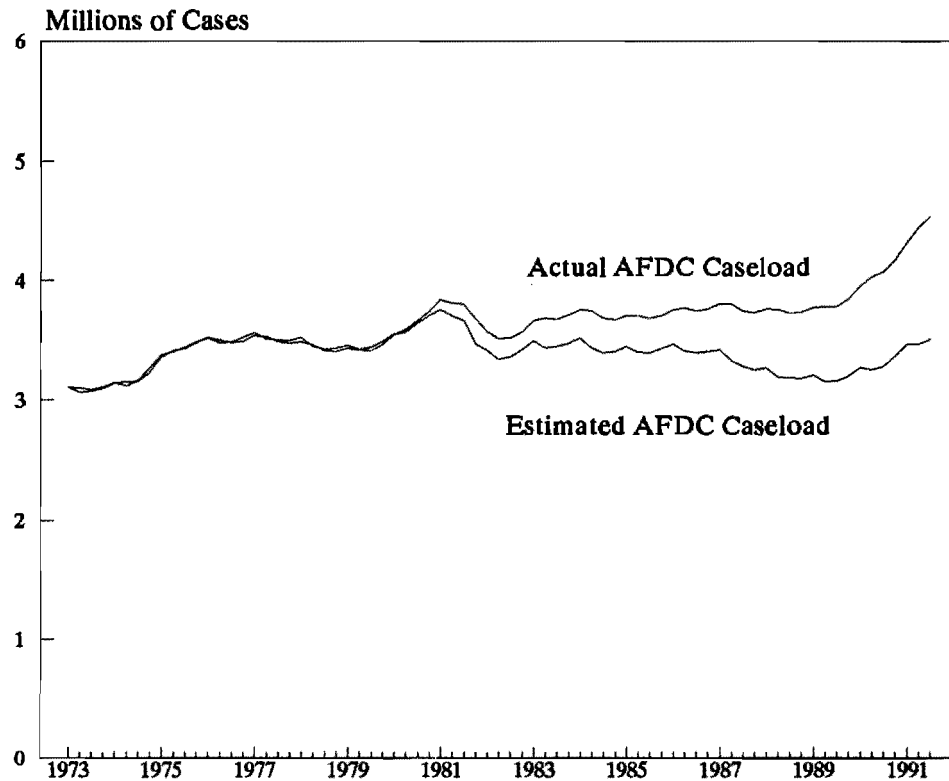
Nonetheless, it is useful to examine AFDC case openings and closings to see whether and how the independent variables affect them. Such findings can lend credence to the results on caseloads presented in this memorandum. Moreover, since there is no reason to believe that the independent variables would affect openings and closings in an identical manner, such an analysis may better explain caseload dynamics.

Data on case openings and closings highlight the high turnover in the AFDC program (see Figure B-2). During the 1990:4-1991:3 period, annual case openings equaled 59 percent of the average monthly caseload, and closings equaled 54 percent. (Data on openings and closings are not available for AFDC-Basic families and AFDC-UP families separately.)

### Regression Results

The variables are defined in Table B-1, the results of the regression of AFDC case openings are shown in Table B-2, and results for AFDC case closings are shown in Table B-3. The independent variables are usually significant with the expected signs. The adjusted  $R^2$ s, at 0.98 for openings and 0.97 for closings, are a bit less than for the caseload regressions.

**Figure B-1.**  
**Actual AFDC Caseload and the Estimated Caseload**  
**Based on Net Case Openings**



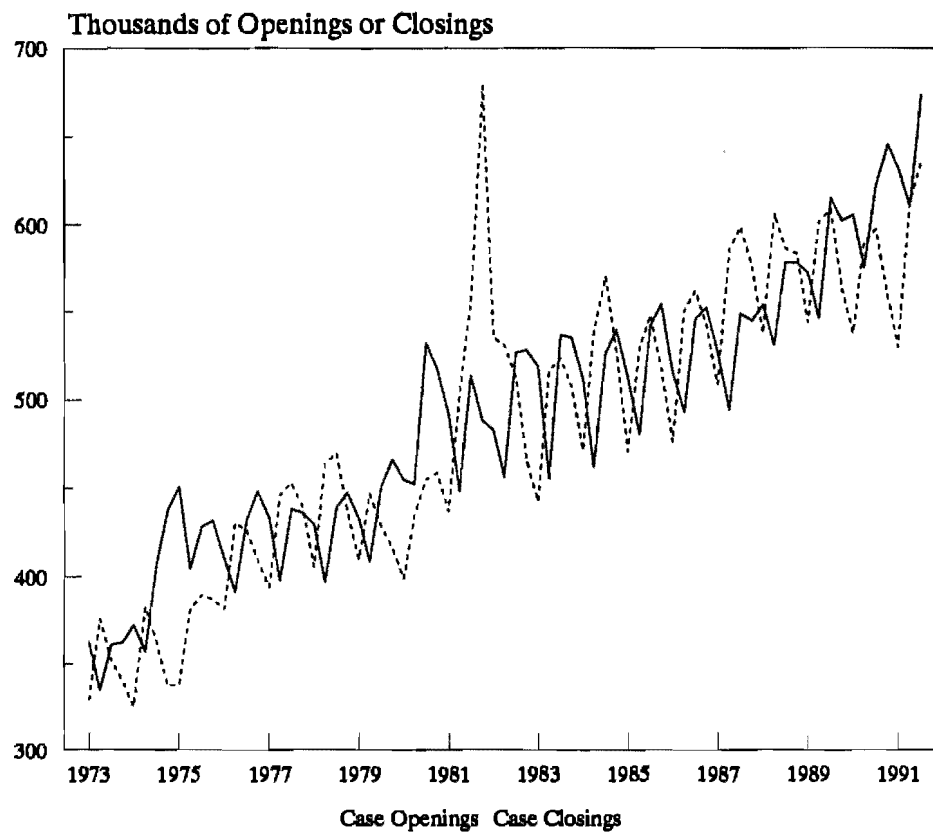
**SOURCE:** Congressional Budget Office using data from the Administration for Children and Families.

**NOTES:** The estimated AFDC caseload starts with the caseload at the beginning of 1973, to which is added the net number of case openings minus case closings during each quarter.

The major part of the gap between the actual caseload and the caseload estimated by net case openings arises because only families who enter the caseload through the formal application process are counted as case openings. For example, families who were on AFDC and return after a short period off the program need not submit a formal application.



Figure B-2.  
AFDC Case Openings and Case Closings



SOURCE: Congressional Budget Office using data from the Administration for Children and Families.

TABLE B-1. VARIABLES USED IN THE REGRESSIONS  
OF CASE OPENINGS AND CASE CLOSINGS

Variable	Definition
Case Openings	Number of AFDC case openings, quarterly totals.
Case Closings	Number of AFDC case closings, quarterly totals.
Case Openings <sub>t-1</sub>	Number of AFDC case openings in the preceding quarter.
Female-Headed Families <sup>a</sup>	Number of families headed by women with their own children under 18, multiplied by the ratio of never-married mothers to mothers who had been married.
Employment Gap <sup>b</sup>	Percentage difference between the economy's potential and actual employment levels in the current quarter.
Real AFDC Benefits <sup>c</sup>	Maximum AFDC benefit for a family of three, expressed in 1991 dollars; weighted average of state benefits.
Real AFDC+FS Benefits <sup>d</sup>	Maximum AFDC benefit for a family of three, weighted average of state benefits, with food stamp benefits estimated according to program rules, expressed in 1991 dollars (in the current quarter).
Real AFDC+FS Benefits <sub>t+1</sub> <sup>d</sup>	Maximum AFDC benefit for a family of three, weighted average of state benefits, with food stamp benefits estimated according to program rules, expressed in 1991 dollars (in the subsequent quarter).
Real Earnings of Women, HS, 18-24 <sup>e</sup>	Average earnings of women aged 18 to 24 with exactly four years of high school and who work full time, year-round, expressed in 1991 dollars.
OBRA	Dummy variable equal to 1 in 1981:4 and all subsequent quarters.
OBRACLOSE	Dummy variable equal to 1 in 1982:2 and all subsequent quarters.
OBRA-1	Dummy variable equal to 1 only in 1981:3.
OBRA 1	Dummy variable equal to 1 only in 1981:4.
OBRA 2	Dummy variable equal to 1 only in 1982:1.

(Continued)

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TABLE B-1. CONTINUED

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Variable	Definition
Quarter 1	Dummy variable equal to 1 in the first quarter of the calendar year.
Quarter 2	Dummy variable equal to 1 in the second quarter of the calendar year.
Quarter 3	Dummy variable equal to 1 in the third quarter of the calendar year.

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SOURCE: Congressional Budget Office.

NOTES: Data series are shown in Tables D-2 and D-3.

FS = food stamps; HS = high school; OBRA = Omnibus Budget Reconciliation Act of 1981.

- a. Families equal primary families plus unrelated subfamilies; related subfamilies are excluded because of the revision in estimating procedures by the Bureau of the Census in the early 1980s, which significantly increased the measured number of related subfamilies. The annual data are averaged over three years ( $t-1$ ,  $t$ , and  $t+1$ ) and are interpolated to provide quarterly estimates.
  - b. See the section on the effects of the business cycle for more detail.
  - c. State benefits are weighted by the AFDC caseload in fiscal year 1991. State estimates are by CBO based on data from the Administration for Children and Families and the Congressional Research Service. For years before 1982, CBO estimated the quarter of the year in which a benefit change took place; for 1973 and 1974, CBO estimated changes in the benefit for a family of three based on changes in the benefit for a family of four.
  - d. Real AFDC benefits are estimated as described above. To them are added food stamp benefits, which are those a family of three with only AFDC income would receive. They are estimated based on the Food Stamp program rules in effect in each quarter.
  - e. Annual data are interpolated to provide quarterly estimates. Data for 1973 are estimated using the Current Population Survey of the Bureau of the Census.
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TABLE B-2. RESULTS OF REGRESSION OF AFDC CASE OPENINGS,  
1973:1-1991:3

Independent Variable	Coefficient	T-Statistic
Female-Headed Families	99,166 <sup>a</sup>	12.59**
Employment Gap	6,879	4.13**
Real AFDC Benefits	-130	-1.05
Real Earnings of Women, HS, 18-24	-14	-1.91
OBRA	-39,408	-4.94**
Quarter 1	-16,366	-5.24**
Quarter 2	-51,718	-14.63**
Quarter 3	-1,870	-0.60
Constant	634,266	5.21**
Autocorrelation Correction--AR(1)	0.35	2.83**
Adjusted R-squared	0.979	

SOURCE: Congressional Budget Office.

NOTES: Based on 74 observations; the mean of the dependent variable is 492,309. Sample means of the independent variables are listed in Table D-1.

Data are quarterly totals.

\*\* indicates statistical significance at the 1 percent level.

HS = high school; OBRA = Omnibus Budget Reconciliation Act of 1981.

a. Reflects the increase in the caseload for every increase of 1 million in the number of female-headed families.

**TABLE B-3. RESULTS OF REGRESSION OF AFDC CASE CLOSINGS,  
1973:1-1991:3**

Independent Variable	Coefficient	T-Statistic
Case Openings <sub>t-1</sub>	0.26	2.12*
Employment Gap	-6,363	-2.25*
Real AFDC+FS Benefits	-478	-2.73**
Real AFDC+FS Benefits <sub>t+1</sub>	-408	-2.32*
Real Earnings of Women, HS, 18-24	21	1.21
OBRACLOSE	44,365	1.96
OBRA-1	52,038	3.09**
OBRA 1	201,641	8.75**
OBRA 2	103,219	4.34**
Quarter 1	-35,352	-9.04**
Quarter 2	23,815	4.65**
Quarter 3	39,352	5.53**
Constant	647,830	1.88
Autocorrelation Correction--AR(1)	0.83	6.29**
Autocorrelation Correction--AR(2)	-0.16	-1.17
Adjusted R-Squared	0.967	

SOURCE: Congressional Budget Office.

NOTES: Based on 72 observations; the mean of the dependent variable is 490,452. Sample means of the independent variables are listed in Table D-1.

\* and \*\* indicate statistical significance at the 5 percent and 1 percent levels, respectively.

FS = food stamps; HS = high school; OBRA = Omnibus Budget Reconciliation Act of 1981.

The effects of the economic variables on openings and closings are generally as expected. Increases in the employment gap have statistically significant effects on openings and closings. An increase of 1 percentage point in the gap in the current quarter is related to an increase of 7,000 in openings and a decrease of 6,000 in closings--a net increase of 13,000 in the caseload. Based on these results, the business cycle has similar effects on openings and closings. Although these findings are roughly consistent with the results of the Basic caseload equation in the current quarter, changes in the employment gap in previous quarters were found to have consistently strong effects on caseloads but none on openings or closings.

An increase in real earnings of young women is associated with reduced case openings and increased case closings, as expected, but the effects are not statistically significant. The coefficients indicate that a 10 percent increase in women's real earnings would be associated with a decline in openings of 21,000 a quarter, or about 4 percent, and a rise in closings of 31,000 a quarter, or about 6 percent.

The associations between AFDC benefits and openings or closings are mixed. For openings, real AFDC benefits are not statistically significant and have the wrong sign, although as noted earlier the relationship can be negative if benefits are not only affected by, but also affect, case openings. In contrast, an increase in real AFDC plus food stamp benefits is associated with a statistically significant decline in closings in both the current quarter and the preceding quarter. Cases can close in the quarter before the benefit change to the extent that cases close on the last day of the quarter before benefits change at the beginning of the first day of the following quarter, which is when states often make their benefit changes effective. No significance should be attached to using AFDC plus food stamp benefits in the equation on closings rather than AFDC benefits alone, as in the other equations. The variable that performed best was used; however, AFDC benefits alone is a better measure of the pure effects on eligibility, and AFDC plus food stamp benefits is a better measure of the trade-off between work and welfare.

As with the caseload, an increase in the number of female-headed families is related to an increase in case openings; an increase of 100,000 in such families boosts openings by about 10,000, or 2 percent. In the closings equation, the variable  $\text{openings}_{t-1}$ , used in place of the number of female-headed families, has a positive and statistically significant effect on closings.

The changes brought about by the Omnibus Budget Reconciliation Act of 1981 (OBRA) have important effects on both case openings and case closings. When implemented, the act caused large, one-time increases in case closings, as families who were made ineligible were dropped from the program.

As the equation shows, case closings are significantly higher in the third and fourth quarters of 1981 (by 52,000 and 202,000, respectively) and in the first quarter of 1982 (by 103,000).<sup>1</sup> Following this initial shock, OBRA increases closings and decreases openings on a continuing basis: closings by 44,000 and openings by 39,000 each quarter. The sum of all of these OBRA coefficients is fairly close to the estimated effect of OBRA on the AFDC-Basic caseload.

The quarterly dummy variables are important in the equations for both openings and closings. Their coefficients are generally larger than are the quarterly coefficients in the caseload equation. Moreover, the results do not appear to be particularly consistent with the caseload results.

### Accuracy of the Forecasts

As with the AFDC caseload models, additional equations containing the same variables for case openings and closings were estimated for the period through 1989:4, and the results were used to forecast case openings and closings for the seven following quarters, 1990:1 through 1991:3, in order to test the accuracy of the models.<sup>2</sup> The results are shown in Table B-4 for case openings and in Table B-5 for case closings. In the forecast of closings, the predicted value of case openings<sub>t-1</sub> was used rather than its actual value.

The out-of-sample forecasting results are mixed, with the openings equation outperforming the closings equation. The average absolute percentage errors over the seven quarters of the forecast are 2.4 percent for case openings and 4.0 percent for case closings, compared with 2.6 percent and 5.1 percent for the AFDC-Basic and AFDC-UP caseload equations, respectively. Both equations do much worse in forecasting results for 1991--especially for closings, for which the errors grow continually larger. The unusually sharp drop in young women's real earnings in 1991 appears to be distorting the forecasts for both openings and closings.

Combining openings and closings leads to forecasts that overstate increases in the caseload. This result is in marked contrast to the fairly large underprediction of the caseload using the 11-quarter forecast that is based on the caseload equations.

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1. The OBRA terms are defined differently in the closings equation than in the openings and caseload equations; thus, the coefficients of the OBRA variables are interpreted differently in the closings equation.

2. Forecasts of case openings and case closings for 1992 cannot be completed at this time because neither the opening and closing data nor earnings data, one of the independent variables, are yet available for 1992.

**TABLE B-4. OUT-OF-SAMPLE FORECAST OF AFDC CASE OPENINGS**  
(In thousands)

Period	Case Openings		Difference	Percentage Difference
	Actual	Forecast <sup>a</sup>		
1990:1	605	592	-13	-2.1
1990:2	575	567	-8	-1.4
1990:3	622	633	11	1.8
1990:4	645	652	7	1.1
1991:1	631	651	20	3.2
1991:2	610	630	20	3.3
1991:3	673	699	26	3.9

SOURCE: Congressional Budget Office.

- a. The forecast is based on a regression using the same variables as in Table B-2, but for the 1973:1-1989:4 period. The average absolute error is 14,883, or 2.4 percent.

**TABLE B-5. OUT-OF-SAMPLE FORECAST OF AFDC CASE CLOSINGS**  
(In thousands)

Period	Case Closings		Difference	Percentage Difference
	Actual	Forecast <sup>a</sup>		
1990:1	537	535	-2	-0.4
1990:2	589	595	6	1.0
1990:3	597	590	-7	-1.2
1990:4	559	551	-8	-1.4
1991:1	530	511	-19	-3.6
1991:2	612	563	-49	-8.0
1991:3	635	554	-81	-12.8

SOURCE: Congressional Budget Office.

- a. The forecast is based on a regression using the same variables as in Table B-3, but for the 1973:1-1989:4 period. Predicted values of case openings<sub>t-1</sub>, rather than actual values, are used in the forecast. The average absolute error is 24,473, or 4.0 percent.



## APPENDIX C. AN ESTIMATE OF THE EFFECTS ON AFDC OF THE DECLINE IN THE PROGRAM'S REAL BENEFITS

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If benefit levels in the Aid to Families with Dependent Children program had remained constant in real terms, how much higher would the AFDC caseload now be? Based on a study by the Urban Institute, if benefits had remained constant in real terms since 1975, an estimated 465,000 more families--or 9.5 percent more--would have been eligible for AFDC benefits in 1990.<sup>1</sup> Most of the additional families would have become eligible for the program during the 1975-1980 period (an additional 330,000 families), rather than during the 1980-1985 period (an additional 125,000 families) or the 1985-1990 period (an additional 10,000 families).<sup>2</sup>

If AFDC benefits had remained constant in real terms since 1975, families with income other than AFDC would have accounted for 35 percent of the caseload in 1990 rather than 31 percent, and earners would have accounted for 12 percent rather than 9 percent. Families with the highest earnings or unearned income were most affected by declining real benefits. Although families with no income other than AFDC would have fallen as a proportion of all AFDC families had benefits not declined in real terms, they would still have accounted for around two-thirds of the caseload.

In addition to their effects on caseloads, declining real AFDC benefits had a major effect on families' average benefits and on program costs. If AFDC benefits had remained at their 1975 levels in real terms, annual benefits per participating family in 1990 would have been \$1,343 higher. Moreover, program outlays for benefit payments (federal plus state) would have been \$7.1 billion, or 40 percent, higher than they actually were. However, an estimated 22 percent of the reduction in payments was offset by higher food stamp benefits.

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1. Sandra Clark, Paul Johnson, and Linda Giannarelli, *The Effects of Declining Real AFDC Benefit Levels on Program Costs and Caseloads* (Washington D.C.: Urban Institute, 1992). This report was prepared for the Congressional Budget Office.
  2. These estimates, based on the TRIM2 model, do not incorporate behavior of families potentially eligible for AFDC. For example, the decline in real AFDC benefits would affect a family's decision between work and welfare, as discussed above. The TRIM2 estimates answer a simpler question: How many more families would have been eligible for AFDC, given their 1990 earnings, if AFDC benefits had been held constant in real terms?



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## APPENDIX D. DATA SUPPORTING THE ANALYSIS

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This appendix shows the means of the independent variables and the data series used in the several regressions discussed in earlier sections of the memorandum.

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TABLE D-1. MEANS OF INDEPENDENT VARIABLES RELATED TO AFDC CASELOADS, CASE OPENINGS, AND CASE CLOSINGS

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Variable	1973:1-1991:3	1973:1-1989:4
Female-Headed Families	1,510,000	1,363,000
Employment Gap	1.37	1.43
Real AFDC Benefits	504	511
Real AFDC+FS Benefits	691	695
Real Earnings of Women, HS, 18-24	14,690	14,750
Real Earnings of Men, HS, 18-24	19,047	19,311
AFDC Case Openings	490,576	476,930

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SOURCE: Congressional Budget Office.

NOTES: FS = food stamps; HS = high school.

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TABLE D-2. DATA SERIES USED IN THE REGRESSIONS: AFDC CASELOADS, FEMALE-HEADED FAMILIES, AND THE EMPLOYMENT GAP

Year and Quarter	AFDC- Basic Caseload (Thousands)	AFDC-Unem- ployed Parent Caseload (Thousands)	Female- Headed Families (Thousands)	Employment Gap (Percent)
Actual				
1973:1	2,982	125	428	-0.6
1973:2	2,989	111	440	-1.0
1973:3	2,992	92	454	-0.9
1973:4	3,018	87	470	-1.3
1974:1	3,045	98	494	-1.3
1974:2	3,058	92	512	-0.8
1974:3	3,073	83	528	-0.4
1974:4	3,141	86	543	0.7
1975:1	3,242	114	554	2.8
1975:2	3,299	116	568	3.4
1975:3	3,312	116	582	3.2
1975:4	3,349	126	598	3.4
1976:1	3,368	149	612	2.8
1976:2	3,350	150	634	2.5
1976:3	3,332	145	660	2.5
1976:4	3,346	144	691	2.6
1977:1	3,370	165	730	2.4
1977:2	3,369	154	767	1.6
1977:3	3,357	133	804	1.5
1977:4	3,346	125	841	0.8
1978:1	3,341	143	877	0.6
1978:2	3,325	132	915	-0.1
1978:3	3,299	114	953	0
1978:4	3,295	109	990	-0.4
1979:1	3,304	123	1,030	-0.6
1979:2	3,302	117	1,064	0
1979:3	3,300	106	1,094	-0.1
1979:4	3,350	111	1,121	0
1980:1	3,404	136	1,141	0.3
1980:2	3,435	149	1,166	1.7
1980:3	3,493	167	1,191	2.3
1980:4	3,554	184	1,219	2.1

(Continued)

TABLE D-2. CONTINUED

Year and Quarter	AFDC-Basic Caseload (Thousands)	AFDC-Unemployed Parent Caseload (Thousands)	Female-Headed Families (Thousands)	Employment Gap (Percent)
1981:1	3,620	216	1,248	1.9
1981:2	3,587	223	1,279	1.9
1981:3	3,586	212	1,312	2.6
1981:4	3,461	215	1,348	3.4
1982:1	3,330	235	1,389	4.1
1982:2	3,270	236	1,424	4.4
1982:3	3,272	241	1,456	5.0
1982:4	3,316	248	1,485	5.7
1983:1	3,378	281	1,507	6.1
1983:2	3,398	283	1,535	5.6
1983:3	3,392	278	1,565	4.4
1983:4	3,420	287	1,595	3.9
1984:1	3,449	304	1,633	3.2
1984:2	3,449	293	1,664	2.3
1984:3	3,413	265	1,694	2.4
1984:4	3,406	256	1,724	2.2
1985:1	3,427	271	1,746	2.0
1985:2	3,436	266	1,781	2.2
1985:3	3,427	250	1,823	2.2
1985:4	3,453	246	1,870	1.8
1986:1	3,488	264	1,932	1.5
1986:2	3,508	261	1,984	1.5
1986:3	3,503	242	2,034	1.1
1986:4	3,526	236	2,082	1.0
1987:1	3,552	249	2,118	0.8
1987:2	3,559	240	2,168	0.3
1987:3	3,528	218	2,223	0
1987:4	3,519	208	2,282	-0.2
1988:1	3,538	220	2,359	-0.3
1988:2	3,540	212	2,415	-0.4
1988:3	3,526	197	2,463	-0.5
1988:4	3,539	191	2,504	-0.8

(Continued)

TABLE D-2. CONTINUED

Year and Quarter	AFDC-Basic Caseload (Thousands)	AFDC-Unemployed Parent Caseload (Thousands)	Female-Headed Families (Thousands)	Employment Gap (Percent)
1989:1	3,568	200	2,521	-1.2
1989:2	3,579	195	2,562	-1.1
1989:3	3,591	183	2,610	-1.0
1989:4	3,652	185	2,667	-0.8
1990:1	3,739	209	2,747	-0.8
1990:2	3,808	212	2,812	-0.5
1990:3	3,861	206	2,876	0.2
1990:4	3,942	214	2,940	0.9
1991:1	4,050	244	2,991	1.7
1991:2	4,154	259	3,064	2.0
1991:3	4,243	260	3,145	2.6
1991:4	4,349	270	3,234	2.9
1992:1	4,420	288	3,330	3.0
1992:2	4,462	290	3,434	2.9
1992:3	4,510	282	3,547	3.2
<b>Projected</b>				
1992:4	4,566	286	3,627	3.3
1993:1	4,615	306	3,691	3.2
1993:2	4,638	305	3,767	3.0
1993:3	4,640	291	3,844	2.8
1993:4	4,674	290	3,924	2.6
1994:1	4,722	306	4,011	2.3
1994:2	4,743	300	4,097	2.1
1994:3	4,749	284	4,181	1.9
1994:4	4,793	280	4,270	1.8
1995:1	4,849	296	4,357	1.7
1995:2	4,883	291	4,448	1.6
1995:3	4,902	276	4,538	1.5

SOURCE: Congressional Budget Office using data from the Administration for Children and Families, the Bureau of the Census, and the Bureau of Labor Statistics.

NOTE: Data series are defined in Table 3 and Table B-1.

**TABLE D-3. DATA SERIES USED IN THE REGRESSIONS: REAL AFDC BENEFITS, REAL EARNINGS, AND CASE OPENINGS AND CLOSINGS**

Year and Quarter	Real AFDC Benefits (Dollars)	Real AFDC + FS Benefits (Dollars)	Real Earnings of Women, HS, 18-24 (Dollars)	Real Earnings of Men, HS, 18-24 (Dollars)	Case Openings (Thousands)	Case Closings (Thousands)
<b>Actual</b>						
1973:1	608	763	15,392	22,206	362	329
1973:2	594	745	15,674	21,907	335	376
1973:3	603	757	15,785	21,646	361	352
1973:4	592	743	15,739	21,366	362	340
1974:1	578	774	15,446	20,888	372	325
1974:2	563	754	15,157	20,502	357	383
1974:3	584	770	14,852	20,139	407	363
1974:4	578	759	14,615	19,887	438	337
1975:1	573	762	14,540	19,850	451	338
1975:2	566	752	14,578	19,947	405	381
1975:3	581	763	14,547	19,923	429	390
1975:4	571	751	14,651	20,053	432	387
1976:1	568	750	14,992	20,414	411	382
1976:2	559	739	15,155	20,611	391	431
1976:3	575	753	15,227	20,697	432	427
1976:4	570	745	15,282	20,778	448	409
1977:1	563	735	15,164	20,681	434	394
1977:2	551	720	15,085	20,580	398	446
1977:3	570	745	15,153	20,669	439	453
1977:4	566	739	15,274	20,821	437	440
1978:1	557	736	15,394	20,916	430	406
1978:2	545	720	15,358	20,877	397	463
1978:3	555	750	15,371	20,934	439	470
1978:4	547	739	15,407	21,050	447	438
1979:1	538	728	15,335	21,036	433	410
1979:2	523	705	15,198	20,950	409	447
1979:3	540	730	15,102	20,925	451	428
1979:4	530	714	15,084	20,996	466	416
1980:1	512	704	14,947	20,995	455	399
1980:2	498	689	14,859	20,838	452	434
1980:3	518	696	14,832	20,666	532	455
1980:4	505	681	14,823	20,428	518	458

(Continued)

TABLE D-3. CONTINUED

Year and Quarter	Real AFDC Benefits (Dollars)	Real AFDC + FS Benefits (Dollars)	Real Earnings of Women, HS, 18-24 (Dollars)	Real Earnings of Men, HS, 18-24 (Dollars)	Case Openings (Thousands)	Case Closings (Thousands)
1981:1	495	699	14,730	19,870	492	437
1981:2	485	686	14,689	19,540	448	503
1981:3	487	681	14,649	19,245	513	555
1981:4	479	669	14,635	19,027	488	679
1982:1	476	662	14,706	19,018	483	535
1982:2	472	655	14,675	18,831	456	531
1982:3	465	644	14,488	18,454	527	513
1982:4	462	662	14,396	18,211	528	465
1983:1	460	659	14,230	17,856	518	442
1983:2	456	653	14,129	17,645	455	516
1983:3	459	652	14,098	17,555	536	523
1983:4	457	650	14,122	17,565	535	507
1984:1	457	646	14,265	17,761	511	471
1984:2	453	641	14,296	17,828	462	538
1984:3	462	645	14,297	17,870	526	570
1984:4	465	657	14,252	17,860	539	527
1985:1	460	652	14,071	17,720	512	471
1985:2	456	648	14,003	17,645	480	529
1985:3	467	654	13,984	17,596	542	548
1985:4	466	656	13,943	17,482	554	518
1986:1	469	656	14,012	17,450	515	476
1986:2	472	661	14,247	17,632	493	551
1986:3	481	664	14,337	17,627	546	562
1986:4	477	665	14,435	17,635	552	542
1987:1	476	660	14,465	17,512	527	508
1987:2	471	652	14,533	17,549	494	585
1987:3	473	650	14,624	17,667	548	598
1987:4	470	662	14,742	17,866	545	576
1988:1	472	663	14,951	18,269	554	538
1988:2	468	656	14,958	18,368	531	606
1988:3	471	654	14,877	18,340	578	586
1988:4	466	657	14,765	18,243	578	583

(Continued)



TABLE D-3. CONTINUED

Year and Quarter	Real AFDC Benefits (Dollars)	Real AFDC + FS Benefits (Dollars)	Real Earnings of Women, HS, 18-24 (Dollars)	Real Earnings of Men, HS, 18-24 (Dollars)	Case Openings (Thousands)	Case Closings (Thousands)
1989:1	462	651	14,431	17,961	572	544
1989:2	455	641	14,275	17,647	546	601
1989:3	459	641	14,294	17,441	615	609
1989:4	455	663	14,355	17,202	602	563
1990:1	454	657	14,569	16,751	605	537
1990:2	450	651	14,558	16,600	575	589
1990:3	444	642	14,380	16,397	622	597
1990:4	438	651	14,142	16,257	645	559
1991:1	434	645	13,959	16,309	631	530
1991:2	433	643	13,744	16,451	610	612
1991:3	424	635	13,458	16,635	673	635
1991:4	420	n.a.	n.a.	n.a.	n.a.	n.a.
1992:1	418	n.a.	n.a.	n.a.	n.a.	n.a.
1992:2	415	n.a.	n.a.	n.a.	n.a.	n.a.
1992:3	412	n.a.	n.a.	n.a.	n.a.	n.a.
Projected						
1992:4	411	n.a.	n.a.	n.a.	n.a.	n.a.
1993:1	407	n.a.	n.a.	n.a.	n.a.	n.a.
1993:2	404	n.a.	n.a.	n.a.	n.a.	n.a.
1993:3	401	n.a.	n.a.	n.a.	n.a.	n.a.
1993:4	400	n.a.	n.a.	n.a.	n.a.	n.a.
1994:1	400	n.a.	n.a.	n.a.	n.a.	n.a.
1994:2	399	n.a.	n.a.	n.a.	n.a.	n.a.
1994:3	398	n.a.	n.a.	n.a.	n.a.	n.a.
1994:4	397	n.a.	n.a.	n.a.	n.a.	n.a.
1995:1	396	n.a.	n.a.	n.a.	n.a.	n.a.
1995:2	395	n.a.	n.a.	n.a.	n.a.	n.a.
1995:3	394	n.a.	n.a.	n.a.	n.a.	n.a.

SOURCE: Congressional Budget Office using data from the Administration for Children and Families, the Food and Nutrition Service, and the Bureau of the Census.

NOTES: Data series are defined in Table 3 and Table B-1.

FS = food stamps; HS = high school; n.a. = not available.

