1998

The Labor Supply Effects of Welfare Reform

Timothy J. Bartik
W.E. Upjohn Institute

Upjohn Institute Working Paper No. 98-53

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Timothy J. Bartik
Senior Economist
W.E. Upjohn Institute for Employment Research
300 S. Westnedge Avenue
Kalamazoo, MI 49007
e-mail: bartik@we.upjohninst.org
phone: 616-343-5541

July 16, 1998

Some of the ideas in this paper were inspired by communications with David Card, Patricia Ruggles, and Bruce Meyer. I am also grateful to Daniel McMurrer for providing me with spreadsheets describing the Urban Institute's methodology for estimating the effects of welfare work requirements. Ken Kline provided excellent research assistance. The research for this paper was conducted with financial assistance from the Joint Center for Poverty Research, for the project "Labor Markets and Less Skilled Workers." I also received financial assistance from the Russell Sage Foundation (RSF# 85-96-17), and the Rockefeller Foundation (RF 94063 #9), as part of the project "Jobs for the Poor: Can Labor Demand Policies Help?" The opinions, findings, and conclusions of this paper are those of the author and do not necessarily reflect the views of the Joint Center for Poverty Research, the Russell Sage Foundation, the Rockefeller Foundation, the Upjohn Institute, or any of the persons mentioned above.

1. INTRODUCTION

A major concern about welfare reform is that it may reduce wages and raise unemployment, both for former welfare recipients and other groups. For these "displacement effects" of welfare reform to be large, the increase in labor supply caused by welfare reform must be large. (The size of displacement effects also depends on much else, including how employers respond to welfare reform and the dynamics of wage changes.) This paper examines the likely effects of welfare reform on labor supply.

The United States has been reforming welfare for so many years that any dating of welfare reform's start is arbitrary. President Clinton's signing of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 was a major milestone in welfare reform. This bill removed the federal entitlement to welfare benefits, converted welfare from a matching grant into a fixed block grant paid to the states, imposed new work requirements and time limits on receiving benefits for welfare recipients, and allowed states more flexibility in imposing sanctions on welfare recipients. The enactment of the legislation was preceded, however, by many previous welfare reform efforts, including the Family Support Act of 1988, President Clinton's 1992 campaign promise to "End Welfare As We Know It," and numerous waivers granted to states for welfare reforms, first under the Bush Administration and then accelerating in the Clinton Administration's first term.

This paper focuses on the labor supply effects of the welfare reform wave that began in 1993, with the election of a Democratic President willing to endorse welfare changes that focus on pushing recipients off welfare and into work, first through waivers to states and then through signing the 1996 bill. I consider welfare reform to be more than changes in law. Welfare reform is considered to be a shift in the dominant political mood. Welfare reform is a shift toward a greater willingness state and federal governments to drop welfare recipients from the welfare rolls, or to impose work

requirements on welfare recipients. Although such efforts have occurred here and there for many years, they became significant on a national scale during the 1993-96 time period, and have accelerated further since the 1996 bill. Welfare reform efforts prior to 1993 did not prevent welfare caseloads from increasing from 3.8 million in 1989 to 5.0 million in 1993 (U.S. Department of Health and Human Services,1998b); the majority of this increase cannot be explained by the economy (Blank, 1997). Welfare rolls fell to 4.6 million in 1996, and to 3.2 million as of March 1998. As shown later in this paper, little of this decline in welfare rolls can be explained by improvements in the economy.

Recent welfare reforms may increase labor supply in many ways. Cuts in the real value of welfare benefits, work requirements for welfare recipients, and sanctions for failure to follow a state's requirements for welfare recipients, such as requirements for participation in work-related activities, may make living on welfare more difficult. As a result, some persons may leave welfare and enter the labor force, and others may not apply for welfare and instead stay in the labor force. These choices are influenced by how tough a state's welfare program is perceived to be, and thus are influenced by a state's rhetoric about welfare reform, not just the requirements of state law. Sanctions on welfare recipients may throw some welfare recipients off the welfare rolls and force them to seek work. Time limits on the maximum number of years that a welfare recipient can receive benefits may eventually cut some welfare recipients off of welfare, although so far almost no state time limits have had time to cut off anyone's benefits, and the five-year federal time limit will not begin cutting off benefits until 2001 and 2002 (the five-year clock begins "ticking" depending upon when the state chose to begin operating under the new welfare law, which was 1997 for most states). Work requirements for welfare recipients, financial incentives for welfare recipients to work, and "welfare to work programs"

(a term describing programs that provide welfare recipients with training, counseling, and job placement) may increase work among welfare recipients, and help some to leave welfare through work.

After reviewing in section 2 previous research on how welfare reform might affect labor supply, I present in section 3 new simulations of the effects of welfare reform on labor supply. I calculate that from 1993-97, welfare reform has increased the number of persons in the labor force by over 300,000. If preliminary welfare caseload trends from early 1998 continue, an additional 200,000 persons may be added by welfare reform to the labor force in 1998, for a 1993-98 total of over 500,000. Under various scenarios for the future of the economy and welfare reform, I project that welfare reform may add another half million to million labor force participants to the economy by 2005, for a 1993-2005 cumulative impact of 1 million to 1.5 million additional labor force participants. Section 4 explores whether effects of this size are "large."

2. REVIEW OF PREVIOUS ESTIMATES

Table 1 summarizes previous studies that can be used to estimate how much the welfare reforms of the 1990s have increased labor supply. Although these calculations are based on previous studies, I have made a number of assumptions to produce these numbers. The authors of these studies might not agree with the estimates I have derived from their studies.

Deriving the estimates in Table 1 requires some assumptions about the magnitude of the effect on labor supply of reducing the welfare caseload. Several of these studies focus on how welfare reform affects the welfare caseload, and do not directly estimate the effects on labor supply (Levine, Blank, Bartik estimates derived from Blank).

The effect of a policy-caused reduction in the welfare caseload depends upon the difference in labor supply between those on welfare before the policy, and those forced off welfare due to the policy. Urban Institute researchers (McMurrer, Sawhill, and Lerman, 1997c) estimate that 13 percent of one-adult welfare cases include a worker, and 22.2 percent of two-adult cases include a worker.[1] According to summaries by the National Conference of State Legislatures of state surveys, between 50 and 60 percent of those leaving welfare on their own find jobs, whereas 40 to 50 percent of those recipients leaving welfare because of state sanctions find jobs (Tweedie and Reichert, 1998). This is consistent with previous estimates by Pavetti that 46 percent of all exits from welfare are due to getting a job (Pavetti, 1993). Hence, a rough estimate is that for every case that leaves the welfare rolls, the labor supply goes up by .3 to .5 persons.

This estimate does not consider two other factors, one of which decreases the labor supply effects of a case leaving the welfare rolls, and the other of which increases the labor supply effects. The first factor is the finding in research by Edin and Lein (1997) that many welfare mothers engage in unreported or underground work. According to Edin and Lein's in-depth interviews with welfare mothers, although five percent of welfare mothers report working to the welfare department, 46 percent actually do some sort of work.

Upon further analysis, Edin and Lein's research only slightly reduces the labor supply effects of a person leaving the welfare reform rolls. Although many welfare mothers engage in unreported or underground work, they generally do such work for only a few hours per week. Edin and Lein's figures imply that unreported and underground work for the average welfare mother is only about

[1]This is consistent with other sources. For example, according to the U.S. Department of Health and Human Services (1995), in FY 1995, 8.8 percent of female adult AFDC recipients had at least some earnings, and 12.6 percent of male adult AFDC recipients had at least some earnings.

four hours per week.[2] Furthermore, Edin and Lein's interviews with low-income working mothers indicate that they engaged in unreported and underground work to only a slightly lesser extent than welfare mothers, averaging around two hours per week.[3] Thus, moving off the welfare rolls reduces unreported and underground work by about two hours per week. This reduction in labor supply is small compared to the hours worked at reported jobs by ex-welfare recipients. For example, March Current Population Survey data indicates that single mothers who received welfare the previous year, but were working as of the March survey, worked an average of 26.1 hours per week (Bartik, 1997).

The second factor is that labor supply includes the unemployed seeking work as well as those employed. It seems likely that the number of unemployed will increase as some group moves off the welfare rolls. Unfortunately, there are no reliable data on how unemployment changes as persons move off the welfare rolls. Some studies report data on "unemployment" among ex-welfare recipients, but it is unclear whether these unemployment data are consistent with official U.S. definitions of unemployment, which require job search behavior within a specified recent time period. For example, in Danziger and Kossoudji's (1995) research on what happened to general assistance recipients in Michigan after the program was abolished, as of two years after the program's abolition, 39 percent of non-disabled younger (40 years old or less) former recipients reported being employed, and 82 percent reported being employed or unemployed, for an unemployment rate of over 50

[2]Edin and Lein estimate that unreported and underground work results in $109 in monthly earnings for a typical welfare mother. Assuming that this work pays $6 per hour, the hours per week would be $109 times (12/52) times (1/$6), or $109/$26 = 4.2 hours per week.

[3]In Edin and Lein's sample of "wage reliant" single mothers, unreported and underground work results in average monthly earnings of $61, which at $6 per hour implies average weekly hours of around 2.3 hours.

percent.[4] It is unclear, however, how many of these unemployed would be counted under official U.S. unemployment definitions.

To derive the estimates in Table 1, I assume that for each single mother forced off welfare, the labor force increases by .47. This is derived by subtracting a 13 percent labor force participation rate for single welfare mothers from an assumed 60 percent labor force participation rate once they are forced off of welfare. I choose a 60 percent figure, which is toward the high side of recent studies of the employment of ex-welfare recipients, because these recent studies generally only look at employment, and do not reflect unemployed ex-welfare recipients. I assume that for each two-parent family forced off of welfare, the labor force increases by .378(=.60-.222).

Table 1's various estimates of the labor supply effects of welfare reform are remarkably consistent. In judging consistency, one must adjust for differences in the time period, and the methodology of the study. The first three studies in Table 1 estimate the effects of welfare reform on welfare rolls and labor supply using data on the effects of state waivers prior to the 1996 welfare bill. These studies would be expected to get lower estimates of the effects of welfare reform because these studies are not designed to detect the effects of welfare reform post-1996. Among these three studies, Blank's study, and Meyer and Rosenbaum's study, would be expected to estimate larger welfare reform effects than Levine's study; Levine only considers the effects of welfare reform waivers, whereas the other two studies consider a wide variety of welfare policy variables.[5]

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[4]These figures combine the groups labeled in Danziger and Kossoudji's work as "younger, healthy," and "younger, chronic health condition." This excludes persons over 40 years old, and those who are enrolled in a disability program.

[5]One recent study of welfare waivers (Ziliak et al, 1997) finds much smaller effects of state welfare waivers on welfare caseloads. This result, however, largely occurs because this study finds that "work pays" waivers significantly increase the welfare caseload. Because "work pays" waivers would be expected to increase labor force participation rates by those on welfare, the results in Ziliak et al's study may be perfectly consistent with large effects of state welfare waivers on labor supply.

The last four studies in Table 1 include the post-1996 time period, and for that reason alone would be expected to yield larger estimates of the effects of welfare reform. The methodology of the last four studies in Table 1 also may explain their larger estimates. These studies all implicitly assume that trends in welfare rolls or labor force participation that cannot be explained by the economy or demographics must be due to welfare reform. From a statistical perspective, attributing all "unexplained trends" to one cause is usually unwarranted. In the present case, however, such an assumption may make sense for the post-1996 time period. We know that there was a large policy intervention with the signing of the 1996 welfare bill. This signing was closely followed by large unexplained drops in welfare rolls and increases in labor force participation rates among single mothers. It is entirely plausible that most and perhaps all of these unobserved trends may be attributed to the shifting political and policy regime represented by the 1996 welfare bill. Furthermore, for the pre-1996 period, studies 4 and 6 appear to give similar estimates to what was obtained in Blank's study and Meyer and Rosenbaum's study. Thus, assuming that all unexplained trends are due to welfare reform appears to give similar results to only attributing to welfare reform what can be associated with measured state welfare policies.[6]

The bottom line from Table 1 is that welfare reform from 1993-96 probably increased labor supply by 100,000 to 300,000 additional labor force participants. From 1996-98, welfare reform has

[6]It should be noted that data for the first six months of 1998 suggest that the "unexplained" growth in the labor force of female-headed households, with other relatives present, may have slowed down. (It is data on this group that is the basis for Mary Daly's study.) For example, from August 1996 to August 1997 the labor force of this group grew from 7.986 million to 8.581 million. But the labor force of this group grew from June 1997 to June 1998 only from 8.503 million to 8.513 million (Source: BLS website, series LFS462002). There may be several explanations of these recent trends: (1) Cuts in welfare rolls may be beginning to slow down, although no such trend is observable through March 1998; (2) Welfare roll cutbacks, after initially affecting individuals who were able to go out and seek jobs, are now affecting persons who are unable to participate in the labor market; (3) Welfare roll cutbacks may have caused some persons to move in with others, so they are no longer household heads; (4) Welfare roll cutbacks and the resulting increase in labor force participation by some female heads may, by worsening labor market conditions, resulted in some reduction in labor force participation rates among other female heads.

probably added more than 300,000 additional labor force participants. Over the entire 1993-98 period, welfare reform has probably added between one-half million and three-fourths of a million additional labor force participants.

Other studies have projected how the 1996 welfare reform bill might affect welfare rolls and labor supply in the future. Table 2 summarizes the labor supply effects implied by three such studies. Again, I note that these studies combine estimates by the authors with my calculations, and the authors might not agree with my extensions. Each of the three studies considers the effects of a different feature of the bill.

The McMurrer, Sawhill, and Lerman (1997a,b,c) study considers the possible labor supply effects of the welfare reform bill's work requirements.[7] The bill has gradually escalating requirements for what percentage of the overall caseload, and the two-parent family caseload, that must work. By fiscal year 2002, 50 percent of the overall caseload must work, and 90 percent of the two-parent caseload.[8] These work requirements are reduced by the percentage that the state's welfare caseload has declined since FY 1995.[9]

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[7]One widely cited estimate of the wage effects of welfare reform appears to rely on calculations of labor supply effects that are similar to McMurrer et al's. The study by Mishel and Schmitt (1995) of the Economic Policy Institute assumes that the welfare bill proposed in the Senate in 1995 would have increased labor supply by FY 2000 by around one million labor force participants. This calculation appears to be based on HHS projections based on work requirements in the Senate bill.

[8]The overall work requirement only applies to a portion of the caseload. "Child-only" cases are exempt from the work requirement, and states can exempt cases in which a single mother is pregnant or has a child under the age of one. McMurrer et al use estimates that 18.2 percent of the total caseload is "child only" cases (based on Zedlewski and Giannarelli, 1997), and that 9 percent of the total caseload has an unborn child or a child under the age of one (based on U.S. Department of Health and Human Services, 1995).

[9]The caseload reduction credit is not supposed to be allowed if the reduction is due to changes in state or federal rules for who is eligible for welfare. However, the caseload reduction credit is allowed if the caseload is reduced because the state is more vigorous in enforcing existing rules, for example, more vigorous in enforcing work requirements. This would appear to allow ample scope for states to use policy to reduce welfare rolls, and get the full caseload reduction credit.

Unfortunately, the McMurrer et al calculations, completed in July 1997, have been outdated by the subsequent rapid reduction in welfare rolls. The McMurrer et al calculations assumed that the welfare caseload, which was around 4 million in 1997, would grow at an annual rate of 1.2 percent over the next five years, based on previous long-term Clinton Administration projections. This would allow states to get some credit for caseload reductions since fiscal year 1995 (the fiscal year 1995 caseload was 4.9 million), but the work requirements in the welfare bill would still be binding, both for two-adult cases and one-adult cases. By March 1998, however, U.S. welfare caseloads had dropped to 3.2 million. This provides states with huge caseload reduction credits, which will enormously reduce the labor supply effects of the welfare bill's work requirements. My own simulations, to be detailed further in section 3, indicate that even if welfare rolls begin growing again at their long-term rates, the work requirements will, through at least the year 2002, only have modest effects. The caseload reduction credit will probably be sufficient to require no more work of single parent cases than they are presently engaged in, and will only increase the labor supply of two-parent cases by less than 100,000 labor force participants.[10]

The Chernick and Reschovsky (1996) study considers the effects on welfare caseloads due to state responses to the different incentives provided by a welfare block grant. The 1996 welfare reform bill changed state fiscal incentives in two ways. First, it raised the price to states of spending on welfare. Under the previous matching structure of the AFDC program, the average state only paid 40 percent of the cost of increasing welfare spending by one more dollar. Under the new welfare bill, with a fixed block grant, spending one more dollar costs a state the full dollar. Second, depending

[10]Of course, if one allows for constant long-term growth in welfare rolls, eventually the welfare bill's work requirements do become binding. However, with welfare rolls starting at 33 percent below their FY 1995 level(=reduction from 4.876 million for 1995 to 3.224 million in March 1998), it takes a long time of 1 or 2 percent caseload growth to substantially lower the caseload reduction credit.

upon what one assumes about state caseload trends, and inflation trends, the new welfare bill may eventually reduce the real value of federal assistance for welfare bill. Under the old regime, the federal government shared in the extra costs of welfare if the number of recipients rose over time because of population growth, demographic trends, or economic trends, or if welfare benefit levels were increased to adjust for inflation. The new welfare bill initially provided a fiscal windfall for most states, in that they received a dollar grant greater than they would have been entitled to under the old AFDC program. But this initial block grant is fixed in nominal terms over time. Eventually, if welfare caseloads or welfare benefit levels rise, the new welfare block grant will provide lower real assistance than the old welfare regime.

The Duncan, Harris and Boisjoly (1998) paper considers how many families will be affected by the welfare bill's "five year time limit." No more than 20 percent of a state's caseload at any point in time can have received federally-funded welfare assistance for more than five years.. This is a lifetime time limit, which is supposed to be cumulated over different spells of welfare receipt, even if these welfare spells are in different states (which, as of now, probably cannot be effectively enforced given lack of a good interstate database on welfare receipt). Duncan et al used past patterns of welfare receipt, exit, and entry to calculate what percentage of the caseload, starting at any point in time, would cumulate five years of welfare receipt after five, six, seven, and eight years. After eight years, 41 percent of the welfare caseload is projected to have received welfare assistance for five or more years. Because states can only exempt 20 percent of their caseload from this requirement, this suggests that 21 percent of the current caseload will be cut off from welfare by 2005, eight years after the time limit "clock" started "ticking."

Preliminary evidence suggests that state sanctions policies may reduce, perhaps even to zero, the number of families that states are forced to cut off by the five-year federal time limit. Much of the reduction of state welfare rolls appears to be due to states imposing sanctions on welfare recipients for failure to meet various rules, most commonly for failure to show up for required appointments with caseworkers. According to the federal Department of Health and Human Services, sanction rates of 25 percent or 30 percent are common among the states (Golden 1998). According to Washington Post interviews with state officials, families that do get sanctioned from the welfare rolls tend to come from the "two extremes of the welfare population … At one end are people who are able to find jobs, or have other income … At the other extreme are those unable to meet requirements because they are the most troubled families—plagued by mental illness, substance abuse, domestic violence or such low reading levels that they have difficulty understanding the new regulations … These were the families that authors of welfare reform assumed would be lingering on the rolls for years, the people most likely to be affected by a five-year lifetime limit on benefits included in the 1996 federal law. Instead, they are often the ones being kicked off the rolls now …"(Vobejda and Havemann, March 23, 1998).

Some statistical evidence backs up this anecdotal evidence. For example, a Michigan study that looked at welfare recipients whose cases were closed due to sanctions found that only 39 percent of those sanctioned had high school diplomas or GEDs, compared to 63 percent with high school credentials among the general welfare population (Michigan Family Independence Agency, 1998). It is this low education group that Duncan et al found were particularly likely to reach the five-year time limit.

The projections in Table 2 focus rather narrowly on the effects of changes in the welfare law. These projections are not intended to capture the effects of the change in political attitudes toward welfare represented by the 1996 welfare law. Any effect on labor supply of states simply wanting to be "tougher" on welfare, beyond what one would predict based on price elasticity responses to block grants, or the formal requirements of the 1996 welfare bill, is not estimated in these three studies.

3. NEW PROJECTIONS OF THE LABOR SUPPLY EFFECTS OF WELFARE REFORM

This section reports new simulations of the future labor supply effects of welfare reform. These simulations depend on predicting how welfare reform policies will affect two variables: welfare rolls; the percentage of welfare recipients in the labor force. I try to make plausible "baseline" assumptions about trends in these variables, but also consider alternative scenarios.

Table 3 presents a spreadsheet with summaries of the baseline predictions for the labor supply effects of welfare reform. In the baseline predictions, welfare reform increases the number of labor force participants by 146,000 from 1993-96, 743,000 from 1993-98, and 1,402,000 from 1993-2005.[11] These predictions depend on a number of assumptions, which I will now discuss.

Labor supply implications of welfare reform's effects on the caseload. As discussed in the previous section, I assume that for each single parent case that is removed from the caseload, the labor force increases by .47. This is based on the assumption that labor force participation rates for single parents removed from the caseload average .60, whereas single parents on the caseload are assumed to have a labor force participation rate of .13. Similar reasoning leads to the assumption that

[11]Table 3 goes through 2005, but I have done spreadsheet projections through 2008. A full spreadsheet summarizing all the simulations is available from the author.

for each two parent case removed from the caseload, labor force participation increases by .378 persons (=.60 - .222).[12]

1993-98 caseload trends. Welfare reform's 1993-98 impact on the caseload is derived by comparing actual 1993-98 caseloads with a prediction based solely on unemployment rate trends since 1993, and population growth since 1993-98.

1999-2008 caseload predictions. Future welfare caseloads are derived in the baseline predictions by assuming that the "unexplained" trend in welfare caseloads from 1996-98 represents about half of the ultimate, long-run effects on welfare caseloads of the 1996 welfare bill.[13] This long-run effect on welfare caseloads is chosen arbitrarily, but is about three-fifths of the long-run effects of the welfare bill that are implied by the analysis of Chernick and Reschovsky (1996).[14] Welfare caseloads are assumed to gradually adjust to their long-run level over time.[15] Alternate scenarios consider either stronger or weaker future negative trends in welfare caseloads. One alternative assumes that the unexplained 1996-98 trends in welfare caseloads are only one-third of the ultimate effect of the 1996 welfare bill on caseloads. Another alternative assumes that the unexplained

[12]Data on participation rates for single parent cases and two parent cases is from McMurrer, Sawhill, and Lerman (1997c). Data on participation rates for ex-welfare recipients is based on Tweedie and Reichert (1998). The percentages of all cases that are two-parent, single parent, and child-only are from McMurrer et al (1997c).

[13]This unexplained trend is calculated using the natural logarithm of the welfare caseload, and is equal to -.293. This calculation is done by taking the difference in actual and predicted natural logarithms of welfare caseloads for 1998, minus the same difference for 1996.

[14]The effects of this assumed welfare bill-induced trend in welfare rolls as of 2002 (the year considered by Chernick and Reschovsky) is to reduce the log of the welfare caseload by -.5131. Using the numbers in Table 3, this figure translates into a 2002 caseload reduction of 1.792 million, which is about 3/5ths of what Chernick and Reschovsky's predictions imply for the reduction in the U.S. caseload. See endnote 2 to Table 2.

[15]The adjustment of welfare caseloads in response to policy is assumed to follow a first-order autoregressive adjustment process. That is, the effect of policy on welfare caseloads is equal to some function of last year's effect plus some constant policy shock. For a two year effect of -.293 to be half the ultimate effect, the constant policy shock must be -.1718, and the autoregressive adjustment parameter must be .7071. An equation giving the shock to the log of the caseload for any year is -.5865 times (1 minus .7071 taken to the power of the year minus 1996).

differences between predicted and actual caseloads that developed over 1996-98 will stay constant in the future at its 1998 level.

Future recession. The baseline simulation assumes that a recession begins in 2001, after the next Presidential election. The effects of this recession on unemployment are assumed to follow the average of all U.S. recessions since 1969.[16] The resulting recession peaks at 7.1 percent unemployment in 2003, with a recovery beginning during the Presidential election year of 2004, and the economy returning to the pre-recession unemployment level by 2006. One alternative scenario assumes no U.S. recession throughout the projection period.

This "no recession" scenario seems quite unlikely based on economic history, but is useful in showing how recessions influence the labor supply effects of welfare reform. Because welfare reform policy is assumed to shock the natural logarithm of welfare rolls, the absolute effects of welfare reform on the welfare caseload and labor force participants increase during recessions, as the recession pushes up the welfare caseload. This pattern of policy effects on caseloads seems plausible. Under the 1996 welfare reform bill, states pay the full cost of extra welfare spending, with none of the federal sharing of incremental costs that characterized the old welfare system.[17] This change in incentives should make states quite resistant to paying more for welfare due to recessions. States

[16]On average, these recessions showed an increase in the unemployment rate of 0.9 percent during the first year, 2.3 percent during the second year, 2.8 percent in the third year, and 2.3 percent in the fourth year. I then assumed that the unemployment rate effect of the recession went to 1.1 percent in the fifth year and zero in the sixth year.

[17]There is a modest federal contingency fund under the 1996 welfare bill, amounting to $2 billion over five years. This is a quite modest amount compared to annual federal and state spending under the new welfare bill of over $28 billion (1998 Green Book, page 507 and 512, using 75 percent maintenance of effort requirement figures). Projections done under the different scenarios indicate that at a recession's peak, the caseload will go up around 10 percent, which should increase welfare spending by close to $3 billion per year, which would exhaust the entire five-year fund in one-year. During the 1989-92 recession, total state and federal spending on AFDC increased from $19.7 billion to $25.1 billion. The new federal welfare bill also includes a $1.7 billion loan fund from the federal government to states, but these loans charge the market interest rate on federal debt.

would be expected to search more assiduously for ways to cut back on welfare spending during times of fiscal stress.

Work requirements for welfare recipients. The recent cutbacks in welfare rolls, and expected future cutbacks, are extensive enough that the work requirements in the 1996 welfare bill do not have much effect on labor supply. As mentioned previously, these work requirements allow states to take credit for welfare reform reductions, thus reducing the percentage of the caseload that must be working. Under the baseline scenario, as shown in Table 3, the work requirements end up affecting the labor supply of two-parent families by around 60,000 in 2005. Meeting the two-parent caseload work requirements is sufficient for states to meet the overall caseload work requirement, without any change in work by one-parent families.

Even though the 1996 welfare bill's work requirements are unlikely to have large effects, it still seems likely that states will be taking actions that increase the percentage of the welfare caseload that is employed, for three reasons. First, the 1996 welfare bill does include language requiring that "all" parents receiving welfare assistance for more than two years must engage in some work activity. This provision is quite loose—states are allowed to define a large number of work-related activities as "work," states are allowed to set the minimum number of hours required, and there are no federal penalties for non-compliance—but the provision puts some political and bureaucratic pressure on states to push more long-term welfare recipients to work. Second, the 1996 welfare bill provides $200 million per year for five years in bonuses for "high performance" states. The federal guidelines for awarding the 1999 bonuses include measures of a state's job entry rate and job retention rate for welfare recipients, which will be positively correlated with the percentage of welfare recipients working (U.S. Department of Health and Human Services, 1998a). Third, the 1996 welfare bill

expresses and reinforces a shift in political mood toward a greater willingness to force welfare recipients to work in low-wage jobs. State policy makers will respond to this political shift by increasing the percentage of welfare recipients who work.

In the baseline scenario, I assume that states will gradually increase the percentage of welfare recipients in the labor force, to 50 percent for two-parent families and 30 percent for one-parent families by 2000. These assumed percentages are arbitrarily chosen to be somewhere in-between the statute and current reality. The assumed percentages are considerably less than the nominal statutory requirements of 90 percent for two-parent families and 50 percent for all families, by 2002, but more than the current work percentages of 22.2 percent for two-parent families and 13 percent for one-parent families. I also consider an alternative scenario in which work percentages stay at their current levels.

Time limits for welfare receipt. In the baseline scenario, I assume that the welfare bill's five year time limit, requiring that no more than 20 percent of a state's caseload receive federal aid for more than a cumulative five years, will not be binding. The implicit assumption is that state sanctions policies, and other welfare policies, will remove from the caseload enough potential "long-term" welfare recipients that the federal restriction on long-term receipt will never be invoked. An alternative scenario assumes that federal time limits begin to reduce state caseloads in 2003.[18]

[18]Specifically, I assume in the alternative scenario that the five-year federal time limit reduces the average state's caseload by three percent in 2003, 11 percent in 2004, 17 percent in 2005, 21 percent in 2006, 23.67 percent in 2007, and 25.4 percent in 2008. These figures are based on Duncan et al's (1998) figures that the percentage of the current caseload exceeding the five year cumulative limit will be 23 percent in five years, 31 percent in six years, 37 percent in seven years, and 41 percent after eight years. The figures for 2003 through 2006 are derived by subtracting 20 percent from Duncan's figures. I start the cutoffs in 2003 because many state's implementation of the new welfare bill (and hence the time limit "clock") did not begin until mid-1997, so the first full year in which all states would feel the impact of time limits would be 2003. The figures for 2007 and 2008 assume a gradual tapering off of the cumulative percentage of households subject to the time limit.

Table 4 compares the labor supply effects of welfare reform under the baseline and alternative scenarios. As shown in the table, under the various scenarios, the cumulative 1993-2005 effect of welfare reform on overall labor supply varies between 1 million and 1.5 million additional labor force participants.

4. ARE THE LABOR SUPPLY EFFECTS OF WELFARE REFORM "LARGE"?

If welfare reform does increase the labor supply by 1.4 million labor force participants, as estimated in this paper, is such an increase "large"? The most meaningful way to address this question would be to estimate the economic effects of this increase on wages and unemployment. These effects will be estimated by this author in subsequent work. For this paper, I will try to measure whether the estimated effects of welfare reform on labor supply are large compared to the size of the economy, and compared to typical changes in the economy. These comparisons give some sense of whether one would expect welfare reform to significantly affect unemployment and wages. As I will show, this comparison suggests that the labor supply effects of welfare reform are not large compared to the long-run size of the economy, but may be large compared to typical medium run shifts in the economy, particularly for some education groups and some geographic areas.

The baseline scenario estimates that by its peak in 2005, the shifts in welfare policy since 1993 will have increased the number of labor force participants by 1.402 million.[19] This increase is not large compared to overall U.S. employment in 1997 of 129.558 million (U.S. Department of Labor, 1998a, p. 9, Table A-1). In the long-run, U.S. employment must only increase by 1.1%(=1.402/129.558) of its 1997 level to absorb this labor supply increase.

[19]I have done spreadsheet calculations through 2008, and the peak labor supply impact is 2005. This peak in supply impact is due to welfare rolls peaking in 2005, as a result of a delayed response of welfare rolls to the 2001-2005 recession.

The long-run labor supply increase is also not large compared to the overall population of less-educated women. At the peak in 2005, the baseline scenario estimates that welfare reform policies from 1993 on will have increased the labor supply of single mothers by 1.268 million additional labor force participants. This is only 1.9 percent of the estimated U.S. population of less-educated women (women ages 16-64 with less than 16 years of education).[20] In the long-run, one would expect that the labor market for less-educated women will be able to absorb this labor supply increase without undue changes in wages and other economic conditions.

Over the medium-term, however, the labor supply increases due to welfare reform may be relatively large compared to typical economic changes. In the baseline scenario, the peak labor supply increase during a five year period occurs from 1995-2000, and amounts to an increase of 1.008 million labor force participants, .905 million of whom are single parent households. This labor supply increase is 9.1 percent of the 1992-97 increase in U.S. employment (9.1%=1.008/11.066).[21] The five-year increase in single parent labor force participants due to welfare reform is 29.8 percent of the 1992-97 increase in U.S. employment of less-educated women (29.8=.905/3.034).[22] Based on these comparisons, it seems plausible that it might take a significant reduction in the wages of less-educated women to fully absorb the labor supply effects of welfare reform within a five-year period.

Absorbing the labor supply increases due to welfare reform may be particularly difficult in some local labor markets, those with some combination of large percentages of welfare recipients and slow growth in labor demand for less-educated women. Table 5 presents data for each state on how

[20]These calculations of the population of less-educated women are for 1995, and are calculated by the author from the Current Population Survey, Outgoing Rotation Group.

[21]The overall increase in U.S. employment is again taken from U.S. Department of Labor (1998a, p. 9, Table A-1).

[22]The employment figures for the 1992-97 period for less-educated women are from the Current Population Survey, Outgoing Rotation Group, and are for women ages 16-64 with less than 16 years of education.

the expected labor supply increase due to welfare reform compares to the size of the state. The table reports both the long-run labor supply increase due to welfare reform for single parents, as a percentage of the total population of less-educated women; and, the five-year labor supply increase due to welfare reform for single parents, as a percentage of the 1992-97 increase in state employment for less-educated women.

The table identifies eleven states as being "high impact" states for welfare reform. States are classified as high impact if both the long-run labor supply increase and their five-year labor supply increase, compared to the size and growth of the state's economy, are among the top third of all states. High impact states are California, Connecticut, the District of Columbia, Illinois, Maine, Maryland, Massachusetts, New York, Pennsylvania, Rhode Island, and Vermont. Eleven states are classified as "low impact" states for welfare reform, based on both their long-run and five-year labor supply increase due to welfare reform, compared to their state's economies, being among the bottom third of all states. Low impact states are Alabama, Arkansas, Colorado, Idaho, Indiana, Nevada, North Dakota, Oregon, South Dakota, Utah, and Wisconsin.

These results suggest that the labor supply effects of welfare reform are likely to be particularly large in East Coast states plus Illinois and California, states that are slower-growing and traditionally have had more liberal welfare laws with larger welfare caseloads. The labor supply effects of welfare reform are likely to be minor in a disparate collection of faster growing states with low or modest caseloads, including some states in the Mountain West and Great Plains, some states in the Midwest, and some states in the South.

In some cases, one would anticipate that it will be difficult for the state labor market to fully adjust to the labor supply effects of welfare reform within a five year period. The eleven high impact

states all have five-year labor supply effects of welfare reform that are over 45 percent of their 1992-97 increase in employment for less-educated women. New York State, for example, is expected to have five-year labor supply increases due to welfare reform that are 96 percent of its 1992-97 increase in employment of less-educated women. In other words, if welfare reform had been fully implemented in New York State in 1992, the resulting labor supply increase could only have been fully accommodated if the rate of employment growth for less-educated women had doubled. This does not seem likely. One would expect welfare reform in New York State to result in some increase in unemployment for less-educated women, and some reduction in the wages of less-educated women.

5. CONCLUSION

One important finding of this paper is how much the labor market effects of welfare reform depend on the current and future political mood. The formal legal requirements of the 1996 welfare bill may be less crucial. The large effects of the 1996 welfare reform bill up through 1998 depend in part on aggressive state use of sanctions, which was permitted but not required by the 1996 bill. The large 1996-98 effects may also in part depend on perceptions by potential welfare recipients that states have become "tougher." In projecting future effects of welfare reform, the important assumptions include how state policy makers will choose to affect the trend growth rate of welfare rolls, and how state policy makers will choose to increase the percentage of welfare recipients who work. Federal work requirements and time limits may be of less import.

The importance of political mood and choice makes the future labor market effects of welfare reform harder to predict. Political mood can shift more easily than legal requirements. Understanding

and monitoring how states are choosing to use welfare reform policies to affect labor supply is important, because these choices could certainly shift rapidly over time.

Under reasonable projections of how welfare reform policy is likely to evolve over the next ten years, welfare reform is likely to increase labor supply by between one million and one-and-a-half million labor force participants. In the long-run, the labor market effects of this labor supply increase will be small. In the medium-run, this labor supply increase is likely to have significant effects on the labor market for less-educated women. These medium-run effects are likely to be particularly large in some local labor markets, those with a history of greater welfare usage, and slow employment growth. Estimating the magnitude of these labor market effects will be undertaken in a future paper.

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Table 1. Recent Estimates of the Effects of Welfare Reform in the 1990s on Labor Supply

Study	Time period	Estimated effect on labor supply	Brief description of methodology
1. Levine, as extrapolated by Bartik[1]	1993-96 1993-98	59,000 290,000	Estimated effects of state welfare reform waivers on welfare rolls
2. Blank, as extrapolated by Bartik based on policy estimates[2]	1990-95	191,000	Estimated effect of state welfare policy variables on welfare rolls
3. Meyer and Rosenbaum, as extrapolated by Bartik[3]	1993-96	249,000	Estimated effects of state welfare policy variables on employment probability of single mothers versus childless single women
4. Bartik calculations based on Blank's estimates of effects of unemployment on welfare rolls[4]	1993-96 1996-97 1993-97 1993-98	146,000 215,000 361,000 555,000	Change in welfare rolls that can not be explained by changes in unemployment
5.Daly, extrapolated by Bartik[5]	1996-97	325,000	Labor force growth trends for women maintaining families versus overall U.S. population
6.Bartik calculations based on observed trends in LFPRs of female heads[6]	1993-96 1996-97 1993-97	348,000 415,000 763,000	Labor force participation rate trends of female household heads with less than college degree compared to other women with less than college degree
7. Bartik calculations based on trends in LFPR of single mothers[7]	1996-97	310,000	Labor force participation trends of single mothers compared with those of other mothers

Notes:

1. Levine (1997) reports that .31 of the change in the natural logarithm of the welfare receipt rate (proportion of population receiving welfare) from 1993-96 can be explained by welfare waivers. I apply these numbers to the welfare caseload of 4.981 million in fiscal year 1993 and 4.553 million in fiscal year 1996. Multiplying the change in the log of the welfare caseload from 1993 to 1996 by .31, and then adding this amount back to the log of the 1996 welfare caseload, and unlogging and subtracting from the 1996 caseload, gives the estimate that state waivers lowered the welfare caseload by 128,000 in 1996. Assume that those removed from welfare rolls by waivers were all single adult or two-adult cases who were not exempt from welfare work requirements (e.g., no child-only cases or single parent cases with the youngest child less than one year old). I use figures from McMurrer, Sawhill and Lerman (1997c) that non-exempt single adult cases are 65.5 percent of the caseload, and non-exempt two-adult cases are 7.3 percent of the caseload. Then the effect on labor supply of 128,000 fewer welfare cases is 59,000=128,000*(.47(65.5/72.8) + .378(7.3/72.8)), where .47 and .378 are assumed changes in labor force participation rates to one parent and two parent cases forced off of welfare. For 1993 to 1998, I assume that during this time period, .31 of the change in the log of the welfare rolls continues to be due to welfare reform policies—this is probably an understatement given the large changes in federal welfare law in 1996, followed by state implementation beginning in 1997. With welfare rolls of only 3.224 million in March 1998, these calculations suggest that welfare reform has reduced welfare rolls from 1993-98 by 628,000, and increased labor supply by 290,000.

2. Blank (1997) calculates that political and program factors from 1990-95 cause the AFDC caseload to decline for the AFDC-basic program, as a proportion of the female population age 15-44, by .008. Her figures for the 1995 female receipt rate of AFDC-basic is .075. Using figures from McMurrer, Sawhill, and Lerman

Table 1 (Continued)

(1997c), the AFDC-basic caseload is .745 of the total caseload. The total caseload in 1995 was 4.876 million. Hence, the change in labor supply from political and program reductions in the AFDC-Basic caseload is 4.876 times .745 times (.008/.075) times .47=.182 million. For the AFDC-UP caseload, Blank calculates a decline from 1990-95 in the log of the caseload, due to political and program factors, of .063. The estimated AFDC-UP caseload in 1995, based on McMurrer, Sawhill, and Lerman, is 4.876 times .073=.356 million. Adding .063 to natural log of .356 million and then unlogging and taking the difference yields an estimate that policy lowered the AFDC-UP caseload by 23,000. Multiplying this by .378 yields effect on labor supply of 9,000. The total effects of policy during the 1990-95 period on labor supply is 182,000 plus 9,000= 191,000.

3. Meyer and Rosenbaum (1998) estimate that changes from 1993-96 in the average state values of welfare benefits, waivers, and JOBS program variables changed the probability of employment for single mothers during a typical week by .0185. Calculations from the Current Population Survey-Outgoing Rotation Group data base indicate that female household heads, ages 16-44,with other relatives in household, and less than 16 years of education, numbered 6.860 million in 1997. Hence, based on Meyer and Rosenbaum's calculations, the increase in employment for this group would be .0185 times 6.860 million=127,000. Data from the March 1997 CPS indicates that this particular group is about 51 percent of the total population of adult welfare recipients (most of the remaining welfare recipients are women who either are older than 44 or who are not household heads). Assuming that welfare reform's effects on labor supply are of proportional magnitude for all welfare recipients, the total effects on the employment rate of the 1993-96 changes in state welfare policies would be 127,000/.51=249,000.

4. Blank (1997) estimates regressions explaining the natural logarithm of AFDC-Basic cases (minus child-only cases), the natural logarithm of AFDC-Basic child only cases, and the natural logarithm of AFDC-UP cases. In each regression she includes as explanatory variables the current state unemployment rate, and two annual lags in the state unemployment rate. To determine how the overall natural log of the caseload would be affected by unemployment, I calculated weighted averages of her unemployment coefficients from these three regressions, where the weights were the proportion of the AFDC caseload in each type of case. (These proportions were taken from McMurrer, Sawhill, and Lerman (1997c), and were .745 for one-adults, .182 for child only cases, and .073 for two-adult cases.) The weighted average coefficients were .010 on current unemployment, .021 on lagged unemployment, and .034 on twice lagged unemployment. I also assumed that with no change in unemployment, caseloads would tend to go up each year at the trend rate of growth of the population of female heads with less than 16 years of education, which was .012036 per year in log terms from 1993 to 1997 according to the CPS-ORG. 1998 unemployment was assumed to be 4.3 percent, and national unemployment for other years was obtained from standard BLS sources. The caseload for years other than 1993 that would be predicted to occur due to changes in unemployment and growth in the female head population, was then given by the equation $\exp(\ln(1993\ \text{AFDC caseload}) + .010(U_t - U_{93}) + .021(U_{t-1} - U_{92}) + .034(U_{t-2} - U_{91}) + .012036(t-1993))$. Calendar year caseloads for years prior to 1997 were approximated as a weighted average of fiscal year caseloads, with a weight of .75 on this fiscal year and .25 on the next fiscal year. The caseload for calendar year 1998 was assumed to be 3.2 million. The difference between the predicted and actual caseload in each year after 1993 was assumed to be due to welfare policy. This difference was multiplied by the proportion of the caseload that was single parents, and the difference in participation rates of single parent ex-recipients from single parent recipients, to get an effect on the number of single parent labor force participants: single parent Ls effect=(predicted-actual caseload) times .745 times .47. The analogous equation for predicting the two-parent labor supply effect is (predicted-actual caseload) times .073 times .378.

5. Mary Daly (1997) estimates that the 1996 welfare reform had by July 1997 increased the labor supply of single women maintaining families by 296,000. This is based on trends in labor force participation rates of this group versus other groups in population. Women are .9099 of adult welfare recipients, based on March CPS data. Assuming that effects of welfare reform are similar for all welfare recipients, the implied effects on total labor supply would be 296,000/.9099=325,000.

6. These calculations are based on trends in labor force participation rates of female heads, ages 16-44, with less than 16 years of education, compared to trends in labor force participation rates of other women, ages 16-64, with less than 16 years of education. The latter group is used as a control, as less than three percent of this group receives welfare. Subtracting the change in labor force participation rate of the latter group from the former group gives a change in labor force participation rates that is plausibly due to welfare reform. For example, over the 1993-97 period, the labor force participation rates for female heads went up from 68.64 percent to 75.70 percent, whereas the labor force participation rate for other less-educated women went up from 65.09 percent to 66.47 percent. Multiplying the difference between these changes by the number of female heads in 1997 (6.86 million) gives 390,000 as an estimate of the number of female heads who entered

Table 1 (Continued)

the labor force due to welfare reform and other changes from 1993-97. But female heads are only 51.07 percent of the overall welfare population, based on March 1997 CPS data. (Even though the other less educated female group has a welfare receipt rate of less than three percent, this group is so much larger than the female head group that it comprises almost 40 percent of all welfare recipients.) Hence, if all welfare recipients have their labor supply affected similarly by welfare reform, the total change in labor supply from 1993-97 would be 763,000 (=390,000/.5107). Similar calculations yield the figures for other time periods.

7. These calculations are based on the Bureau of Labor Statistics publication, "Employment Characteristics of Families in 1997" (U.S. Department of Labor, 1998), which in turn is based on the Current Population Survey for 1997 and 1996. BLS reports that labor force participation rate for mothers with spouse present increased from 70.4 percent to 70.7 percent from 1996 to 1997. Labor force participation rates for single mothers increased from 71.8 percent to 75.0 percent. Assuming that without welfare reform, single mothers' labor force participation would have increased the same as married mothers (0.3 percent), the effect of welfare reform was to increase labor force participation rates for single mothers by 2.9 percent. Applying this increase to the publication's estimates of the number of single mothers in 1997 gives an estimate that welfare reform increased the number of labor force participants among single mothers by 282,000. Assuming that welfare reform had similar proportional effects among all welfare recipients, and noting that women are .9099 of all adult welfare recipients (calculated from March Current Population Survey), the estimated total effect of the 1996-97 welfare reform would be to increase the number of labor force participants by 310,000 (=282,000/.9099).

Table 2. Previous Studies of the Future Effects of the 1996 Welfare Reform Bill on Labor Supply

Study	Time Period	Estimated Effect on Labor Supply	Brief Description of Methodology
McMurrer, Sawhill, and Lerman[1]	1996-2002	no recession: 832,000 recession: 1,699,000	Calculated effects of bill's escalating requirements for percentage of caseload that must be working
Chernick and Reschovsky[2]	1996-2002	1,144,000	Calculated effects on state welfare spending of switching from matching grants under AFDC to block grant fixed in nominal terms under 1996 bill.
Duncan, Harris, and Boisjoly[3]	1996-2005	383,000	Calculated percentage of caseload that will reach 5-year lifetime time limit on welfare receipt within 8 years.

Notes:

1. The figures given in Table 2 are taken directly from spreadsheets provided to me by Daniel McMurrer (McMurrer, Sawhill, and Lerman, 1997c). I greatly appreciate his providing me with these spreadsheets, which clearly documented the exact methodology their study used to derive their labor supply estimates.

2. Chernick and Reschovsky (1996) do projections for California and Kentucky for the effects on the 2002 welfare caseload of the 1996 switch from a matching entitlement program to a fixed block grant, and do alternate projections under assumptions of both small and large fiscal responses by states to the different incentives of a fixed federal welfare block grant. I calculated the average of the small and large responses for California as a percentage of the 1994 California caseload; this average was a reduction of 60 percent in the caseload. (The percentage reduction is very close under small and large responses, and in California versus Kentucky: California's small and large responses were -55 percent and -65 percent, and Kentucky's small and large responses were -54 percent and -59 percent.) I applied this percentage reduction to the total U.S. caseload in 1994 to calculate a U.S. caseload reduction in 2002 of 3.028 million. Assume, following McMurrer, Sawhill, and Lerman (1997c), that 74.5 percent of the caseload is single adult cases, 7.3 percent is two parent families, and 18.2 percent is child-only cases. Further, assume that pushing single parents off of welfare increases their labor force participation rates by .47, and pushing two-parent cases off of welfare increases their labor force participation rate by .378. Then the effects of these different state policies will be to increase the labor supply of single parents pushed off of welfare by (3.028) times .745 times .47=1.060 million. A similar calculation yields an effect on two adult cases of increasing their labor supply by .084 million.

3. Duncan et al (1998) project that 41 percent of the caseload at any point in time will reach a five year time limit on welfare receipt within five years. States under the 1996 welfare bill are allowed to exempt 20 percent of the caseload from the time limit. If the caseload would otherwise stay constant at the fiscal year 1997 level of 3.946 million, and if states exempt the full 20 percent from the time limit, and if future welfare recipients follow the same dynamics of welfare receipt as they did in the past, then .21 times 3.946=.829 million welfare recipients will be kicked off of welfare due to time limits in the period from 5 to 8 years after the time clock "starts ticking." (The clock starts when the state submitted its plan for operating under the new welfare bill, which was 1997 in most states.) Assume that all of those kicked off of welfare due to time limits are adults, and that those kicked off are divided between single parent and two-parent families in proportion to their current representation in the caseload. Then the labor supply effects of the time limits for single parents by 2005-2006 would be .355 million = .829 million times (.745/(.745 +.073)) times .47. A similar calculation implies that the labor supply effects on two adult cases would be .028 million.

Table 3. Baseline scenario, labor supply effects of welfare reform

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Unemployment rate	6.9	6.1	5.6	5.4	4.9	4.3	4.3	4.3	5.2	6.6	7.1	6.6	5.4
Welfare caseload (CY)	4.997	5.004	4.795	4.401	3.766	3.2	2.885	2.693	2.634	2.673	2.826	2.97	2.958
Caseload, pre-93 policy	4.997	5.074	4.923	4.789	4.722	4.669	4.587	4.549	4.646	4.859	5.249	5.602	5.639
Ls, 1-parent, ex-recip.	0	0.025	0.045	0.136	0.335	0.514	0.596	0.65	0.704	0.766	0.848	0.921	0.939
Ls,2-parent, ex-recip	0	0.002	0.004	0.011	0.026	0.041	0.047	0.051	0.056	0.06	0.067	0.073	0.074
Tot Ls due to lower rolls	0	0.027	0.049	0.147	0.361	0.555	0.643	0.701	0.76	0.826	0.915	0.994	1.013
Welfare rolls (FY)	4.981	5.046	4.876	4.553	3.946	3.224	2.964	2.741	2.649	2.663	2.788	2.934	2.961
Extra work req,1-parent					0	0	0	0	0	0	0	0	0
Extra work req,2-parent	0	0	0	0	0.133	0.079	0.073	0.057	0.046	0.043	0.046	0.053	0.06
Ls,1-parent,recipient	0	0	0	0	0.049	0.147	0.227	0.3	0.293	0.298	0.315	0.331	0.329
Ls,2-parent,recipient	0	0	0	0	0.035	0.042	0.048	0.055	0.053	0.054	0.057	0.06	0.06
Tot Ls,recipients	0	0	0	0	0.084	0.189	0.275	0.355	0.346	0.352	0.372	0.391	0.389
Ls,1-parent, all	0	0.025	0.045	0.136	0.384	0.661	0.823	0.95	0.997	1.064	1.163	1.252	1.268
Ls,2-parents,all	0	0.002	0.004	0.011	0.061	0.083	0.095	0.106	0.109	0.114	0.124	0.133	0.134
Tot Ls, recip & ex	0	0.027	0.049	0.147	0.445	0.744	0.918	1.056	1.106	1.178	1.287	1.385	1.402

Table 3 (Continued)

General notes: All caseload and labor supply figures are in millions of persons. First 7 rows show labor supply effects of policy-caused reductions in caseload. Next 3 rows show effects of 96 bill's work requirements. These effects are small, and states are assumed to instead increase work among welfare recipients as shown in next 3 rows, labeled Ls, recipient. Final 3 rows show total labor supply effect among both recipients and ex-recipients. For example, 1.402 effect for 2005 is sum of .389 and 1.013.

Technical notes: Unemployment rate for 1998 is equated to May 1998 rate. Recession in 2001 follows typical pattern of recessions post-1969. Calendar year caseloads calculated pre-1998 as .75(same fiscal year caseload) +.25(next fiscal year caseload). FY1998 caseload assumed to be March 1998 value, and CY1998 caseload assumed to be 3.2 million. Caseloads, pre-1993 policy, calculated (see note 4, table 1) using Blank's coefficients on unemployment and assumed unemployment series, and assumption that ln(caseload) increases at trend rate of growth of female heads. Calendar welfare caseloads post-1998 are assumed to be equal to predicted welfare caseload, minus differential in ln(predicted) - ln(actual) caseloads in 1998 (.2933) , minus additional factor that gradually adjusts to level equal to that of 1998 differential: .2933(1-.7071 to the (t-1998) power), where .7071 is chosen so that predicted factor for 1996 is zero. Labor supply effects for ex-welfare recipients created by welfare reform policy is given for single parents by calculation (predicted caseload-actual caseload) times.745 times .47, where .745 is proportion of caseload that is single parents, and .47 is extra labor supply for single parent off welfare vs. single parent on welfare. Similar equation for two parent families is caseload differential times .073 times .378. Fiscal year caseloads post 1998 equal to .25 previous calendar year's caseload plus .75 this calendar year's caseload. Implications of bill's work requirements calculated by using percentage of caseload required to work under bill (75 percent for 2-parents 1997 and 1998, 90 percent thereafter; 25 percent for all families in 1997, increasing by 5 percent per year to 50 percent in 2002 and subsequent years), applied to non-exempt caseload (.073 of caseload is non-exempt two-parents, .728 is total non-exempt proportion of caseload), and then subtracting two-parent requirement from total requirement to get one-parent requirement. From this, I then subtract assumed baseline proportion of caseload working to determine additional workers. The actual Ls increase of caseload is calculated using assumed percentage working, minus baseline percentage working, for one-parent and two parent caseload. The assumed percentages are 35 percent for two-parents and 15 percent for one parent in 1997, increasing by 5 percent per year until the percentages are 50 percent for two-parents, and 30 percent for one-parents, for all years from 2000 on. The final 3 rows are derived by summing results from rows labeled “Ls,...,ex-recipient” and “Ls,...,recipient.”

Table 4. Labor Supply Effects of Welfare Reform Under Alternative Scenarios, 1993-2005

Scenario	Cumulative Effects on Labor Supply by 2005, Compared to What Would Have Occurred Under Pre-1993 Welfare Regime
Baseline scenario: Half of welfare bill's effects completed by 1998, recession in 2001, some work requirements for welfare recipients, five-year time limits not binding	1,402,000
No additional labor force participation for welfare recipients	1,013,000
No recession through 2005	1,201,000
Only one-third of welfare bill's effects completed by 1998	1,520,000
No future policy reductions in welfare rolls, beyond what was already achieved in 1998	1,179,000
Five-year time limits begin cutting cases from rolls in 2003	1,526,000

Note: These figures represent additional labor force participants in 2005 due to welfare reform, compared to what would have occurred if welfare policy had continued under rules in place as of 1993. See text for rationale and more detail on the different scenarios.

Table 5. State-by-State Figures Comparing the Labor Supply Effects of Welfare Reform With the Size and Growth of the State's Economy

State	Long-Run Effect of Welfare Reform on Labor Supply of Single Parents, As Percent-age of Population of Less-Educated Women	Five-Year Effect of Welfare Reform on Labor Supply of Single Parents, As Percentage of 1992-97 Change in Employment of Less-Educated Women	Does Welfare Reform Have "High Impact" or "Low Impact" on State's Economy?
Alabama	0.9%	16.6%	Low
Alaska	2.2	13.9	
Arkansas	0.9	14.9	Low
Arizona	1.6	7.0	
California	2.5	47.2	High
Colorado	1.3	6.1	Low
Connecticut	2.4	-82.5	High
Delaware	1.5	50.0	High
District of Columbia	5.9	-40.7	High
Florida	1.8	26.3	
Georgia	2.0	15.4	
Hawaii	2.1	34.6	
Idaho	0.8	5.0	Low
Illinois	2.3	124.8	High
Indiana	1.1	14.8	Low
Iowa	1.4	24.6	
Kansas	1.3	-27.7	
Kentucky	1.8	15.9	
Louisiana	1.7	24.1	
Maine	1.9	-98.9	High
Maryland	2.0	104.7	High
Massachusetts	2.0	110.1	High
Michigan	2.2	21.6	
Minnesota	1.6	63.9	
Mississippi	1.8	39.6	
Missouri	1.9	43.2	
Montana	1.5	53.2	
Nebraska	0.9	27.7	
Nevada	0.9	3.6	Low
New Hampshire	1.1	104.6	
New Jersey	1.8	37.0	
New Mexico	2.3	13.1	
New York	2.8	96.2	High

Table 5. Continued.

State	Long-Run Effect of Welfare Reform on Labor Supply of Single Parents, As Percent-age of Population of Less-Educated Women	Five-Year Effect of Welfare Reform on Labor Supply of Single Parents, As Percentage of 1992-97 Change in Employment of Less-Educated Women	Does Welfare Reform Have "High Impact" or "Low Impact" on State's Economy?
North Carolina	1.7	24.6	
North Dakota	1.0	8.0	Low
Ohio	1.9	34.0	
Oklahoma	1.4	21.7	
Oregon	1.2	10.4	Low
Pennsylvania	2.0	-83.0	High
Rhode Island	2.8	-81.5	High
South Carolina	1.1	20.9	
South Dakota	1.0	10.1	Low
Tennessee	1.9	32.8	
Texas	1.4	12.2	
Utah	1.0	5.2	Low
Vermont	2.0	52.2	High
Virginia	1.1	235.4	
Washington	1.9	23.1	
West Virginia	1.8	24.7	
Wisconsin	1.4	17.9	Low
Wyoming	1.1	21.2	
U.S. Total	1.9	29.8	

Notes: Column 2 shows estimated percentage of single parents who in long-run will enter labor force due to welfare reform, as percentage of women, ages 16-64, with less than 16 years of education. Labor force entrants are 1993-2005 cumulative figures in "baseline scenario" (Table 3), allocated across states based on FY 1995 numbers of single parent welfare cases. Denominator is calculated for 1995 from Outgoing Rotation Group tape of Current Population Survey. Column 3 show estimated labor force entrants over 1995-2000 period in state, as percentage of 1992-97 growth in employment of women ages 16-64, with less than 16 years of education. Numerator is derived from baseline scenario, again allocated across states based on single parent welfare recipients. Denominator is calculated from Outgoing Rotation Group of CPS. High impact states are in top 17 states in both measures, with states with "negative" numbers in column 3 counted as in top 17. Low impact states are in bottom 17 states in both measures. Cutoffs for high impact are 1.9 percent for column 2, 47.2 percent for column 3; for low impact, 1.4 percent for column 2, 17.9 percent for column 3.