

EXPLAINING THE DECLINE IN WELFARE RECEIPT, 1993-1996

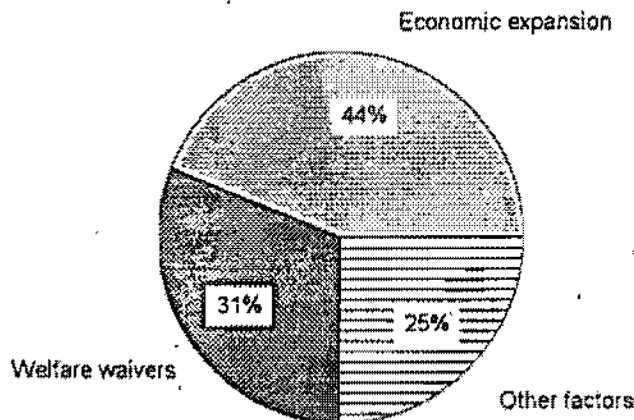
May 9, 1997

A Report by the
Council of Economic Advisers

EXPLAINING THE DECLINE IN WELFARE RECEIPT, 1993-1996¹

During the first four years of the Clinton Administration, from January 1993 to January 1997, the number of individuals receiving welfare fell by 20 percent, or 2.75 million recipients — the largest decline in over 50 years.² Three potential explanations for this decline are (1) economic growth, which created 12 million new jobs over the period, (2) Federal waivers, which allowed 43 states to experiment with innovative ideas to help reduce welfare dependency, and (3) other policies affecting work-related incentives, including the 1990 and 1993 expansions of the Earned Income Tax Credit (EITC) and the recent rise in federal and state spending on child care. It is important to determine the causes of this decline in light of the recently enacted welfare reform legislation. If economic growth was the major contributor, then continued growth seems essential for further progress in moving people from welfare to work. If federal policies played a significant role, however, then continued efforts along these lines are likely to lead to additional reductions. A statistical analysis (described in the companion technical paper to this report) shows that over 40 percent of the decline resulted from a falling unemployment rate associated with the economic expansion and almost one-third from statewide welfare reform waivers (Figure 1).³ Other factors (which might include other policy initiatives, such as the EITC) account for the remainder.

Figure 1
Reasons for the Decline in Welfare Caseloads, 1993-1996



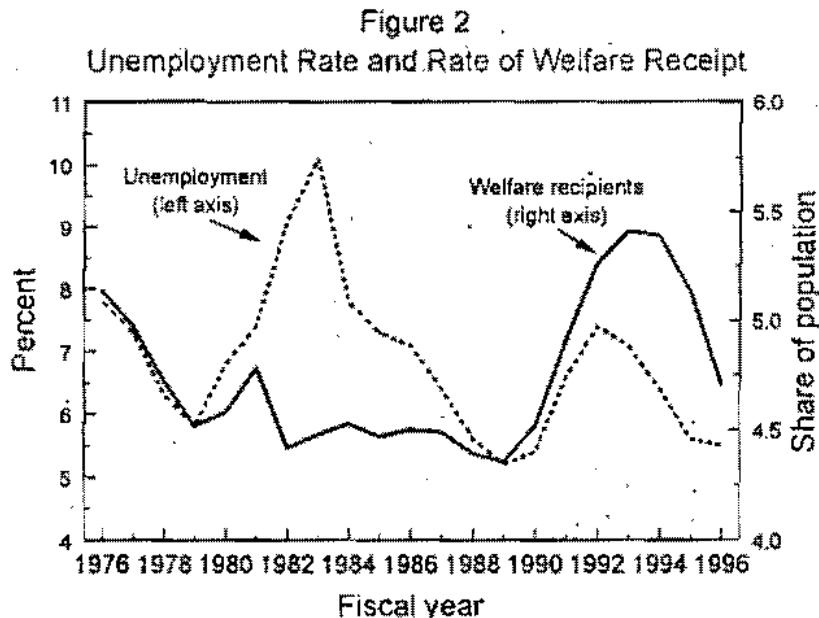
¹We are grateful to the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation for providing technical assistance in preparing this report.

²The statistical analysis presented here uses data on the average monthly share of the population receiving welfare in a fiscal year. Between the 1993 and 1996 fiscal years (October 1, 1992 to September 30, 1996), the average monthly share of the population receiving welfare fell from 5.4 percent to 4.7 percent.

³Eight states received waivers that affected only a small part of the state, typically a few counties. Waivers granted to these states are not included in this analysis.

WELFARE CASELOADS AND THE BUSINESS CYCLE

Welfare caseloads tend to fluctuate over the business cycle, rising when the economy moves into recession and declining once a recovery is underway and the economy is expanding. For example, the proportion of the population receiving welfare fell during the expansion of the late 1970s and rose as the economy went into recession in 1980 (Figure 2).⁴ Between 1989 and 1993, the proportion of the population receiving welfare shot up 25 percent, reaching its highest level ever. The recession of 1990-1991 and the weak labor market through 1992 certainly contributed to this increase, hindering the efforts of those welfare recipients seeking work. One might be tempted to argue that the subsequent decline between 1993 and 1996 simply reflected the normal return to work of welfare recipients who were unable to find jobs when the economy was weak.



The business cycle alone, however, is unlikely to account for the entire decline in welfare reciprocity after 1993. The 1990-1991 recession was relatively mild; the annual unemployment rate peaked at 7.5 percent in 1992, much lower than the peak rates in the 1974-75 and 1981-82 recessions. It seems improbable that a moderate recession would lead to such severe swings in the rate of welfare receipt. Moreover, some states with large reductions in their unemployment rate during this period did not experience big drops in their welfare caseload, while other states saw a big drop in welfare receipt even though their unemployment decline was moderate (see attached map). For that reason it is important to look at other factors, including the possible impact of changes in welfare programs during that time.

⁴Two anomalous episodes occurred as well. First, welfare reciprocity declined sharply in 1982 despite a worsening economy. This was because policy changes enacted in the Omnibus Budget Reconciliation Act of 1981 substantially reduced welfare eligibility. Second, the dramatic swing in welfare reciprocity between 1989 and 1996 was larger than might have been expected based on the relatively mild 1990-91 recession.

FEDERAL WELFARE WAIVERS

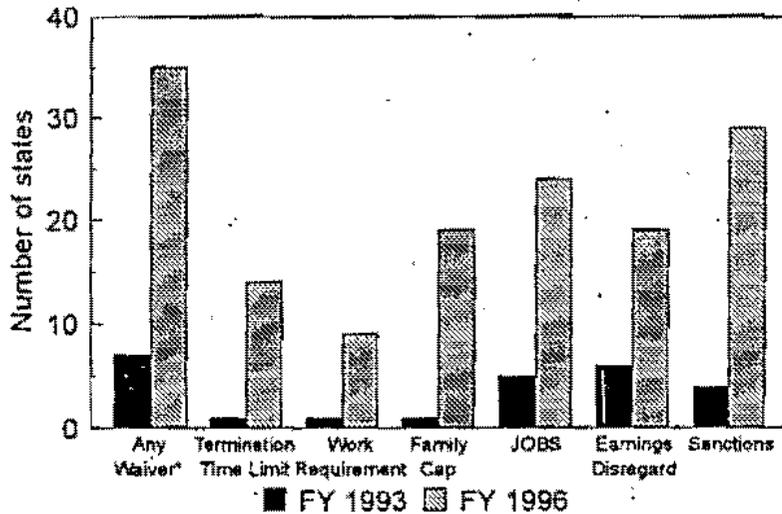
Aid to Families with Dependent Children (AFDC) was the Nation's primary welfare program until last year. The AFDC program was administered by the states, subject to Federal requirements. Since 1962, the Secretary of Health and Human Services has had the authority to waive some of these requirements if states proposed experimental or pilot programmatic changes that furthered the goals of the AFDC program. The Bush Administration was the first to use this authority extensively, especially in its final year. But the Clinton Administration expanded the number of waivers dramatically after 1993, granting waivers to a total of 43 states.

Waivers granted to states to implement experimental welfare policies generally contained a number of provisions that varied greatly in scope. Some were pilot programs that could not have had much effect on the size of a state's overall welfare caseload. Others covered a larger share of the state's welfare population but included some relatively minor provisions that probably had little effect on the number of welfare recipients statewide. Six broad categories of waivers that potentially might have had an observable effect in reducing state welfare caseloads are:

- **Termination time limits.** States receiving this type of waiver are allowed to limit the length of time recipients can collect benefits. Once that limit is reached, benefits are terminated.
- **Work-requirement time limits.** These waivers are similar to termination time limits, but once the limit is reached, recipients are required to accept work or enter a training program in exchange for their benefits.
- **Reduced JOBS exemptions.** The Job Opportunities and Basic Skills (JOBS) training program, enacted in 1988, required a share of the welfare caseload to participate in work and/or training programs. Waivers were granted to some states to reduce the number of recipients who were exempt from participating in the program.
- **Increased JOBS sanctions.** Some states argued that sanctions for recipients who refused to participate in JOBS were inadequate and requested the ability to strengthen those sanctions—including termination of benefits in some cases.
- **Family cap.** Welfare benefits are scaled to family size and normally increase when a recipient has an additional child. Some states requested waivers to eliminate the additional benefit for women who had a child while receiving welfare.
- **Increased earnings disregard.** For many recipients, a dollar in earnings led to almost a dollar reduction in their welfare benefit, providing a disincentive to work. Some states requested waivers to increase the amount of earnings that welfare recipients could keep.

The number of states with statewide waivers of these types rose dramatically between 1993 and 1996 (Figure 3). Some states that experienced large drops in welfare receipt are also states that received waivers (see attached map).

Figure 3
Number of Approved Statewide Waivers



* 43 states have received waivers under the Clinton Administration, but not all are statewide.

THE STATISTICAL ANALYSIS

Several factors besides economic conditions and waivers are likely to affect the rate of welfare receipt. An increase in female-headed families will tend to increase this rate because the welfare system strongly favors single mothers with children. The generosity of welfare benefits also may affect the number of poor individuals who seek benefits. Labor market returns for less-skilled workers, national changes in welfare policy, and cultural attitudes towards welfare receipt, also may play a role. The task of a statistical analysis is to disentangle the separate effects of these factors in order to identify the relationship between each of them and welfare receipt.

The exercise reported here uses state-level data from 1976 through 1996 to estimate the contributions of economic growth (measured by the change in the unemployment rate) and approved state waivers to the recent decline in welfare receipt. The use of state level data allows us to control for changes that affect welfare receipt across the entire country at a point in time, such as national

changes in welfare policy.⁵ The relationship between, say, economic conditions and the rate of welfare receipt can still be identified because recessions tend to be worse in some parts of the country than in others and could lead to differences across states in patterns of welfare receipt. Using data over several years allows us to control for long-run differences in welfare receipt that exist across states. The relationship between waivers and welfare receipt, for example, can be observed by following changes in welfare receipt within a state before and after the waiver. Using techniques like these, a statistical analysis can estimate the effects of economic activity and waivers on the size of the welfare rolls holding other things that affect welfare receipt constant.⁶

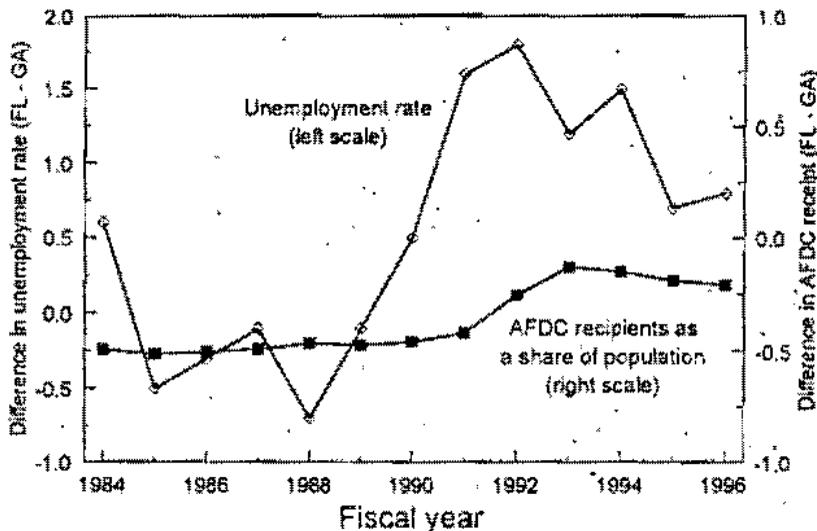
An Example

Figure 4 presents a comparison of Florida and Georgia that is intended to provide some intuition for the statistical methodology and the manner in which the effects of economic activity are estimated separately from other potential confounding factors. It should not be considered a rigorous test. The figure plots the difference between the two states in unemployment rates between 1984 and 1996 and in the share of the population receiving AFDC over the same period. Taking the difference between the two states in each year controls for any differences that affect both states simultaneously. Because neither state received a waiver until late in the 1996 fiscal year, the difference in trends through virtually all of this time period are unaffected by differences in waiver provisions or their effectiveness. Throughout most of the expansion of the middle to late 1980s, unemployment in Georgia had been somewhat higher than in Florida. When the 1990-91 recession hit, unemployment in Florida rose considerably relative to that in Georgia, and the difference has been slow to recede. Subsequently, AFDC receipt shows an increase in Florida relative to Georgia. The full statistical analysis uses this sort of approach to identify the effects of both waivers and economic activity on the rate of welfare receipt in all states over time.

⁵Although the effects of changes in national welfare policy cannot be determined using this methodology, some recent policies may have contributed to the decline. The 1993 increase in the Earned Income Tax Credit increased the returns to work. Increases in child care subsidies made it easier for parents to work. Enhanced efforts to collect more child support raised the incomes of some mothers, reducing their reliance on welfare. The impact of these policies on the rate of welfare receipt cannot be identified separately in this analysis because they apply equally in all states at any time; it is incorporated into the effect of other, unidentified factors.

⁶This methodology does include some limitations that may preclude a "causal" interpretation of the estimated relationship between, say, waivers and the rate of welfare receipt. First, if factors like out-of-wedlock birth rates suddenly fell in waiver states at precisely the time that their waivers were approved, a negative estimated relationship between waivers and the rate of welfare receipt would be misleading. Second, it is possible that the estimated effect of waivers on AFDC receipt may be capturing the tendency for states with shrinking welfare rolls to be the ones most willing to experiment with the sort of waiver policies examined here.

Figure 4
A Comparison of Florida and Georgia



The Timing of the Welfare Caseload Response

A number of other tests were conducted to explore more complicated relationships between economic activity, waivers, and the welfare caseload, particularly the possibility that impacts on the rate of welfare receipt might not be contemporaneous with changes in unemployment or implementation of waivers:

- **Delayed responses.** Changes in unemployment may affect the welfare caseload only after a delay. For instance, the onset of a recession may lead those low-income workers who lose their jobs to spend some time looking for a new one while drawing down their limited assets before applying for welfare. When a recession ends, these typically less-skilled workers may be the last ones hired.
- **Advance responses.** Waiver policies may have some effect on the welfare caseload even before the waiver is actually approved. This effect could occur if publicity regarding the new proposed policies led potential welfare recipients to seek work more intensively than they might have otherwise or because they chose not to apply for benefits, perhaps concerned that they would be treated more harshly by welfare officials.

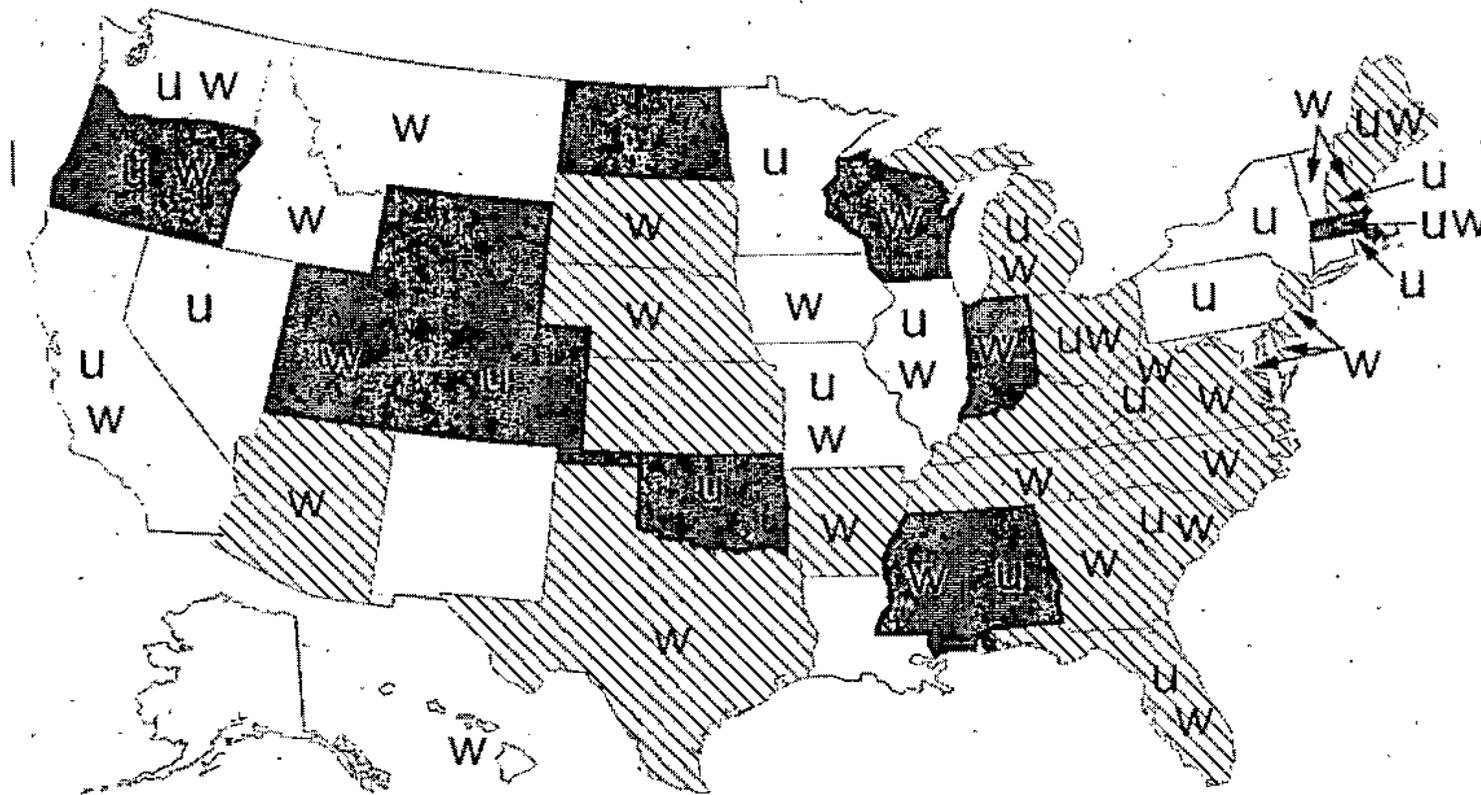
RESULTS

The results of this analysis indicate a strong relationship between the welfare caseload and both economic activity and Federal welfare waivers.

- Changes in the welfare caseload do appear to respond to changes in the unemployment rate with a delay.
- States that instituted a major, statewide waiver did experience a decline in the welfare caseload in advance of the actual waiver approval.
- Waivers that included strengthened JOBS sanctions were related to a decline in the rate of welfare receipt that did not precede the waiver approval.
- Overall, over 40 percent of the decline in welfare receipt between 1993 and 1996 can be attributed to economic growth, almost one-third was related to federal welfare waivers, and the remainder was due to other, unidentified factors.

These findings say nothing about the outcomes for those individuals who otherwise would have collected benefits had waivers not been granted. Additional research that can determine how individuals fared under the alternative waiver provisions, rather than an aggregate analysis examining the statewide caseload, clearly is desirable to help address this issue.

Reduction in Welfare Recipients and Unemployment Rate 1993 to 1996



Reduction in welfare recipients
(share of population):

-  Over 25 percent
-  15 - 25 percent
-  Less than 15 percent

U 1.6 percentage points or more
reduction in unemployment rate
(larger than national average)

W Major statewide waiver approved

TECHNICAL REPORT:

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During the first 4 years of the Clinton Administration, from January 1993 to January of 1997, the number of individuals receiving welfare benefits fell by 20 percent, or 2.75 million recipients — the largest decline in over 50 years.² Three potential factors that may have contributed to the dramatic decline in the welfare rolls over the period are economic growth, federal welfare waivers, and other policies affecting work-related incentives. First, the recession of 1990-1991 may have hindered the efforts of welfare recipients who were seeking work; as the labor market subsequently became more robust, creating almost 12 million new jobs from January 1993 to January 1997, these individuals may have found jobs more easily and left the welfare rolls. Second, over this period federal waivers granted to states to experiment with innovative approaches to ending welfare dependence may have also played a role. The Clinton Administration granted waivers to 43 states between 1993 and 1996 that included provisions which may require work and/or training, sanctions for those who do not comply with these requirements, and limits on the duration of benefit receipt, among other things. Third, other policies like the 1990 and 1993 expansions of the Earned Income Tax Credit (EITC) and the recent rise in federal and state spending on child care made it easier to enter the labor market and increased the rewards to work for individuals that might have otherwise chosen welfare.

¹We are grateful to the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation for providing technical assistance in preparing this report.

²The statistical analysis presented here uses data on the average monthly share of the population receiving welfare in a fiscal year. Between the 1993 and 1996 fiscal years (October 1, 1992 to September 30, 1996), the average monthly share of the population receiving welfare fell from 5.4 percent to 4.7 percent.

It is particularly important to determine the causes of this decline in light of recently enacted welfare reform legislation that completely overhauls the system of providing aid to the poor. If economic growth was the major contributor to the decline, then continued growth is essential for further progress in moving people from welfare to work. On the other hand, if federal policies played a significant role, then continued efforts along these lines are likely to lead to additional reductions.

This paper will examine the recent decline in receipt of welfare benefits and provide estimates of the contribution made by economic growth and one particular federal policy, welfare waivers. State-level data from 1976-1996 are used in the analysis. The statistical methodology employed controls for differences in the rate of welfare receipt across states that are roughly constant over time, differences over time that are constant across states, and trends over time that may differ between states. This approach allows us to isolate the effects of economic growth and waivers on welfare receipt assuming that none of these other factors had changed. The results indicate that over 40 percent of the decline can be attributed to economic growth and that almost one-third is related to waivers, particularly those that sanction recipients who do not comply with work requirements. Other factors, which might include additional policy initiatives (like the EITC), account for the remainder.

WELFARE RECEIPT AND THE BUSINESS CYCLE

Figure 1 displays the trend in the unemployment rate and the share of the population receiving welfare benefits between 1976 and 1996. The expansion of the late 1970s is reflected in a declining share of the population receiving welfare over that period. As the economy fell into a recession in

1980-81, welfare rolls began to increase. However, the massive recession of 1981-82 actually coincided with a decline in the rate of welfare reciprocity. The explanation for this paradox is the Omnibus Budget Reconciliation Act of 1981 (OBRA 1981), which reduced AFDC eligibility at exactly the time when one might have expected to see a large increase in AFDC receipt. The extended recovery of 1983-1989 apparently had little effect on the welfare rolls, perhaps because those who otherwise would have entered the welfare rolls were prevented from doing so in that recession.

The recession of 1990-91 had a dramatic impact on the rate of welfare receipt; the share of the population receiving welfare rose 25 percent between 1989 and 1993 to its highest level ever. Given the large increase during that recession, the decline in the rate of benefit receipt between 1993 and 1996 might have reflected a return to work of welfare recipients who were unable to find jobs during bad times. But the 1990-91 recession was relatively mild, with a peak unemployment rate of 7.8 percent in June 1992, much lower than the peak rates in the 1974-75 and 1981-82 recessions. It seems improbable that a moderate recession would lead to such severe swings in the rate of welfare receipt.

Moreover, geographic variation in changes in the unemployment rate and the rate of welfare reciprocity indicates that factors other than economic growth also contributed to the fall in the rolls. Figure 2 displays the change in the share of the population receiving AFDC and the change in the unemployment rate in each state between 1993 and 1996. The correlation between changes in unemployment and welfare receipt is not perfect. For instance, between fiscal years 1993 and 1996, the unemployment rate in Pennsylvania fell by more than the national average of 1.6 percent, yet the decline in the share of the state's population receiving welfare was smaller

than the average. Virginia, by contrast, experienced almost a 20 percent drop in welfare receipt over the period even though it experienced a below average decline in its unemployment rate.

OTHER FACTORS THAT AFFECT WELFARE RECEIPT

Factors besides economic conditions might be related to the rate of welfare receipt and could explain recent trends. These factors include federal waivers awarded to states to introduce new welfare policies, other changes in federal policy that alter the environment for low-income households, and changes in demographic composition that may alter the share of the population eligible for welfare.

WAIVERS

The most recent policy change directly linked to welfare receipt, and the focus of much of the remainder of this analysis, is the substantial increase in federal waivers granted to states to implement new and innovative welfare policies. The AFDC program was administered by States, but was subject to federal requirements. Since 1962, the Secretary of Health and Human Services had the ability to waive some of these requirements for states proposing experimental or pilot programmatic changes that furthered the goals of the AFDC system. The Reagan Administration made some use of this authority, granting a limited number of waivers that either affected a very small share of a state's caseload or were superseded by national legislative changes.³ The Bush Administration granted more waivers, affecting larger numbers of individuals

³Because of this, the analysis that follows only examines the effect of waivers approved during the Bush and Clinton Administrations.

within a state, particularly in its last year or so. Since 1993, however, the Clinton Administration has used waiver authority extensively allowing 43 states to experiment in some way with their welfare programs.

This analysis examines the effects of implementing six important waiver provisions in most, if not all, of a state (major, state-wide waivers). Waivers that only applied to pilot sites, such as a few counties, are not examined here because the magnitude of any effect on the state's caseload will be too small to detect.⁴ Many state waivers also include a multitude of provisions that affect few individuals and are unlikely to have a substantial impact on the overall rate of welfare receipt in the state. Thus, we focus on the following six types of waivers: termination and work-requirement time limits, reduced JOBS (Job Opportunities and Basic Skills) exemptions, increased JOBS sanctions, family caps, and increased earnings disregards. The data appendix describes each type of waiver and identifies the dates that each statewide waiver was approved.

Figure 3 displays the number of major, statewide waivers in effect in fiscal 1993 and 1996. By the end of the 1993 fiscal year, seven such waivers had been approved; the most common form was an increase in the earnings disregard. If this type of waiver has any effect on the welfare rolls in the short-run, it would increase welfare reciprocity because it increases the number of low-earnings workers eligible for benefits. By fiscal 1996, however, 35 states were granted major, statewide waivers.⁵ Sanctions imposed upon workers who did not live up to their work or job search requirements are the most common. Because these and most of the other types of major waivers

⁴Results of preliminary analysis indicated that pilot programs had no discernible effect on the size of a state's welfare rolls.

⁵Since 1993, 43 states have received waivers, but some of them applied to a small share of the state.

would be predicted to reduce the likelihood of benefit receipt, their expansion over the 1993-1996 period may have helped reduce the welfare rolls beyond that brought about by economic growth.⁶

The map in Figure 2 also shows the states that have implemented major, statewide waivers. Some states that have experienced large drops in their welfare rolls without large drops in unemployment, like Virginia, have also received waivers. In contrast, other states in which unemployment has fallen considerably, but in which large drops in welfare rolls have not occurred, like Pennsylvania, have not received any major statewide waiver. A systematic analysis that separately identifies the effects of waivers and economic conditions is reported below.

OTHER WORK-RELATED INCENTIVES

Several other federal policies introduced over the past several years also may have contributed to changes in the rate of welfare receipt. For instance, the EITC was significantly expanded in 1990 and 1993. This tax credit, available to low-wage workers, increased from 14 percent in 1990 to 40 percent in 1996 and may have made work a better alternative than welfare, leading to a decline in the welfare rolls. Since 1993, enhanced efforts to collect more child support raised the incomes of some mothers, and may have reduced their reliance on welfare. Additional state and Federal spending on day care may have also made it easier for single mothers to work.

Changes in Medicaid eligibility over the past decade or so also may have affected the size of the welfare rolls. Since 1986 the link between AFDC and Medicaid eligibility has been broken, and over time the number of poor children eligible for Medicaid has risen dramatically. The fact

⁶Moffitt (1996) has argued that the JOBS program (and, by implication, an extension of the JOBS program) may provide incentives for some to participate in welfare programs so that they can receive the potential benefits of these policies and could lead to an increase in the caseload.

that some low-income individuals can now work without losing Medicaid benefits for their children may reduce the rate of welfare receipt.⁷ In fact, Yelowitz (1996) finds that changes in Medicaid eligibility through 1991 led to a moderate reduction. Although eligibility has continued to expand since then, the expansions have been smaller than those that took place in the late 1980s and are unlikely to account for a substantial share of the reduction in welfare receipt.⁸

DEMOGRAPHIC CHANGE

The AFDC program was largely targeted to single mothers with children and this demographic group has grown over time. The share of families headed by women rose from 10 percent to 18 percent between 1970 and 1995, which fully explains the increase in child poverty over the period. Out-of-wedlock birth rates have also been on the rise. The relationship between these factors and AFDC eligibility suggests that the welfare rolls should have increased over time. In fact, Gabe (1992) argues that the growth in never-married female-headed families was largely responsible for the increase in welfare caseloads between 1987 and 1991. These factors actually suggest that we should have expected to see a continued expansion in the rate of welfare receipt; the observed decline between 1993 and 1996 means that other offsetting factors were more important in determining recent trends.

⁷It is also possible that expanded Medicaid eligibility may have increased AFDC participation. As more people come into contact with the social welfare system through Medicaid, they may find that they are eligible for AFDC benefits as well.

⁸This analysis does control for some of the recent changes in Medicaid eligibility that have occurred at the national level even though their effects cannot be separately identified from other factors that affect all states in a given year.

DATA AND DESCRIPTIVE STATISTICS

This analysis employs state-level data between the 1976 and 1996 fiscal years. Descriptive statistics for 1993 and 1996 are reported in Table 1, separately for those states with and without approved waivers.⁹ Columns 1 and 2 indicate that the share of the population receiving AFDC in "nonwaiver states" fell 0.6 percentage points, from 5.3 to 4.7 percent. The fall in AFDC reciprocity was larger in "waiver states"; the share fell 0.8 percentage points, from 5.5 to 4.7 percent in these states.¹⁰ The unemployment rate in the two sets of states is virtually identical in these years, indicating that the larger fall in the welfare rolls in waiver states cannot be attributed to better economic conditions.¹¹ Although AFDC benefits are more generous in nonwaiver states, real benefits have declined at roughly the same rate in both sets of states over the time span.

Other factors besides unemployment and benefit generosity may be related to differences in the relative size of the welfare rolls across states. In particular, the categorical nature of the AFDC

⁹All AFDC recipients are counted here, including those in two-parent families who receive AFDC-UP. Those in the latter category are probably more responsive to business cycle conditions because constraints facing single-parents, like finding affordable day care for their children while they work, are smaller in two-parent families. Therefore, they are more able to work when jobs are available. Still, AFDC-UP families represent a very small part of the total AFDC caseload and including them in this analysis should have minimal effects on the estimated parameters.

¹⁰The difference in the average reduction across waiver and nonwaiver states is not statistically significant. The power of this test, however, is very weak in that waiver states may have had a waiver in effect for a very small part of this three year period. In addition, the normal variation across states in the share of the population receiving welfare swamps any variation across the groups of states over time. The regression analysis reported below adjusts for these problems and results from model specifications that mimic this simple "difference-in-difference" test statistic indicate that the reduction in waiver states is significantly larger than that in nonwaiver states.

¹¹This analysis uses the unemployment rate in each state and fiscal year. Because state level unemployment data have only been available since 1976, the 1976 fiscal year unemployment rate is measured just for the last three quarters (January through September) of that fiscal year. Other measures of unemployment may be more appropriate for this analysis. For instance, a measure of unemployment for younger women may better represent the labor market opportunities of potential welfare recipients. This measure may be somewhat endogenous, however, because changes that affect the labor supply of welfare recipients will to some extent, also affect the unemployment rate of younger women. Therefore, one might want to use the prime-age male unemployment rate because it does not suffer from this sort of endogeneity. Unfortunately, neither of these alternative measures is available on a state/year basis.

program that mainly provided benefits to low-income unmarried mothers and their children suggests that the extent of poverty and the share of households headed by women may also matter. Unfortunately, obtaining reliable estimates of these measures by state is hampered by small sample sizes in the main source of household data, the Current Population Survey. Research concerned with trends across states in variables such as these generally rely on Census data that are only available every 10 years.

The lower block of Table 1 presents poverty rates and the share of households headed by women from the 1980 and 1990 Censuses by waiver status in 1996. These statistics can highlight whether any long-term trends across states could influence a statistical analysis of welfare receipt. In both types of states, both measures have been increasing over time, but increases were larger in nonwaiver states. For instance, the share of female-headed households increased by 2.0 and 2.5 percentage points in waiver states and nonwaiver states, respectively. If these differential trends continued through the 1990s, then one would expect the welfare rolls to fall in waiver states relative to nonwaiver states because a smaller relative share of the population would be categorically eligible for benefits. These trends would bias an analysis of the effects of waivers on welfare receipt towards the finding that waivers matter. Controls for these trends were included in the statistical analysis to help remove this form of bias (as discussed below).

METHODOLOGY

The statistical approach employed in this analysis is designed to estimate the effects of economic conditions and federal waiver policy on the size of the welfare rolls, holding other factors that may affect the rate of welfare receipt constant. To that end, we estimated multivariate

models of the natural log of the share of the population receiving welfare in a state/year.¹²

Specifically, we estimate OLS regression models of the following form:¹³

$$\ln R_{st} = U_{st} \beta_1 + W_{st} \beta_2 + \ln B_{st} \beta_3 + \gamma_s + \gamma_t + \epsilon_{st} \quad (1)$$

$$\ln R_{st} = U_{st} \beta_1 + W_{st} \beta_2 + \ln B_{st} \beta_3 + \gamma_s + \gamma_t + \text{trend} * \gamma_t + \epsilon_{st} \quad (2)$$

where R represents the share of the population receiving AFDC, U is the unemployment rate, W is an indicator variable for welfare waiver status, B represents real maximum AFDC benefits in 1996 dollars for a three-person family, s indexes states, t indexes time, γ_s and γ_t represent state and year fixed effects, and ϵ represents a residual. Year fixed effects capture time-varying factors that affect all states in a given year. Such factors might include changes in welfare policy (like OBRA 1981), other changes in policies targeted to low-income individuals (like the Earned Income Tax Credit), or changes in national attitudes regarding welfare receipt that may have been linked to the welfare reform debate.¹⁴ This approach incorporates the contribution of factors like these, although we cannot specifically identify the effects of each one on the rate of welfare receipt. Similarly, state fixed effects control for time-invariant differences across states, such as

¹²Another measure of welfare receipt that could be used as the dependent variable for this analysis is the number of families, or cases, receiving benefits. Patterns in the welfare caseload over time may differ across states as the number of child-only cases has proliferated at differential rates. All of the models reported below have also been estimated using the log of the welfare caseload as the dependent variable and mainly find similar results. The main difference is that JOBS sanctions apparently have a larger effect on recipients than on cases. This is consistent with the fact that many of these waivers only sanction the parent and maintain benefits for the children so that the case remains open even though the number of recipients fell.

¹³These regressions are weighted by the state population in each year to yield parameter estimates that are representative of the entire country.

¹⁴Previous studies of the welfare caseload that use national time series data (CBO, 1993) have difficulty controlling for this type of pattern in the data. The results presented in Moffitt (1987) imply that it is important to control for such "structural shifts."

differences in industrial composition that may affect less-skilled workers or attitudes towards welfare recipients.

As shown earlier, it is also possible that changes may be occurring over time in otherwise unmeasured factors that differ across states, particularly demographic characteristics like the share of female-headed households. Unfortunately, published data on detailed demographic characteristics such as these are unavailable at the state level each year. Such differences could be fully accounted for by including the interaction of state and year fixed effects, but a model including these interactions is under-identified. As an alternative, we include a state-specific time trend. If the rate of increase in, say, female-headed households in a state is constant, this approach will control for these changes and provide an unbiased estimate of the effects of waivers and economic conditions on the welfare rolls.¹⁵ The effects of such changes, however, cannot be separately identified.

Figure 4 presents a comparison of Florida and Georgia that is intended to provide some intuition for the statistical methodology and the manner in which the effects of economic activity are estimated separately from other potential confounding factors. It should not be considered a rigorous test. The figure plots the difference between the two states in unemployment rates between 1984 and 1996 and in the share of the population receiving AFDC over the same period. Taking the difference between the two states in each year controls for any differences that affect

¹⁵If differences across states over time are nonlinear they will not be captured by these trends and, if these differences are correlated with waiver awards, the estimated effect of waivers on the rate of welfare receipt will be biased. Although few candidates for such changes are readily apparent, one possibility may be the growth in income inequality since the late 1970s, documented in the Economic Report of the President (1997). Blank and Card (1993) show that the rate of growth in inequality has not been constant and has varied across regions of the country; if these differences occur across states and are correlated with waiver policies they may introduce a bias in the results reported here. Future research should investigate this possibility in more detail.

both states simultaneously. Because neither state received a waiver until late in the 1996 fiscal year, the difference in trends through virtually all of this time period are unaffected by differences in waiver provisions or their effectiveness.

Throughout most of the expansion of the middle to late 1980s, unemployment in Georgia had been somewhat higher than in Florida. Over this period, a steady difference in the rate of AFDC reciprocity is also apparent. This difference may be attributed to differences in the two states' welfare systems that do not change over time, attitudes towards welfare receipt and the like that are controlled for in the analysis conducted here. When the 1990-91 recession hit, unemployment in Florida rose considerably relative to that in Georgia, and the difference has been slow to recede. Subsequently, AFDC receipt shows an increase in Florida relative to Georgia. It is important to note that a delay in this response is apparent as Florida's AFDC caseload did not begin to rise relative to Georgia's until 1991 or 1992. This timing of the response in the rate of AFDC receipt to changes in unemployment (and waivers) will be examined more carefully in the empirical analysis below.

RESULTS

Table 2 presents estimates from different statistical specifications based on the regression models represented by equations (1) and (2). In column 1, the model does not include state-specific linear time trends and provides a baseline set of estimates to identify the effect of including these trends. In this model, the unemployment rate is shown to have a substantial effect on the rate of welfare receipt; a one percentage point increase in the unemployment rate increases

the rate of welfare receipt by almost 5 percent.¹⁶ States that were granted any major, statewide waiver had almost a 10 percent fall in the share of the population receiving welfare, based on estimates in this model. Finally, benefit generosity is shown to be significantly positively related to AFDC receipt; the share of the population receiving benefits increases by 3.2 percent for every 10 percent increase in maximum monthly benefit payments.

Column 2 presents estimates of the same specification except that state-specific linear trends are included. Omitting these trends will introduce bias if they are correlated with the rate of welfare reciprocity and any of the other explanatory variables. Estimates presented here indicate that these conditions are present. As illustrated in Table 1, trends in factors like female-headed households and poverty rates across states are correlated with waiver status, and ignoring these trends biases the estimated effect of waivers upwards. The estimated effect of introducing a major, statewide waiver falls from 9.4 percent in column 1 to 5.8 percent in column 2. The estimated responsiveness of welfare receipt to unemployment is also smaller in this specification.

One surprising finding in this specification is that more generous benefits are estimated to reduce the welfare rolls, although this effect is not significantly different from zero.¹⁷ This finding is counterintuitive and is the result of the statistical procedure that has absorbed a significant share of the variability in the data. In a model with state and year fixed effects and state-specific linear trends, the only type of variation that can provide statistical identification are

¹⁶Additional measures of cyclical activity besides the unemployment rate may have a significant effect on welfare receipt. Preliminary estimates using the rate of employment growth within states over time, however, added no additional explanatory power in models that also included lags of the unemployment rate.

¹⁷It is possible that this result is driven by a sort of policy endogeneity where sharp changes cuts in benefit levels occur in response to swelling welfare rolls, providing a negative relationship between these variables. Benefit cuts in California in the early 1990s that occurred as caseloads were rising in that state may be an example of this endogeneity.

those resulting from sharp changes within a state over time in the respective variables. Changes like this are exactly what are observed in variables like unemployment and, particularly, in indicator variables like those representing waiver status. AFDC benefits generally exhibit little of this sort of behavior; typically benefit increases are small and benefit cuts largely occur as inflation slowly erodes the purchasing power of the benefit. Therefore, with little variation left to identify the effect of changes in AFDC benefits, the estimated effect becomes less robust. This becomes clear in the subsequent model specifications reported in this table where an increase in AFDC benefits is estimated to increase welfare receipt, although some of these effects are only marginally statistically significant. In essence, these results indicate that the methodology employed here is not a particularly powerful one to determine the effects of the generosity of AFDC benefits on the level of welfare receipt.

Estimates in column 3 are obtained from a model that includes a one-year lagged measure of the unemployment rate within a state, providing a more flexible specification of the timing of the response in welfare receipt to economic conditions. Lagged unemployment may be related to welfare receipt if, for instance, the onset of a recession leads those low-income workers who lose their jobs to spend some time looking for a new one while drawing down their limited assets before applying for welfare. As a recession ends, these typically less-skilled workers may be the last ones hired. Evidence appears to support this intuition, as lagged unemployment is strongly related to the share of the population receiving welfare. To interpret these findings, consider a 1 percentage point increase in the unemployment rate that lasts for two years. In the second year, the share of the population receiving welfare will be 4 percent larger (because the coefficients on

the two unemployment measures are summed). States awarded a major statewide waiver are estimated to experience a 5.2 percent decline in welfare reciprocity in this model.

So far, waivers have been aggregated into a simple indicator variable that measures whether any waiver had been approved. Column 4 presents estimates of the effects of each of the six major types of waivers studied in this analysis on the rate of welfare receipt. In this model, the only type of waiver that significantly affects the extent of welfare receipt is JOBS sanctions.¹⁸ This type of waiver is estimated to reduce the share of the population receiving welfare benefits by almost 10 percent.¹⁹ Disaggregation of the waiver categories did not substantially change the estimated impact of an increase in unemployment.

One potential shortcoming of the model presented in column 4 is that many waivers include several of the different types all at once, limiting the ability of the statistical analysis to separately identify their effects. Column 5 presents estimates of a more parsimonious model that includes whether the state received any major statewide waiver and whether that waiver included JOBS sanctions. In this specification as well, no other type of waiver is shown to have a significant effect on welfare receipt besides JOBS sanctions. Again, the responsiveness of the welfare rolls to the business cycle is relatively unaffected by the changes in waiver specification. The analysis reported so far has restricted the effect of waivers to be observed no sooner than the time the waiver was approved. This restriction does not allow for the possibility that the waiver application process, the publicity surrounding it, and potential changes in case workers' behavior and attitudes may

¹⁸This finding is consistent with Pavetti and Duke (1995).

¹⁹Termination time limit waivers are also estimated to reduce the rate of welfare receipt, but the estimated effect is only statistically significant at the 10 percent level.

provide a signal to potential recipients that the environment in which the welfare system operates is about to change. It may lead some individuals contemplating applying for benefits to find other sources of income support, whether from work or elsewhere. This possibility is considered in column 6, where the presence of any statewide waiver and those including a sanction provision are included in the model at the time the waiver was approved and, in separate variables, a year before the waiver was approved (a "lead").

Estimates of models including leads of the waiver measures are reported in Column 6 of Table 2. The "threat effect" of applying for a waiver does appear to reduce the number of individuals who receive benefits the year before the waiver is approved; the share of the population receiving welfare is estimated to fall by 6.3 percent in that year. In the following year no additional reduction is observed. On the other hand, the effect of waivers that include JOBS sanctions is not observed until the year such a waiver is approved.

One alternative to a causal interpretation of these findings is that those states which implemented waivers were among the ones that experienced the most dramatic run-up in their welfare rolls in the late 1980s and early 1990s. This trend may have inspired the waiver request and mean reversion may be responsible for the subsequent decline in the rate of welfare receipt relative to other states. Tests of this hypothesis, however, indicate that waiver states did not experience a larger-than-average increase in their welfare rolls between 1989 and 1993. In fact, little relationship across states is apparent between the 1989-1993 increase and the 1993-96 decline.

The results reported in Table 2 can be used to estimate the share of the reduction in welfare receipt between 1993 and 1996 that can be attributed to economic growth and federal welfare waivers granted to states. The product of the estimated parameters for, say, unemployment and its

lag and the respective changes in unemployment in each state between 1993 and 1996 provides an estimate of the predicted change in welfare reciprocity over the period based solely on changes in unemployment. The ratio of the predicted change to the actual change indicates the share of the reduction attributed to unemployment. An analogous exercise can be conducted to estimate the extent to which waivers contributed to the decline in the welfare rolls. Other unidentified factors would be responsible for the difference remaining after accounting for these two effects.²⁰

Table 3 presents the results of this exercise for several of the statistical specifications reported in Table 2. The results indicate that the decline in unemployment that continued through the economic expansion contributed about 44 percent towards the decline in welfare reciprocity in models that included both contemporaneous and lagged unemployment.²¹ Waivers accounted for roughly 15 to 20 percent of the decline in models that ignore the potential effects of an impending waiver grant. Once these effects are included (Column 6 of Table 2), estimates indicate that waivers can explain 31 percent of the decline in the share of the population receiving welfare. In this model, other unidentified factors explain an additional 25 percent.

A similar exercise could be conducted for the 1989-1993 period that saw a tremendous increase in the rate of welfare receipt. As discussed earlier, the magnitude of the increase is somewhat surprising given the relatively mild recession in the period. The estimates provided here reinforce the mystery; changes in unemployment can only explain about 30 percent of the rise in

²⁰Simply subtracting the sum of the two effects from 100 only indicates the contribution of other factors if no interaction between changes in unemployment and waiver policy on welfare receipt occurs. It may be the case, for example, that waiver policies are more effective in states with low unemployment rates. Models that incorporated this possibility were also estimated but the results indicated that the interaction between unemployment and waivers was not statistically significantly different from zero at conventional significance levels.

²¹Based on estimates from a model of the duration of welfare spells and permanent changes in labor market conditions, Hoyues (1996) estimates that a typical economic expansion would result in an 8 to 10 percent reduction in the welfare caseload. This estimate is somewhat higher than the findings presented here and the difference is consistent with the fact that the current expansion is ongoing and, therefore, does not represent a permanent change in labor market conditions.

welfare rolls. Waivers were relatively new by 1993 and are found to have very little impact on the share of the population receiving welfare; in fact, they are expected to lead to a small decline. That leaves roughly 70 percent of the rise unexplained by this statistical analysis. Other forces that are more difficult to quantify must have been changing over this period, contributing to the increase.

DISCUSSION

The findings presented in this paper indicate that a robust economy and federal waivers allowing states to experiment with new welfare policies have each made large contributions towards reducing the rate of welfare receipt. The estimates provided here suggest that over 40 percent of the decline in welfare receipt between 1993 and 1996 may be attributed to the falling unemployment rate and almost one-third can be attributed to the waivers. Other factors that are not identified in this analysis are responsible for the remainder.

The methodology employed in this analysis poses two problems in interpreting these results. First, it is possible that the estimated effect of waivers on AFDC receipt may be capturing the tendency for states with shrinking welfare rolls to be the ones most willing to experiment with waiver policies.²¹ Another shortcoming of this research is that it cannot determine the outcomes for those individuals who otherwise would have collected benefits had waivers not been granted. Additional research that can determine how individuals fare under the alternative waiver provisions, rather than an aggregate analysis examining the share of the population receiving welfare, is clearly desirable to help address this issue.

²¹One might expect states with difficulties in holding down their welfare rolls to experiment with approaches to achieve that end. This sort of policy endogeneity would bias the results towards finding a positive relationship between waivers and the rate of welfare receipt.

References

Congressional Budget Office. Forecasting AFDC Caseloads with an Emphasis on Economic Factors. Washington, DC. July 1993.

Council of Economic Advisers. Economic Report of the President. Washington, DC: Government Printing Office. February 1997.

Gabe, Thomas. Demographic Trends Affecting Aid to Families with Dependent Children (AFDC) Caseload Growth. Congressional Research Service. December 9, 1992.

Hoynes, Hilary Williamson. "Local Labor Markets and Welfare Spells: Do Demand Conditions Matter?" National Bureau of Economic Research, working paper 5643, June 1996.

Moffitt, Robert. "Historical Growth in Participation in Aid to Families with Dependent Children: Was There a Structural Shift?" Journal of Post Keynesian Economics. Spring 1987. pp. 347-363.

Moffitt, Robert A. "The Effect of Employment and Training Programs on Entry and Exit from the Welfare Caseload." Journal of Policy Analysis and Management. Vol. 15, No. 1 (1996). pp. 32-50.

Pavetti, LaDonna-A. and Amy-Ellen Duke. Increasing Participation in Work and Work-Related Activities: Lessons from Five State Welfare Reform Demonstration Projects. The Urban Institute: Washington, DC. September 1995.

Yelowitz, Aaron S. "The Medicaid Notch, Labor Supply, and Welfare Participation: Evidence from Eligibility Expansions." Quarterly Journal of Economics. November 1995. pp. 909-939.

DATA APPENDIX: DEFINING AND CODING WELFARE WAIVERS

Most waivers awarded to states include a multitude of provisions that vary in the degree of their implications. Some affect the entire caseload while others affect a very small segment, like those that were introduced in pilot sites, such as a few counties. Some contain generally standard provisions while others are more complicated and require some judgement in categorizing them. In this paper, six major types of waivers that were implemented in most, if not all, of the state are considered. This appendix will provide some background regarding each of these different types of waivers, and how they have been coded for this analysis.

Termination and Work-Requirement Time Limits. Under AFDC, families were entitled to receive benefits as long as they met the eligibility requirements; states could only impose a time limit on the duration of benefit receipt if they were granted a waiver. Several states received such a waiver to implement two main types of time limits. Termination time limits result in the loss of benefits for the entire family or just for the adult members, depending on the individual state's plan. While most states set a limit of 24 months or so for all recipients, other states had variable time limits. For example, Iowa's plan called for recipients to develop a self-sufficiency plan that included individually-based time limits, and Texas limited benefits to 12, 24, or 36 months depending on the recipient's education and work experience. Illinois provides an example of a state that contained this type of waiver provision but that is not coded as such here because it applied to a small fraction of the recipients (those with no children under age 13).

Work-requirement time limit waivers continue to provide benefits to adult recipients who reach the time limit as long as they comply with mandatory work requirements. For example, Massachusetts requires recipients unemployed after 60 days of AFDC receipt to do community service and job search to earn a cash "subsidy." California requires individuals who received AFDC for 22 of the previous 24 months to participate in a community service program for 100 hours per month. New Hampshire alternates 26 weeks each of job search and work-related activities for recipients. West Virginia's plan only requires participation in its work experience program by one parent in two-parent AFDC-UP cases, which are a small share of the total caseload, so it is not coded as a work-requirement time limit.

Some time limit waivers contain more complicated provisions that make them difficult to code. For instance, Delaware requires "employable" adults to participate in a pay-for-performance work experience program after receiving benefits for 24 months; after 24 months of program participation, the family completely loses cash benefits. Time limits with provisions such as this have been coded as containing both termination and work requirement provisions. Washington's plan is a grant-reduction time limit, subtracting 10 percent of the benefit for those who have received benefits for 48 of 60 months, then 10 percent for every 12 months thereafter. Because the time frame before a significant reduction in benefits could occur is so long, no time limit is coded for Washington.

Family Caps. Under AFDC, a family's benefit level depended upon its size, so if a recipient had a baby the grant amount rose. Family cap waivers allowed states to eliminate or reduce the increase in benefits when an additional child was born. A few states, like South Carolina, provide vouchers for goods and services worth up to the amount of the denied benefit increase. Others allow child

support collected for the additional child to be excluded from AFDC income calculation. All family cap waivers except New Jersey's exempt children conceived as a result of rape or incest from the family cap. Several states, such as Wisconsin, Massachusetts and Illinois, specify that a child born or conceived after a family no longer receives AFDC can be denied benefits if the family returns to AFDC.

JOBS Exemptions. The Job Opportunities and Basic Skills Training Program (JOBS), part of the 1988 Family Support Act, provides education, training and work experience activities to AFDC recipients who did not fall into one of the exemption categories. The exemption categories were rather large, however. For instance, parents with children under age 3 were exempt and those with children under age 6 could only be required to participate if the state guaranteed child care. Some states requested a waiver to narrow the exemption criteria. The most commonly requested waiver required parents with young children (sometimes as young as 12 weeks) to participate in JOBS. Other waivers allowed teen parents attending school and people working 30 hours a week to be considered as JOBS participants. Hawaii had a JOBS waiver approved for a pilot site in Oahu, where a large share of the state's population lives, so it was coded as statewide.

JOBS Sanctions. Some states found that the sanctions for non-compliance with JOBS were not strong enough to motivate unwilling participants; they requested and were granted waivers to impose harsher sanctions. Twenty-two of the states were allowed to impose full-family sanctions (such as suspension of the entire family's AFDC grant) after a continued period of non-compliance. Other states requested tougher sanctions imposed upon the recipient only, leaving the children on the

welfare rolls regardless of the parent's behavior. An informal survey of state welfare agencies conducted by the Council of Economic Advisers indicates that the use of sanctions has varied considerably across states. Some states have been very aggressive, sanctioning large numbers of recipients while others have sanctioned few, if any. For example, over the 1996 fiscal year Missouri reported sanctioning an average of 3,100 people per month, including sanctions of different severity levels. Massachusetts terminated benefits for 1,200 families in 1996 for failure to comply with training/work requirements. On the other hand, Georgia sanctioned few recipients in 1996.

Earnings Disregard. Without a waiver, individuals are allowed to keep \$30 plus one-third of all additional earnings for the first three months of benefit receipt (the "standard AFDC disregard"). After that almost every dollar of earnings results in a dollar reduction in benefits. Some states received statewide waivers to improve the economic incentives for recipients to work by increasing earned income disregards. The changes ranged from removing the time limit on the standard AFDC disregard to disregarding all earned income up to the poverty line.

Approval Dates of Major Statewide Welfare Waivers in the Bush and Clinton Administrations

State	Any Major Statewide Waiver	term. time limit	work req. time limit	family cap	JOBS	Earnings Disregard	Sanctions
Alabama							
Alaska							
Arizona	5/22/95	5/22/95		5/22/95			5/22/95
Arkansas	4/5/94			4/5/94			
California	10/29/92, 9/11/95, 8/19/96		9/11/95	8/19/96		10/29/92	
Colorado							
Connecticut	8/29/94, 12/18/95	12/18/95		12/18/95	8/29/94, 12/18/95	8/29/94	8/29/94
Delaware	5/8/95	5/8/95	5/8/95	5/8/95	5/8/95	5/8/95	5/8/95
DC							
Florida	6/26/96			6/26/96	6/26/96		
Georgia	11/1/93, 6/24/94			11/1/93		6/24/94	11/1/93
Hawaii	6/24/94, 8/16/96	8/16/96			6/24/94	8/16/96	
Idaho	8/19/96				8/19/96		8/19/96
Illinois	11/23/93, 9/30/95, 6/26/96			9/30/95	9/30/95	11/23/93	6/26/96
Indiana	12/15/94, 8/16/96	12/15/94		12/15/94	12/15/94		8/16/96
Iowa	8/13/93, 4/11/96	8/13/93			8/13/93, 4/11/96	8/13/93	8/13/93
Kansas							
Kentucky							
Louisiana							
Maine	6/10/96				6/10/96		
Maryland	8/14/95, 8/16/96			8/14/95	8/16/96	8/16/96	8/16/96
Massachusetts	8/4/95		8/4/95	8/4/95	8/4/95	8/4/95	8/4/95
Michigan	8/1/92, 10/6/94		8/1/92		10/6/94	8/1/92	10/6/94
Minnesota							

State	Any Major Statewide Waiver	term. time limit	work req. time limit	family cap	JOBS	Earnings Disregard	Sanctions
Mississippi	9/1/95			9/1/95			
Missouri	4/18/95		4/18/95				4/18/95
Montana	4/18/95		4/18/95			4/18/95	4/18/95
Nebraska	2/27/95	2/27/95		2/27/95	2/27/95	2/27/95	2/27/95
Nevada							
New Hampshire	6/18/96		6/18/96		6/18/96	6/18/96	6/18/96
New Jersey	7/1/92			7/1/92	7/1/92	7/1/92	7/1/92
New Mexico							
New York							
North Carolina	2/5/96	2/5/96		2/5/96	2/5/96		2/5/96
North Dakota							
Ohio	3/13/96	3/13/96				3/13/96	3/13/96
Oklahoma							
Oregon	7/15/92, 3/28/96	3/28/96			7/15/92, 3/28/96		3/28/96
Pennsylvania							
Rhode Island							
South Carolina	5/3/96	5/3/96		5/3/96	5/3/96		5/3/96
South Dakota	3/14/94		3/14/94				3/14/94
Tennessee	7/25/96	7/25/96		7/25/96	7/25/96	7/25/96	7/25/96
Texas	3/22/96	3/22/96			3/22/96		3/22/96
Utah	10/5/92				10/5/92	10/5/92	10/5/92
Vermont	4/12/93		4/12/93		4/12/93	4/12/93	4/12/93
Virginia	7/1/95	7/1/95		7/1/95	7/1/95	7/1/95	7/1/95
Washington	9/29/95						9/29/95
West Virginia	7/31/95						7/31/95
Wisconsin	6/24/94, 8/14/95			6/24/94	8/14/95		8/14/95
Wyoming							

Table 1: State Characteristics Over Time, by Welfare Waiver Status

Characteristic	States without Major Statewide Waiver		States with Major Statewide Waiver	
	Short-Term Changes, 1993-1996			
	(1) 1993	(2) 1996	(3) 1993	(4) 1996
% of population receiving AFDC	5.3	4.7	5.5	4.7
unemployment rate	7.1	5.5	7.1	5.4
max AFDC benefit (3 person family, 1996 dollars)	453	421	420	386
	Long-Term Changes, 1980-1990			
	1980	1990	1980	1990
Poverty Rate	13.1	14.0	12.3	12.9
% of Families Headed by Women	14.5	17.0	13.7	15.7

Table 2: Effect of Economic Activity and Federal Welfare Waivers
on Rate of AFDC Reciprocity
(coefficients multiplied by 100, standard errors in parentheses)

VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)
log of maximum AFDC benefit	32.23 (5.10)	-5.91 (4.80)	7.93 (4.80)	11.03 (4.88)	9.99 (4.82)	8.61 (4.83)
unemployment rate	4.73 (0.35)	3.10 (0.26)	-0.90 (0.43)	-0.86 (0.43)	-0.91 (0.42)	-0.77 (0.42)
lagged unemployment rate			4.97 (0.42)	4.86 (0.42)	4.94 (0.41)	4.79 (0.41)
any statewide welfare waiver	-9.40 (2.26)	-5.78 (1.94)	-5.17 (1.74)		-1.64 (2.05)	2.26 (2.38)
JOBS sanctions				-9.69 (3.00)	-8.35 (2.59)	-6.96 (3.11)
JOBS exemptions				2.64 (3.09)		
termination time limits				-6.37 (3.74)		
work requirement time limits				2.86 (2.83)		
family cap				-0.49 (2.76)		
earnings disregard				0.11 (2.16)		
lead of any statewide waiver						-6.28 (2.21)
lead of JOBS sanction waiver						-1.50 (2.60)
state fixed effects	x	x	x	x	x	x
year fixed effects	x	x	x	x	x	x
state-specific trends		x	x	x	x	x

Note: The dependent variable is the share of the population receiving welfare, measured in natural logs.

Table 3: Percentage of Change in Welfare Recipients
 Attributable to Different Factors
 (Standard Errors in Parentheses)

	Based on Results in Table 2, Column:			
	(2)	(3)	(5)	(6)
	1993-1996			
change in unemployment	31.3 (2.7)	44.7 (3.2)	44.4 (3.2)	44.1 (3.2)
welfare waiver approval	14.9 (5.0)	13.3 (4.5)	21.8 (6.2)	30.9 (9.2)
other	53.8	42.0	33.8	25.0
	1989-93			
change in unemployment	23.9 (2.0)	30.8 (2.7)	30.5 (2.7)	30.4 (2.7)
other	76.1	69.2	69.5	69.6

Figure 1

Unemployment Rate and Rate of Welfare Receipt

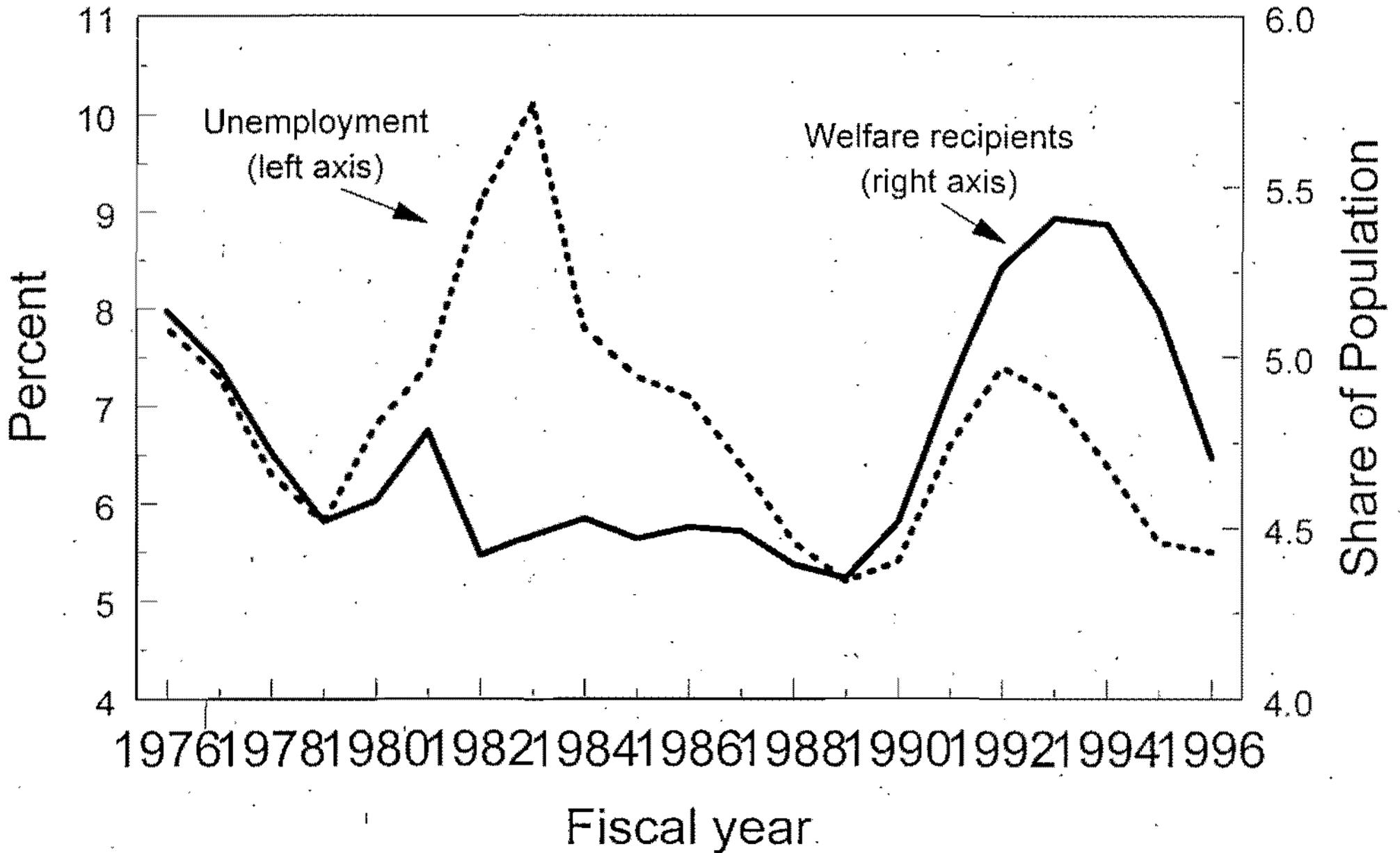
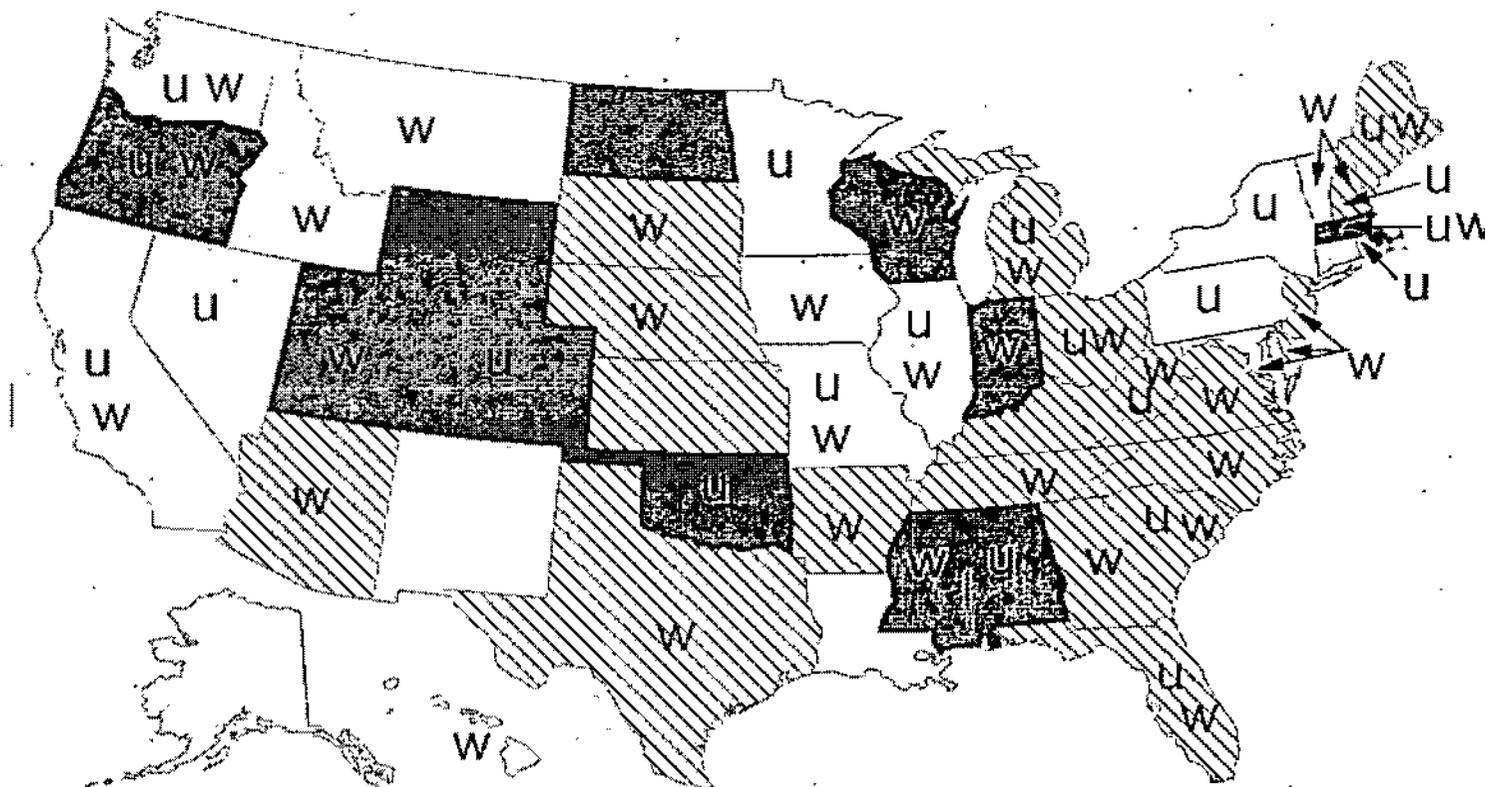


Figure 2

Reduction in Welfare Recipients and Unemployment Rate

1993 to 1996



Reduction in welfare recipients
(share of population):

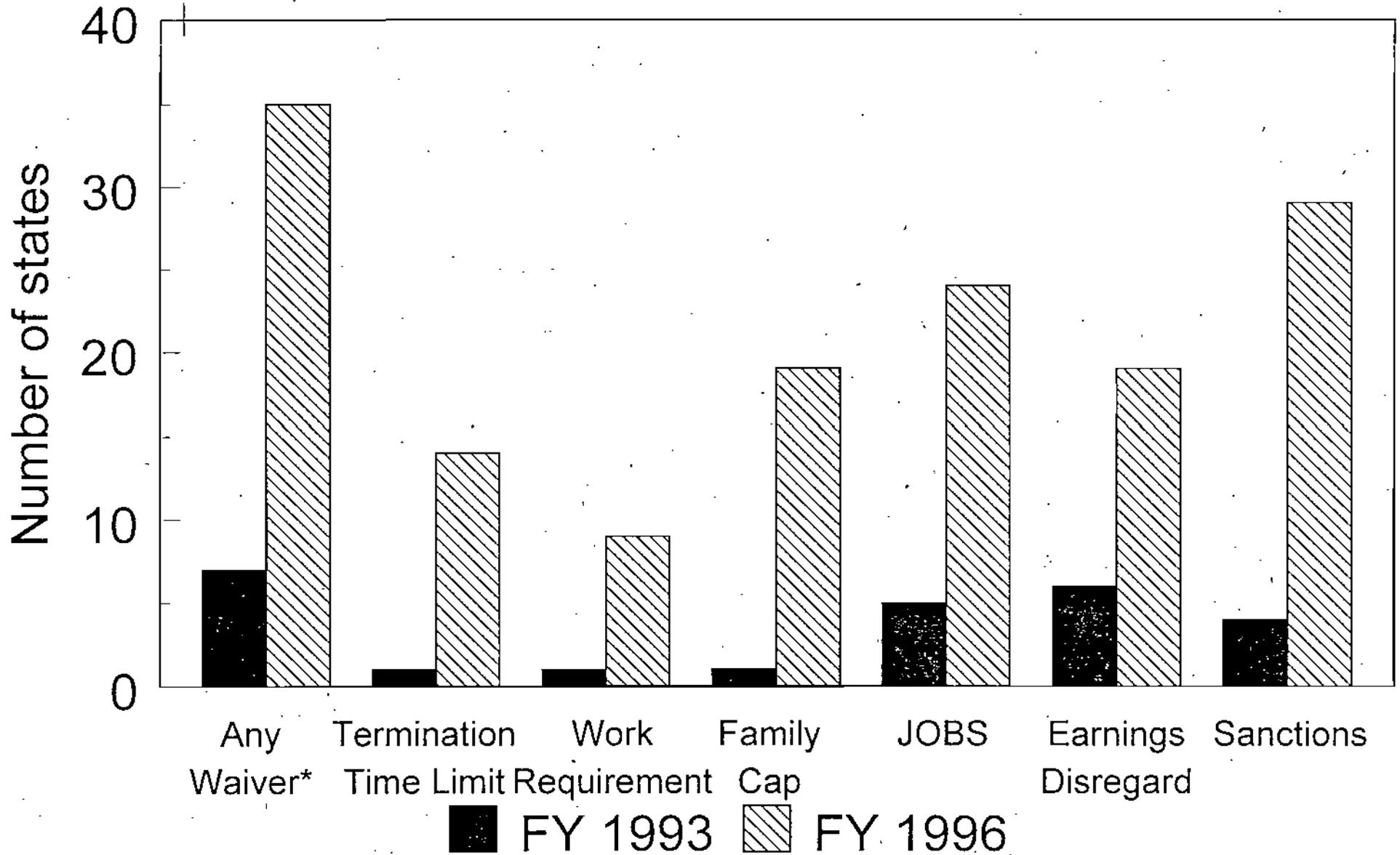
- Over 25 percent
- 15 - 25 percent
- Less than 15 percent

U 1.6 percentage points or more
reduction in unemployment rate
(larger than national average)

W Major statewide waiver approved

Figure 3

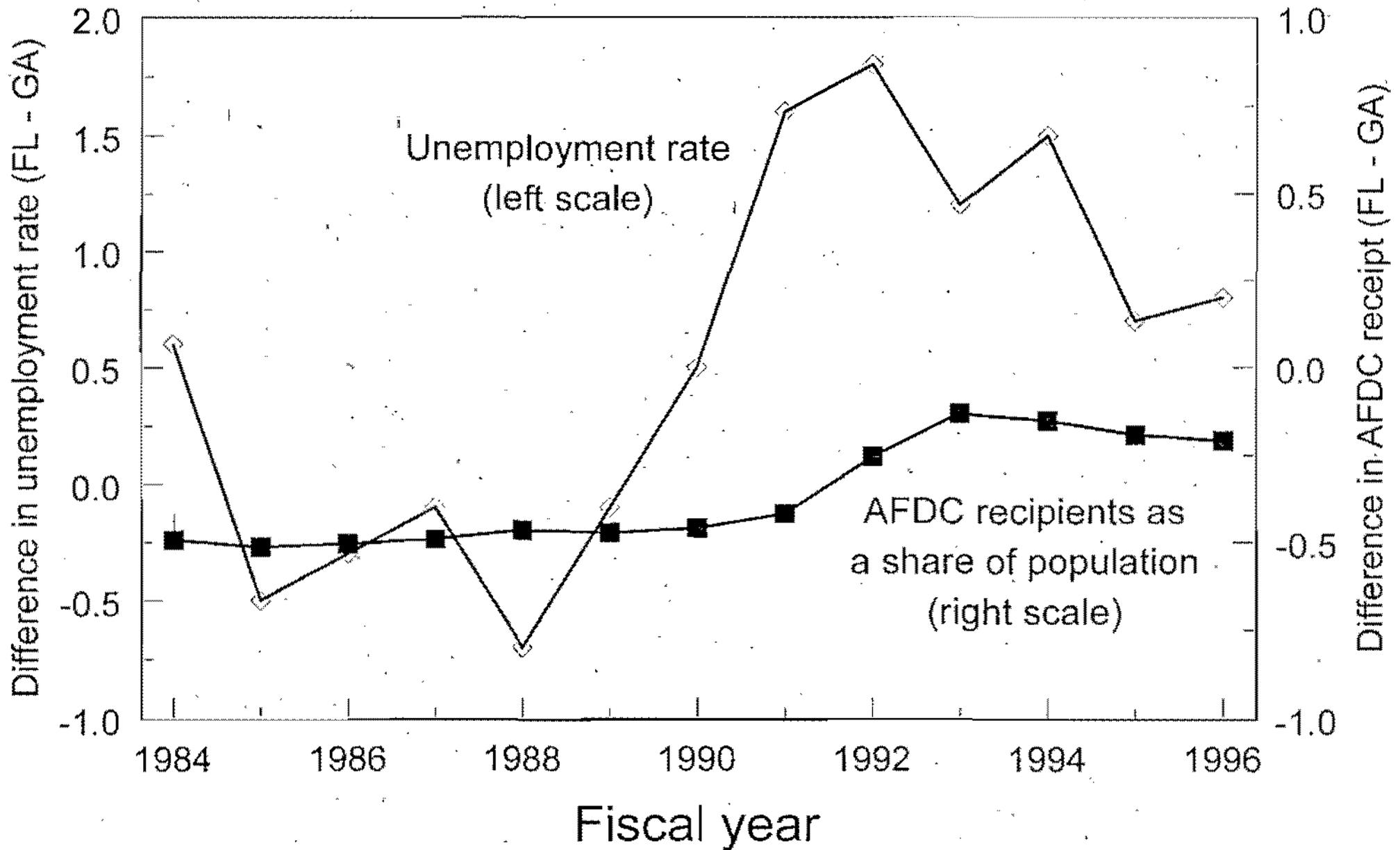
Number of Approved Statewide Waivers



* 43 states have received waivers under the Clinton Administration, but not all are statewide.

Figure 4

A Comparison of Florida and Georgia



THE ECONOMICS OF CHILD CARE

A Report by the Council of Economic Advisers

December 1997

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EXECUTIVE SUMMARY

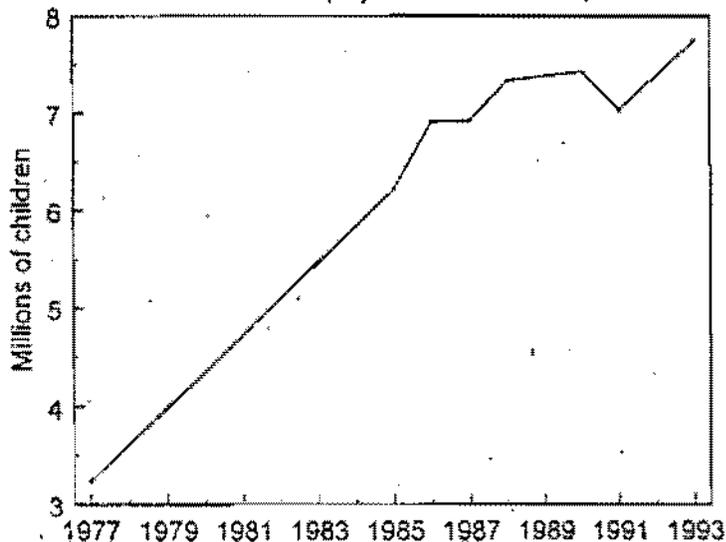
- Large increases over the last twenty years in the numbers of employed mothers and young children has more than doubled the number of young children in non-parental care. By 1995 there were almost 10 million children under 6 with employed mothers in parental care. This trend is likely to continue as welfare reform moves many more young children off welfare and into the workplace.
- Many families with young children and employed mothers rely on informal, low cost care supplied by relatives. But over half of these families purchase child care; those without access to subsidized care, child care costs can be a sizable financial burden. This burden is particularly heavy for poor families: Poor families who pay for child care for their young children spend an average of 18 percent of their income on child care, compared to 7 percent for non-poor families.
- There is also reason to be concerned about the quality of care: Recent surveys of child care centers and family day care homes found that the majority of child care was not up to a high enough standard to have a positive impact on child development, and a distraction was of a level that could threaten the child's health and safety. Quality problems are particularly serious for infants and toddlers and for children from low-income families.
- Potential economic arguments for intervention in the child care market include externalities, information problems and redistribution. This paper reviews these arguments and the related evidence.
- Subsidizing work-related child care expenses raises the effective return to working, thereby increasing the incentive to work. Evidence suggests that child care subsidies increase both the employment of mothers and the use of paid care among working mothers. Based on the estimates from the empirical literature, it appears that a 20 percent decrease in the cost of care for working mothers with young children who are below the poverty line is associated with an increase of 122,000 to 490,000 more mothers working and 124,000 to 318,000 more young children in paid care. Regulations that increase the quality of care but may also increase provider costs and the price paid by parents, thus driving some providers out of the market and inducing some parents to switch to unregulated care.
- Remaining gaps in knowledge prevent comprehensive analysis of policy options. There are virtually no studies that examine the responses of the low-income population to child care policy; most of the evidence reviewed in this report is based on studies of a general population. Since the responses of the low-income population are likely to differ from those of the population as a whole, our ability to estimate the responses of the low-income population to child care policy is necessarily limited. In addition, there are

areas in which additional information is needed to evaluate policy options. First, while there is a large body of evidence on the relationship between child care quality and child development, policy design would benefit from more specific information about the nature of the link between attributes of care and child outcomes; one unresolved question, for example, is how different attributes of care interact with each other in affecting child outcomes. Second, we lack information about the effect of regulations on the price of care and on parental use of regulated care. Finally, we have only limited -- and incomplete -- evidence of the effect of child care subsidies on the quality of care purchased; although the existing evidence suggests that parents do not respond to child care subsidies by purchasing higher quality care, there have been only a few studies on this topic. Finally, there is virtually no information about the quality and supply of unregulated care. These areas should receive high priority in future research.

OVERVIEW OF CHILD CARE

Between 1977 and 1993, the number of children under 5 with employed mothers in non-parental care more than doubled¹ (see graph). By 1995, there were almost 10 million children under 6 with employed mothers in non-parental care.² This surge is attributable to a combination of increases in both the number of young children in dual-earner families and the number in one-parent families with an employed parent.³

Number of Children with Employed Mothers in Non-parental Care



Modes of care

Non-parental care can take many different forms. A distinction should be drawn between unpaid care and paid care. Care provided by relatives is usually unpaid -- in 1993, only 17 percent of care provided by a relative involved payment -- while 90 percent of care provided by centers or family day care homes involved payments.⁴ Over time employed mothers have shifted their care arrangements from parents or relatives to modes of child care more likely to involve

direct payments.⁵ In 1993, about 56 percent of families with an employed mother and a child under 5 used paid care.⁶ Some families use multiple modes of care for a given child; for example, in 1995, 9 percent of parents used multiple child care arrangements.⁷ Multiple arrangements are

¹Casper (1996).

²U.S. Department of Education (1995). Numbers refer to children not yet in kindergarten. In addition, there were approximately 3.4 million children under 6 with *non-employed* mothers in non-parental care.

³Hernandez (1995).

⁴Casper (1995).

⁵Hofferth (1996).

⁶Casper (1995).

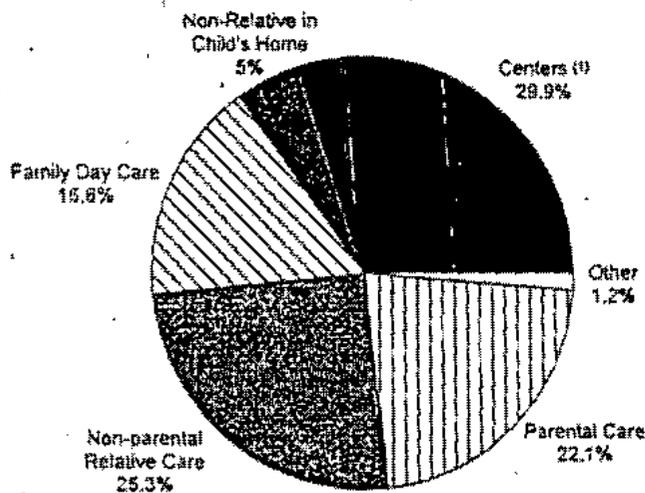
⁷Hofferth (1996)

particularly common for low-income single mothers: 45 percent of low-income preschoolers in families headed by an employed single mother were in more than one care arrangements on a regular basis.⁸

Paid care comes in several varieties. The most common are child care centers, family day care homes (in which a non-relative cares for one or more unrelated children in the provider's home), and in-home, non-relative sitters. There has been a shift over time toward more use of center care and less use of family day care. In 1988, 26 percent of young children with an employed mother had their primary care arrangement in center care and 24 percent in a family day care home; by 1993, these numbers had changed to 30 percent and 17 percent respectively.⁹ (see graph). Use of

center-based care tends to increase with the age of the child and with the income of the family.¹⁰

Percent of Children of Employed Mothers in Different Types of Care, 1993



(1) Includes center day care and nursery / preschool

The cost of care

The price of paid care represents a substantial financial burden to parents who lack subsidized care, and a proportionally much larger burden for lower-income families. In 1993, among families with employed mothers and young children who paid for care, those earning less than \$14,400 per year

spent an average of 25 percent of their income on child care compared to under 6 percent for families with annual incomes over \$54,000. This financial burden varies with the mode of care; the average weekly cost of care in 1993 was \$57 for family day care, \$65 for organized child care (center or preschool/nursery), and \$83 for an in-home sitter.¹¹

The quality of care

In addition to concern about the financial burden of care, there is concern about the quality of

⁸Phillips (1995).

⁹Casper (1996).

¹⁰Hofferth (1996).

¹¹Casper (1995)

care. If children are placed in child care settings that are unsafe or unsanitary, they can be in grave danger of harm. Care that endangers children's health and safety imposes costs on the children, their parents and society as large. Among these costs are the financial costs of children's illness and hospitalization, and resultant parental absences from work.¹² In addition to making sure that children are not harmed in their care environment, there is a concern over whether the care promotes and enhances the child's development.

'Quality' is a multi-dimensional concept. It is not easy to give a uni-dimensional 'quality rating' to a child care setting when a wide variety of factors interact to determine the quality of care received. Additionally, a dearth of information about unregulated child care providers compounds the problem of accurately assessing the 'quality' of care that children are receiving. However, two recent studies of regulated providers -- one of child care centers and one of family day care homes -- produced some disturbing evidence of the quality of child care. The study of centers found that 86 percent of the centers surveyed provided mediocre or poor-quality care -- when judged from the perspective of child development -- and 12 percent were of such poor quality that the children's basic health and safety needs were only partly met. The family day care study found similar results: 91 percent were judged to be of inadequate or of only adequate quality.¹³ It is not clear whether centers or family day care homes are on average of higher quality. Centers tend to have more highly trained staff, but also have larger group sizes and lower staff-child ratios than family day care.¹⁴

The quality of care varies with the age and income of the children. Evidence suggests that infants and toddlers may be disproportionately in unsafe and unsanitary care settings. The study of centers, for example, found that almost *half* of infants and toddlers were in rooms where children's basic health and safety needs were not met.¹⁵ And while the distribution of children across centers of differing quality does not appear to vary with the income of the children, there is evidence that the informal and home-based care for low-income children is of lower quality than that received by higher-income children.¹⁶ Given that poor children are much less likely to use center-based care,¹⁷ this observation suggests that these children tend to be in lower quality

¹²See e.g. Beli et al. (1989).

¹³Helburn and Howes (1996).

¹⁴Walker (1992); Blau and Hagy (forthcoming); Blau (under revision); Waite et al. (1991).

¹⁵Cost, Quality and Child Outcomes in Child Care Centers (1995).

¹⁶Phillips (1995).

¹⁷Casper (1996). Twenty percent of poor children under 5 with employed mothers were in center-based care in 1993, compared with 31 percent of non-poor children.

care than higher income children.

CURRENT FEDERAL CHILD CARE POLICIES

Federal policies to reduce the cost of care

Several policies of the federal government reduce the costs of child care for working parents. These include the Child and Dependent Care Tax Credit (CDCTC), the Exclusion of Employer Contributions for Child Care Expenses, and the Child Care and Development Block Grant (CCDBG). (see box on next page).

Although we know what the state income eligibility requirements are for CCDBG funds, we do not have any available data on the percentage of their eligible population that states are currently funding. Some data from the four programs that preceded the current CCDBG suggested that approximately 1 million children under the age of 13 were receiving federally subsidized care, out of approximately 10 million children under 13 with working mothers and family income that was less than 200 percent of poverty.¹⁸ Although some of these families can benefit from the CDCTC, many do not; they either cannot claim the credit at all because they do not have any income tax liability, or they do not receive the full benefit of the credit because of low income tax liability. *Consequently, the vast majority of children with working mothers below 200 percent of poverty receive no -- or almost no -- federal subsidies for their child care.*

Government policy that pertains to the quality of care

The 1996 Personal Responsibility and Work Opportunity Reconciliation Act requires states to spend no less than 4 percent of their CCDBG funds on 'quality-enhancing' activities.¹⁹ The federal government also requires states to certify that they have requirements to protect the 'health and safety' of children served by CCDBG providers. States, however, are free to design the actual requirements that meet these aims.²⁰

¹⁸Child Care Bureau (1997).

¹⁹U.S. House of Representatives (1996). No data are currently available on how much the states spend and how they spend it. However, under the earlier program, 7 percent of CCDBG expenditures in fiscal year 1995 were used to improve the quality of child care. Of these funds, two thirds were used for monitoring and child care resource and referral (Child Care Bureau 1997).

²⁰Child Care and Development Block Grant Act Section 658E.

Federal Policies to Reduce the cost of child care

gram	Description	Average award	Eligibility	Total Federal Expenditures
CTC ¹	Non-refundable tax credit for taxpayers who incur work-related child care expenses. Rate phased down for higher incomes.	\$443 in fiscal year 1998.	Those with federal income tax liability. According to Treasury estimates, this generally includes taxpayers with income above the poverty level. Due to low tax liabilities, a taxpayer may not receive the full amount of the credit until his or her income exceeds -- depending on family composition -- 140 to 160 percent of poverty.	Estimated to be \$2.8 billion in Fiscal Year 1998.
Employer Exclusion	Employers are allowed to exclude the provision of child and dependent care or employee contributions to such care accounts from employees' taxable income and social security earnings.	For families with high marginal tax rates, worth much more than CDCTC.	Families with participating employees.	Estimated to be \$890 million in fiscal year 1998.
DBG	Block grant to states that can be used to subsidize child care for parents who are working or participating in work-related activities or education programs. ²	Average federal subsidy is \$66 per week. ³	Federal law ensures that states can only use block grant funds to serve families with incomes below 85% of state median income and must use at least 70% of their mandatory and matching funds for families on TANF, transitioning from TANF, or at risk of becoming eligible for TANF. Within these requirements, states have set a wide range of eligibility thresholds. ⁴ Data on who -- among the eligible -- has been funded are not yet available for the current program, but 1995 data on the old CCDBG program indicate that over 85% of families funded were under 150% of poverty, and all but 1% were under 200 percent of poverty. ⁵	\$2.9 billion in FY 1997..
NF	PRWORA allows states to transfer up to 30% of their TANF block grant into the child care or social services block grants, but no more than 10% of the TANF block grant can be used for the social services block grant.			The total annual TANF block grant to the states is capped at \$16.4 billion

¹Source: Treasury materials.

²This program is a consolidation (under PRWORA 1996) of four previous subsidy programs: Aid to Families with Dependent Children, Transitional Child Care, At-Risk Child Care and the Child Care and Development Block Grant Program. It has been estimated that PRWORA increased federal funding compared to the programs it replaced by about \$4 billion over the six years FY 1997- FY 2002. (U.S. House of Representatives 1996).

³HHS materials based on CCDBG data from Fiscal Year 1995.

⁴American Public Welfare Association (1997).

⁵Child Care Bureau (1997).

Regulations and licensing provisions are determined at the state or local level and vary widely.²¹ Licensing standards apply only to licensed or regulated child care providers, and states are free to determine the providers to which licensing standards will apply.²² In the case of family day care homes, most states exempt small providers from licensing requirements.²³ Consequently, an estimated 82 to 90 percent of family day care homes were unregulated in 1990.²⁴ These unregulated homes are all eligible to receive CCDBG funding, as long as they fulfil the state's 'health and safety' requirements.²⁵

ECONOMIC RATIONALES FOR INTERVENTION

Child care is a rapidly growing industry, involving substantial costs to large numbers of parents. The government currently intervenes in this market, as discussed in the previous section. Here, we review the economic rationale for government intervention in the child care market, as well as the choice of policy instrument.

OVERVIEW: WHY AND HOW DO GOVERNMENTS INTERVENE IN MARKETS?

From an economic perspective, two issues must be addressed in thinking about child care policy. First, is there an economic rationale for the government to intervene? Second, if so, what is the appropriate *type* of intervention?

Reasons for government intervention can be broadly grouped into two categories: market imperfections and redistribution. Market imperfections fall into two types: external effects and informational imperfections. If private actions impose benefits or costs on society which the market participants do not reap or bear, then the decisions of private individuals may not be socially optimal. If consumers do not have the information necessary to make appropriate choices, the government may be able to provide information that improves their ability to make choices. Government intervention on redistributive grounds might be motivated by a desire to decrease income inequality, or to ensure that access to a particular service or commodity is not conditioned on income.

The economic justification for government intervention requires more than the identification of a market failure or redistributive goal. In the case of an intervention to correct a market failure,

²¹U.S. House of Representatives (1996). See also CCDBG Act Section 658E.

²²CCDBG Act Section 658E.

²³U.S. House of Representatives (1996) and Children's Foundation (1997).

²⁴National Association for the Education of Young Children (1991).

²⁵CCDBG Act Section 658E

the government must also be able to identify a policy that allows it to intervene in such a way that the costs of intervention are less than the benefits. Even when the goal is redistributive, it is important for the government to seek policies that achieve the desired redistribution at the lowest cost.

The government has a variety of tools at its disposal including regulation, mandates, information provision, subsidies, and direct provision of the good in question. The appropriate policy tool depends on the rationale for intervention.

- If the problem is one of an external benefit, then the government might want to induce greater consumption through subsidies or through direct provision. Which is more appropriate depends on the responsiveness of consumers to the relative price of the good, as well as to the government's efficiency - relative to the private sector - in producing the good. Regulations or mandates are also a possible tool for addressing external benefits although the benefits from regulation must be weighed against the costs of regulation. These costs include the potential for regulations to drive up the cost of the good and to drive providers of the good out of the market; in addition, the government incurs administrative expenses in regulating and enforcing the regulation. Providing information is unlikely to be an effective instrument for addressing under-consumption caused by external benefits.
- If the issue is one of information imperfections, then the provision of information, or of regulations that reduce uncertainty about quality are possibilities. Subsidies are unlikely to prove useful in addressing an information problem.
- If the goal is redistributive, then subsidies or direct provision could be appropriate. Further consideration should be given to whether the government should provide a general income transfer or a subsidy that is specifically tied to the good or service in question.

GOVERNMENT INTERVENTION IN THE CHILD CARE MARKET

External benefits from child care

In recent years there has been a growing awareness of the substantial and long-lasting effects on children of their experiences in their first few years. Children's health and emotional well-being in these early years are critical to their future behavior and development. Consequently, government investments in young children can yield substantial returns over the child's life.²⁶ Such government intervention may be desirable if parents do not invest enough in children since

²⁶See Council of Economic Advisers (1997) for a discussion of the long lasting effects on children of investments made in the first few years.

the parents are not the only beneficiaries. Such an external benefits argument has often been made to justify government intervention in education.²⁷ If child care in the early years also produces benefits to the child and to society in the form of the child's current and subsequent development and behavior, then the government might want to intervene to ensure that children receive such care. Given the importance of the early years for future development, if a link can be established between child care and developmental outcomes, arguments for government intervention in elementary and secondary education apply with even more force to the child care market.

The question of whether child care can enhance child development is separate from the question of whether unsafe and unsanitary child care can endanger children. There is no question that unsafe and unsanitary child care can harm children, and another section of this paper examines potential government policy to protect children from harmful care environments. Here we examine whether child care can promote child development. The link that is usually made -- the one reviewed below -- is not between child care per se and child development, but between *quality* child care and child development. Therefore, government intervention for reasons of external benefits should be designed to promote high quality child care, rather than child care more generally.

Evidence of benefits of child care

Children's development is determined by many factors; characteristics of the child, the family environment, care outside the home, and the larger social environment all influence child development. But as part of this intricate, interactive process, child care can have important effects on child development. Much of what the field has learned about the effects of child care on quality on child development come from studies of programs such as Head Start and other educationally-oriented programs designed to promote child development and improve child readiness for school. Such programs, which are typically offered as part-day programs for three to five year olds²⁸ are different from the full-day care needed by many employed mothers. The provision and promotion of educationally-based programs such as Head Start is an important topic beyond the scope of this report. Here we examine what is known about the effects of various attributes of child care more broadly on child development.

Comprehensive reviews of the large literature of the effects of child care report that the effects of child care -- in both centers and family day care -- is closely linked with children's social, cognitive and language development, both at the time of receiving care and in later

²⁷See Cohn and Geske (1990) for an overview.

²⁸Gomby et al. (1995).

development.²⁹ Children from low-income families may benefit the most from high quality programs.³⁰

However the reviews note several problems with using this literature as a policy guide. Most of the studies use global or summary measures of quality (i.e. high, medium or low), which do not clearly identify the aspects of child care quality that affect development. Additionally, there has been little analysis of the *magnitude* of improvement in children's development associated with measured improvements in quality; hence these studies do not make it possible to conduct a cost-benefit analysis of policies designed to improve child care quality.³¹

Some research has addressed the relationship between child care quality as measured by specific child care attributes and child outcomes. For these purposes, measures of child care quality can be broadly grouped into two categories. One approach measures the quality of the child's experience in care; '*child experience measures*' examine the way in which the care giver interacts with the child (including verbal and empathetic behavior) and the children's exposure to materials and activities that enhance learning; the continuity of child care with the same provider is another important aspect of the child's experience. A second approach focuses on physical and structural features of care ('*structural measures*') such as staff/child ratios, group size, and provider education. Child experience measures are more broadly accepted by developmental psychologists. For practical reasons, state regulations are based on structural measures.³² Although child experience measures have a closer link to developmental outcomes than do structural measure,³³ structural attributes appear to support and facilitate the type of optimal interactions that child experience attributes measure.³⁴ For example, low staff-child ratios may make it easier for providers to develop warm and caring relationships with the children; such

²⁹Hayes et al. (1990) and Howes and Helbrun (1996). See Cost, Quality & Child Outcomes Study Team (1995) for a recent study that confirms these findings.

³⁰Phillips (1995)

³¹See Hayes et al. (1990) for a further discussion.

³²Helburn and Howes (1996). See also Hayes et al. (1990) and U.S. House of Representatives (1996).

³³In some sense, the relationship between child experience measures and child development is tautological, since the child experience measures were designed as measures of aspects thought important for child development (Blau 1997).

³⁴Hayes et al (1990). More recent evidence of the effect of child experience measures on child development is provided by the Cost, Quality & Child Outcomes Study Team (1995).

relationships in turn affect child development.³⁵

Despite encouraging findings, surveys of this literature note several shortcomings: Many studies are based on small, unrepresentative samples. Additionally, they often do not properly control for developmental inputs received by the children at home, as well as other socio-economic factors that may affect child development and may be correlated with the quality of care.³⁶ Thus, while there is broad evidence that high quality child care is beneficial to the child and society, better understanding of the relevance of specific inputs (or combinations of inputs), as well as the magnitude of their impact, could greatly improve the design of appropriate policy.

The above studies all compare child outcomes across paid child care settings of different qualities. Hence they are only able to address questions about effects of low versus high quality paid care. Two separate issues are the relative effects of different modes of non-maternal care, and the effects of maternal versus non-maternal care. Studies have established that non-maternal care is not a source of harm to children and that aspects of it can be beneficial. Stronger evidence that child care had positive developmental outcomes relative to maternal care would provide an argument for government intervention not just to provide child care for children of working parents, but possibly for all children. Consistent with this principle, intensive early education programs for low-income children like Head Start do not make eligibility contingent on parental employment.³⁷

If the government wanted to increase use of care that has external benefits, its options would include regulating the quality of care, subsidizing care, subsidizing only high-quality care, directly providing care with developmental attributes, and subsidizing the wages or training of child care providers. It is important that policy is designed to increase usage of care with external benefits. Policy designed simply to promote use of child care irrespective of quality would not be appropriate if only high-quality care has been shown to have external benefits. More research is needed to determine which attributes -- or combination of attributes -- have impacts on child outcomes, and the magnitude of these effects.

³⁵However a recent study -- Blau (1997) -- calls into question whether improvements in structural measures have effects on child experience measures; the study, using data from the National Child Care Staffing study, fails to find any robust effects of child staff ratios or staff education on child experience measure. The author notes, however, that this does not rule out the possibility that structural inputs have a direct effect on development.

³⁶See Hayes et al. (1990) or Blau (1997) for discussions of the problems with this literature. See also Kisker, 'The Importance of quality in child care' in 'Child Care Challenges for Low-Income Families'

³⁷U.S. House of Representatives (1996).

Information imperfections

Several types of information imperfections may exist in the child care market. A free market may not provide information to parents on the advantages and attributes of quality child care. Providers may be unable to obtain current information needed to ensure quality care. It may also be difficult for parents to find out who provides day care in their area, and what the attributes of the various choices are.

Indeed, there is evidence that parents lack information. For example, parents report that they value good quality child care, but it turns out that they substantially overestimate the quality of care their child is receiving;³⁸ in other words, parents have trouble evaluating the quality of care their child is receiving. Some indirect evidence of information imperfections is provided by Hotz and Kilburn (1994) who find that, holding the price of care constant, more stringent quality regulations are associated with an increase in the demand for non-parental care; they interpret this finding as evidence that the increased standards provide a higher degree of quality assurance and hence parents demand more non-parental care.³⁹

If information is the issue, then government provision of information could be appropriate. One role for government is to provide information -- or encourage private agencies to provide information -- that educates parents and providers about the aspects of care that are important for child health and safety, and for development. Another possible role is to provide information to parents about the attributes of various care options. Such a role makes sense if government or private agencies have access to better information than the individual, or at least the ability to acquire this information at a lower cost. Regulations that increase the minimum quality and therefore reduce the uncertainty faced by parents are another possibility. Regulations may also set minimum standards for health and safety and thereby reduce parents' information and search costs.

Distributional Issues

Two sorts of distributional arguments could be made for policies designed to increase the *affordability* of child care. First, such policy could serve as an employment-related income transfer to working parents. Policies designed to increase the affordability of child care may complement other redistribution programs. For example, the 1996 welfare reform legislation is intended to help move welfare recipients into the workforce. Since child care costs are a sizable burden to low income families, reductions in the cost of child care would ease the transition. Second, in so far as there can be benefits to children from child care -- or high quality child care --

³⁸Cost, Quality & Child Outcomes Study Team (1995).

³⁹A weakness of this study is that -- as discussed above -- a substantial amount of non-parental care operate legally but it not subject to licensing standards.

- child care policy could also ensure that children whose parents have low resources have 'equal opportunities.' Again, such an argument has been made to explain government involvement in primary and secondary education.⁴⁰

Whether the goal is to provide an employment-related income transfer or equal opportunities to children, two questions must be addressed in designing a redistributive policy. First, should this transfer be tied to the good in question (i.e. child care) or provided as a cash transfer? And second, if the transfer is tied to a particular good, should the government directly provide the good, or reduce the cost to parents of purchasing the privately-provided good?

A cash transfer provides a working family with additional cash that they can choose to spend as they wish. Child care subsidies or government-provided child care, on the other hand, provide money that can be used only for child care. Economic theory suggests that recipient well-being can be increased more efficiently through a cash transfer. It is well-known that the utility gain from transferring a bundle of goods (such as child care) cannot be more and is frequently less than from the equivalent amount of cash.⁴¹ This inefficiency results from the distortionary nature of an in-kind transfer. By distorting the relative prices of various goods, the transfer influences recipients' decisions concerning how much care to purchase and how much to work. If we believe there are benefits to child care that are not being taken into account, there is an argument for distorting the cost faced by the parents. But as a pure transfer policy, this represents an inefficiency compared with a cash transfer.

However, there are redistributive reasons to favor an in-kind subsidy. One reason for tying the subsidy to a particular good is to ensure that the money is spent on that good. Making the subsidy only for child care ensures that the parents spend the money on their children. Particularly if we think that there are 'equal opportunity' arguments for child care, such an in-kind transfer might make sense to ensure that parents do spend the money on child care. A second reason for tying the income transfer to purchases of child care is horizontal equity: Working adults with children have greater costs than those without. Of course, they presumably also receive benefits from having children. But if the government wants to target people with a specific need that places an additional burden on them, it would make sense to alleviate some of the additional financial burden to those working adults with children. Finally, if the increased demand for paid child care increases employment opportunities in child care for workers who are trying to move off welfare, this is a redistributive benefit from child care subsidies worth considering.⁴²

⁴⁰See, for example, Poterba (1996).

⁴¹See, e.g. Rosen (1995)

⁴²Indeed, the initial federal involvement in the child care industry -- federal funded nursery schools for poor children were established during the New Deal -- was motivated not so

Even if an in-kind transfer is chosen, there remains the question of whether the government should subsidize the cost to parents of buying private care, or provide public care. One reason it makes sense for the government to be a direct provider of education is that parents do not appear very price responsive in their demand for their child's education.⁴³ Hence, subsidizing the cost is unlikely to produce 'equal opportunity.' However, there is evidence of a fairly responsive demand for child care.⁴⁴ In addition, were the government to provide care, it could only provide center-based care. As discussed previously, many families choose family day care homes, and since there is no clear quality tradeoff, it does not seem wise for the government to distort these choices by providing one kind of care.

THE EFFECTS OF INTERVENTION

We have seen that the current quality of child care is often very poor and this may have adverse effects on children, that there may be information problems in the child care market, and that for those without access to significant subsidies for child care, child care costs can be a significant financial burden. All of these provide potential economic rationales for further government intervention in the child care market. In order to understand some of the effects of different policies, we need to understand how parents and providers respond to changes in the price of care. To this end, we review the effects of subsidies on maternal employment and the demand for child care, and of subsidies and regulation on the quality of care purchased.

THE EFFECT OF SUBSIDIES

The effect of subsidies on the cost of care

Subsidies lower the cost of child care to parents and are therefore likely to increase the demand for care. If the amount of child care available were fixed, the increase in demand would drive up prices. The price would rise by the amount of the subsidy, so that parents would end up paying the same amount as they had been before the introduction of the subsidy, and the providers of care would receive an increase in fees equal to the amount of the subsidy. The benefit of the subsidy policy, in other words, would accrue entirely to the providers.

However, the available evidence indicates that the supply of care will rise to meet an increase in demand for care without much of a change in the current price. For example, although the

much to provide child care for working families but to provide jobs for unemployed teachers and nurses and others as well as a wholesome environment for children in poverty. (U.S. House of Representatives 1996)

⁴³Poterba (1996)

⁴⁴See the next section for evidence of demand responsiveness.

number of children in paid child care has approximately doubled over the past twenty years, the real price of care has not changed.⁴⁵ In addition, direct estimates indicate that small changes in the price of child care induce large supply responses.⁴⁶ As a result, in the absence of other changes, the benefits of a subsidy accrue to the consumer.

How will consumers respond to a decrease in the cost of child care? We consider three decisions that may be influenced by the price of child care: the mother's decision to work; the decision whether to purchase paid child care or to use unpaid care; and, if paid care is chosen, the choice of the quality of care.

The effect of subsidies on employment decisions

Appendix 1 summarizes a number of studies that indicate that lower child care prices are associated with a higher probability that a mother will work. The magnitude of this effect varies across studies; a 10 percent reduction in the price of child care increases the probability that a married mother will work by 2 to 8 percent.⁴⁷ However, given that the mother is working, there is little evidence that the child care price affects the decision of the number of hours to work.⁴⁸

There is less evidence on the employment response of poor mothers or single mothers. A GAO study⁴⁹ estimates the response of different income groups, and finds that a 10 percent decrease in the price of child care increases the probability that a poor mother will work by 5 percent, compared to 3.4 percent for near-poor mothers, and 1.9 percent for non-poor mothers; the study does not report whether these differences are statistically significant. Another study finds that the employment response is somewhat greater for single mothers than married mothers, but the

⁴⁵Blau (1992), Casper and O'Connell (1997). U.S. Department of Education 1990.

⁴⁶Blau 1993.

⁴⁷Blau and Robins (1988), Connelly (1992), Ribar (1992), Averett et al. (1997). Ribar (1995)'s estimate lies outside this range. Blau and Hagy (forthcoming) look at a sample that includes both single and married mothers and find an effect at the bottom of this range. For more information on these studies, see Appendix 1.

⁴⁸See Michalopoulos et al. (1992), Berger and Black (1992), Chaplin and Hofferth (1995). One study estimates the unconditional effect of the price of child care on the mother's hours of work; Averett et al. (1997) report that a 20 percent decrease in the hourly cost of care is associated with about a 16 percent increase in the mother's hours of work. This estimate, which takes into account both increased hours from mothers who enter employment and those already working, is broadly consistent with the other findings reported here.

⁴⁹GAO (1995).

difference is not statistically significant.⁵⁰ Furthermore, once she controls for whether the single mother receives AFDC, the response for single mothers falls to that of married mothers. This suggests that the greater response to the price of care by single mothers (and perhaps also by poor mothers) was due to a viable non-employment option.

The effect of subsidies on the demand for paid care

Parents choose among a variety of modes of care, some of which are paid and some of which are unpaid. The bulk of research has focused on the effect of the price of care on the use of paid care among *working* mothers. Hence, in order to get a sense of the total effect of a decrease in the price of child care on the demand for paid care, one must combine estimates of the increase in labor supply with those of the increase in the demand for paid care among mothers who work.⁵¹

Studies find that in places with lower prices of care, working mothers are more likely to use paid care. Again, there is a large range of magnitudes but most of the studies suggest that a 10 percent decrease in the hourly cost of care results in a 1.5 to 2.3 percent increase in the probability that a working mother with a young child will purchase care.⁵²

As the price of paid care falls, mothers are likely to substitute paid care for unpaid care. Such substitution is particularly likely given that parents tend to express more dissatisfaction with non-paid care.⁵³ Unfortunately, we cannot infer from the available evidence how much of the increase in the propensity of working mothers to use paid care is due to a higher propensity to use paid care among the newly entering mothers, and how much is due to a change in the propensity of those mothers already working to use paid care, as a result of the price change.

A useful supplement to these studies of utilization is the effect of child care subsidies on the *hours* of paid care purchased as a result of a change in the price of care. Some parents use multiple modes of care. An increase in utilization of paid care may therefore reflect the decision

⁵⁰Kimmel (1994).

⁵¹There is also evidence (Blau and Hagy (forthcoming), Hotz and Kilburn (1992) and Hotz and Kilburn (1994)) that among all mothers (including those that do not work) the demand for paid care is sensitive to the price of care. These estimates are not as useful for evaluating the likely impact of government policy since this policy currently affects only working mothers and there is evidence that the response of non-working mothers is considerable (Hotz and Kilburn (1992) and (1994)).

⁵²Hotz and Kilburn 1992; Ribar 1995; Ribar 1992; Blau and Hagy (forthcoming). Studies lying outside the range are Hotz and Kilburn 1994 and Blau and Robins 1988. See Appendix 2 for more details on these studies.

⁵³Hofferth (1995)

of some parents to purchase only a few hours of paid care, rather than no paid care. On the other hand, parents that were already using some paid care may increase the number of hours of paid care in response to the price decrease, adjusting the relative amounts of paid and unpaid care purchased; such behavior would not show up in utilization measures.

Three studies look at the effect of the price of care on the hours of paid care used by working mothers. This measurement considers both the effect caused by switching from zero hours to positive hours, and also changes among those already using positive hours.³⁴ Again, there is a range of estimates; a dollar decrease in the hourly cost of paid care is associated with a 3 to 22 hour per month increase in the use of paid care. Ribar (1992) finds that the increase in hours of paid care and the decrease in hours of unpaid care among working mothers are roughly similar in magnitude. This suggests that the result of price decreases is a relative increase among working mothers in the usage of paid versus unpaid care, rather than an increase in the total amount of non-maternal care used. Such a conclusion is consistent with the finding that hours of work among working mothers appears unresponsive to the price of care.

PUTTING IT ALL TOGETHER

How much will the use of paid care increase in response to a policy that reduces the cost of care? The fact that the supply of child care will respond to meet increased demand without much of a change in the price of care suggests we can consider a subsidy as translating almost dollar for dollar into a decrease in the price to the consumer in the long run.

As an example, consider the effect of a 20 percent subsidy for child care expenses. Our analysis below suggests that a 20 percent reduction in the cost of paid care would result in 500,000 to 1.3 million more children under 6 with employed mothers using paid care. If the 20 percent subsidy were applied just to mothers below 200 percent of poverty, the result would be 124,000-318,000 more low income children under 6 in paid care.

Increases in the use of paid care by working mothers with young children³⁵

³⁴See Hotz and Kilburn (1992), Ribar (1992) and Kimmel (1992).

³⁵Throughout this section, 'young children' are defined as those under 6. We have chosen to base this analysis on the responses of mothers with children under 6 because almost two-thirds of the children served by CCDBG-funded child care were under 6, according to the most recent available data (Child Care Bureau 1997). In so far as subsidies are provided to mothers with children above 6, the total response would be larger than that estimated here. All data are based on tabulations from the 1993 SIPP unless otherwise indicated.

About 9.4 million mothers with children under 6 (56 percent of mothers with children under 6⁵⁶) worked full or part time in 1994. A 20 percent decrease in the cost of care is associated with a 4 to 16 percent increase in the probability that a mother works. In other words, between 380,000 and 1.5 million more mothers with children under 6 would take a job in response to this decrease in the cost of care.⁵⁷

In addition to this employment effect, the 20 percent decrease in the price of paid care would also have an effect on the demand for paid care among working mothers. A 20 percent decrease in the price of paid care is associated with a 3.8 percent increase in demand for paid care among working mothers. In other words, the percent of working mothers with young children who use paid care would increase from 51 percent to 53 percent.⁵⁸

Combining these two estimates, a 20 percent decrease in the price of care would increase the number of working mothers with young children who use paid care by 380,000 to 1 million.⁵⁹ Since families who have children under 6 have on average 1.3 children under 6, this means that a 20 percent decrease in the cost of care will be associated with an increase of 500,000 to 1.3 million more children using paid care.

Breaking down this effect

How much of the increase in working mothers' use of paid care is due to an increase in maternal employment, and how much is due to an increase in the working mothers' average propensity to use paid care? It depends on what the employment response is assumed to be. When the lower bound of the employment response is used, a little over half of the increase in young children in paid care can be attributed to mothers entering employment, without a change in the average propensity to use paid care. When the upper bound of the employment response is used, about 80 percent of the increase is due to mothers entering employment.

⁵⁶Tabulations from March 1995 CPS.

⁵⁷The following calculations apply: A 4 percent (respectively, 16 percent) increase in the probability the mother works brings the probability that the mother works from 56 percent to 60.3 percent (65 percent). Since the total number of mothers with children under 6 is 16.7 million, the resultant 2.3 (9) percentage *point* increase in the probability that the mother works is equivalent to 380,000 (1.5 million) more mothers working.

⁵⁸The 3.8 percent increase is an average of the 3 and 4.6 percent increases from the lower and upper bound estimates of the response in paid care use to a change in the price of paid care. Because this range is so small, we take the average rather than reporting upper and lower bounds.

⁵⁹ The calculations are as follows:
 $(0.53 * 9.8) - (0.51 * 9.4) = 380,000$
 $(0.53 * 10.9) - (.51 * 9.4) = 1,000,000$

Increases in the use of paid care by low income working mothers with young children

CCDBG recipients are nearly all below 200 percent of the poverty line. It is therefore worth considering the increase in paid care use from subsidizing mothers below 200 percent of poverty, most of whom are currently not receiving any CCDBG subsidy. Although we lack estimates of the responses of the low-income population to changes in the price of child care, we estimate the employment and paid care utilization from estimates for the general population.

3.1 million mothers below 200 percent of poverty with young children (43 percent of the total number of mothers below 200 percent of poverty with young children) worked full or part time in 1993.⁶⁰ 39 percent of these working mothers paid for care. By a similar set of calculations to the previous ones, a 20 percent decrease in the cost of care for low income families would be associated with an increase of 124,000 to 318,000 more low income young children using paid care.⁶¹ The CCDBG subsidy to families is considerably larger than 20 percent;⁶² larger subsidies would be expected to have even larger effects on maternal employment and use of paid care.

How sure can we be?

The estimates presented here are based on a review of the evidence from numerous economic analyses. These analyses are almost unanimous in their conclusions about whether there is an effect, and the direction of the effect. However there is considerable variation in the magnitude of the effects reported. We present the full range of estimates, and when applicable, a description of where the bulk of the estimates lie. But we are left at best with only a range, and the ability to suggest an upper and lower bound to the effect.⁶³

⁶⁰The 2.6 million is from SIPP 1993 data. The total number is from 1994 CPS.

⁶¹Based on the following calculations: A 4 percent (respectively, 16 percent) increase in the probability the mother works brings that probability from 43 percent to 45 percent (50 percent). Since the total number of mothers with young children below 200 percent of poverty is 7.2 million (CPS March 1995), the resultant 2 (7) percentage *point* increase in the probability that the mother works is equivalent to 122,000 (490,000) more mothers working. In addition the decrease in the price of care would result in 41 percent of these employed mothers using paid child care. Therefore the total increase in the number of these mothers using paid care would be 95,000 to 245,000. With an average of 1.3 young children in such families, we arrive at the number in the text.

⁶²The average weekly cost of care was \$74 in 1993 (Casper 1995), and the average federal subsidy administered through the CCDBG was \$66 in fiscal year 1995.

⁶³ One issue with almost all of these studies is that they predict the hourly price of care using selection correction mechanisms, since data are often available on the price of paid care only for working mothers who purchase care. The instruments used vary across studies, and there

In addition to the lack of consensus among the various estimates, caution is also in order in drawing inference about the likely effects of current policy changes. First, these estimates are of the *average* response to price changes; if the response does not vary linearly with the change in price, our estimates of the response to different price changes will not be accurate. Second, these estimates were made in the pre-welfare reform era. One might expect responses to be different in a world where work requirements are stronger and in which non-employment alternatives may be more limited. And third, the studies reviewed did not generally focus on the low-income population. If we want to estimate the effect of subsidies targeted at this population, we must consider how applicable the results from a broader population are to a low income population.

In general, one might expect the employment responses of low-income families and single mothers to be less responsive to child care prices, as the need for income is greater. However, the studies that looked at such responses found that single and low-income mothers' employment decisions tended to be *more* responsive to the price of care. One plausible explanation is that, under the previous welfare system, low-income single mothers deciding whether or not to take a job had the fall-back option of welfare. Therefore they were more free to choose whether or not work was worthwhile on the basis of child care prices; and we have seen that child care costs are a proportionately larger burden to low-income mothers. But as welfare reform makes non-employment less of an option for these mothers, it is likely that the employment decisions of low-income single mothers would become less sensitive to the price of child care. Indeed, Kimmel (1994) found that controlling for AFDC reciprocity reduces the employment responsiveness of single mothers to the price of child care, and brings it into line with that of married mothers.

Although we might therefore expect that the employment response of the low-income population would be less than that of the general population, we should also expect that the demand for paid care among working women would be more sensitive to the price of care for low-income working women, since the costs represent a larger fraction of their monthly income. On balance then, it is not clear whether the total effect of the price of care on the demand for care (including both the employment effect and the demand effect among working women) would be larger or smaller for low income women compared with the general population. Without any further evidence to guide us, it is simply important to note that this limitation of the evidence should dictate caution in making precise predictions of the effects of subsidies.

POLICIES THAT ADDRESS THE QUALITY OF CHILD CARE

is reason to believe that the results are very sensitive to the choice of instruments (see e.g. the large difference in estimates obtained by Hotz and Kilburn (1992) and Hotz and Kilburn (1994) who use the same data but different instruments and estimating procedures). In general, the results will be affected by whether the instruments are truly exogenous, as well as how correlated they are with the original variable. The variation in the predicted price of care is used to estimate the employment, care, and quality responsiveness to the price of care.

We have reviewed the evidence that the current quality of care may be too low, that high quality child care can have important, positive effects on children, and that substandard care can place children at risk for harm. Here, we consider why the current levels may be too low, and hence how policy can be designed to improve quality. We focus in this section on attributes of care that may be related to child development; the next section considers issues of child health and safety.

Parental demand for quality child care

Evidence suggests that parents do not demand the structural attributes of quality that policy might address. For one thing, the level of trainer education, staff-child ratios, and group size have little effect on provider fees.⁶⁴ In addition, there is evidence that center fees are not responsive to quality as defined by child experience measures.⁶⁵ The fact that the staff-child ratio and the group size do not affect the cost of care is particularly surprising, given that these attributes must affect the marginal cost of providing care. A common interpretation of these findings is that they suggest that parents are not willing to pay for these attributes of quality care.⁶⁶

Thus, even though parents say that they care about quality,⁶⁷ they appear not to be willing to pay for 'quality', at least as researchers have been able to measure it. There are several possible explanations for this finding, although we have little evidence that allows us to choose among them. First, if there are external benefits associated with high quality child care, parents may in fact not demand as high a level of quality as is optimal for their child and society. Some evidence of this is the fact that when parents say they care about the 'quality' of child care, they may in fact be placing the cost and convenience of the care at a higher premium than warm interactions with care givers and other aspects of the child care program that developmentalists believe promote positive outcomes.⁶⁸ A second possible explanation is that parents do care about child care quality that is important for child outcomes and development, but that the attributes that they care about -- and are willing to pay for -- are not the structural attributes that are easily measured and that government policy can target. In other words, parents may choose their child care and pay based on the warmth of the child care provider, the organization of the facility, the structure of the daily routine, or other attributes that these studies do not measure. Third, parents may care about structural attributes of quality, but lack information about these features. And finally, parents may care about these structural attributes of quality, but not be able to afford

⁶⁴Hagy (forthcoming); Blau and Hagy (forthcoming); Walker (1992); Waite et al. (1991).

⁶⁵Cost, Quality & Outcomes Study Team (1995).

⁶⁶Interpretation in Waite et al (1991), Blau (1991) and Helburn and Howes (1996).

⁶⁷See e.g. Cost, Quality & Child Outcomes Study Team (1995) or Kisker and Maynard (1991).

⁶⁸See for example Kisker and Maynard (1991) and Hofferth (1991).

them.

Possible governmental policy responses include information provision, regulation, and subsidies to reduce the price of care. Again, the appropriate policy response depends on the reason that parents do not purchase high quality care.

Effect of subsidies on the quality of care purchased

If the low parental demand for quality child care is due to an affordability issue, or to the existence of external benefits, then policies that reduce the price of child care might induce parents to purchase higher quality care. Empirical evidence is scant, but it suggests that when prices are reduced, parents do not respond by purchasing higher quality care, as measured by structural attributes.⁶⁹ As a result, subsidies alone appear unlikely to increase the demand for structural attributes of child care. Of course, subsidies may allow parents to purchase care with aspects of quality that are difficult to measure — particularly the child experience measures that developmentalists emphasize. However, no evidence is available on this point.

If child care subsidies do not appear to induce parents to purchase higher quality care, perhaps subsidies targeted to high quality care might have an effect. For example, a subsidy might be available only for care that met a certain child-staff ratio or group size. Empirical evidence on the effect of targeted subsidies is limited. One study finds that the implicit price of staff-child ratio does not affect the demand for higher staff-child ratios.⁷⁰

We do know, however, that subsidies that lower the price of child care induce mothers to work, and induce working mothers to purchase more paid care relative to unpaid care. Thus subsidizing child care is likely to result in more non-maternal care, and more paid relative to unpaid care. A comprehensive survey of the literature concludes that there is no evidence that non-maternal child care has adverse effects on children.⁷¹ Furthermore, given the current policy of encouraging mothers to enter or remain in the workforce, such women have little choice but to place their children in non-maternal care. There is little evidence about the relative merits for the child of paid versus unpaid care.

⁶⁹Blau and Hagy (Forthcoming). A problem with drawing conclusions based on this paper is that the data are cross-sectional and if places with lower prices of child care draw in more low income families who cannot afford high quality care, the result would not really illustrate the effect of price reductions on the quality of care purchased by a given family that is already purchasing care. For this, we would need longitudinal data.

⁷⁰Hagy (forthcoming).

⁷¹Hayes et al. (1990).

Effect of regulations on the quality of care

If the low quality of care purchased is a result of information imperfections or the external benefits associated with child care, a possible approach is for the government to regulate the quality of child care. Regulation, if enforceable and binding, is likely to increase the quality of regulated care.⁷² However, regulations are also likely to drive some providers out of the licensed market and raise prices among remaining providers, thus lowering the availability and affordability of regulated care.⁷³ Since compliance with regulations can be costly -- particularly regulations that impose minimum group size or child staff ratios and hence raise the marginal cost of providing child care -- providers will have to raise their prices or suffer profit losses. However, we have seen that parents are unwilling to pay for these attributes, and that they are willing to substitute among modes of care in response to relative price changes. Hence providers will be limited as to how much they can raise their prices. But since most child care providers have very low profit margins,⁷⁴ those that cannot raise their prices may be driven out of business, or at least into the unlicensed sector.

Children whose providers shut down because of regulations, or whose parents switch to another mode of care because the regulated care has become too expensive, do not enjoy improvements in their care quality. However, for children who remain in regulated care, a quality improvement may be enjoyed. Empirical evidence on the relation between quality regulation and costs is scant and inconclusive. Studies have looked at the effects of criminal record checks, child staff regulations, provider education regulations, and group size regulations on the cost of care. The results differ both across and within studies as to whether a given regulation increases, decreases, or has no significant effect on the cost of care⁷⁵. And there is essentially no evidence of the effect of regulations on the use of regulated care. Both issues deserve further study.

We must acknowledge a tradeoff between the gains from regulation in terms of quality

⁷²For example, Cost, Quality & Child Outcomes Study Team (1995) finds that states with more demanding licensing standards have fewer poor-quality licensed centers, and that centers that comply with additional standards beyond those required for licensing provide higher quality services. Here, quality is measured in terms of 'child care experience' Also Howes et al. (1995) find that regulations in Florida on staff-child ratios and provider education improve both child experience measures of quality and child development.

⁷³Chipty and Witte (1997) find that minimum standards regulations increase the probability that providers exit certain markets (e.g. care for certain age groups).

⁷⁴Cost, Quality & Child Outcomes Study Team (1995).

⁷⁵Ribar (1995), Chipty (1995), Hotz and Kilburn (1994). Although such regulations may translate into higher costs to parents, they do not appear to improve the wages of child care workers (Blau 1993, Blau 1992).

improvements in the regulated sector and the likelihood of increased child care costs and substitution out of regulated care, which could adversely affect the quality of care some children receive. Different regulations are likely to have different effects on costs. It is probable that some regulations would have net benefits, but each should be evaluated separately.

Information provision and networks

Another possible remedy to information problems are information and referral services to help parents make better decisions. The government could either serve as the provider of information or encourage private sector agencies to collect and disseminate the information. However, the high turnover rates of providers and the lack of effort by many family day care providers to find clients could make it difficult to provide and maintain comprehensive and accurate lists of providers in each neighborhood.⁷⁶ It is unclear whether unregulated providers will be forthcoming in response to requests to register with an information agency. If providers are responsive and comprehensive lists are maintained, this would be a useful service to the extent that the information agency is more informed than potential consumers about the quality of care offered at each provider; given the concern about whether collectable indicators are indicative of quality, this deserves further consideration. Furthermore, if there is a dearth of demand for quality care, the benefits from providing information are somewhat decreased. However, if this information stimulates demand for better quality care, it may help alleviate the current quality problems.

Effects of policies aimed at influencing child care providers

The qualifications and behavior of child care providers affect both structural and child experience measures of child care quality. Therefore another important policy lever that the government could potentially use to improve the quality of child care is policy that affects child care providers. Child care providers' education and behavior are aspects of child care quality. In addition, the continuity of child care received is thought to be an important aspect of the quality of care.⁷⁷

Child care providers are mostly women. They tend to have low levels of education and high turnover rates.⁷⁸ Their wages are very low compared to other women and there is some evidence that they receive lower wages than similar female workers in other sectors.⁷⁹ One reason for the low levels of education may be that child care providers appear not to receive a 'return' to

⁷⁶Walker (1991).

⁷⁷Phillips (1995).

⁷⁸Blau 1992; Walker 1992.

⁷⁹Blau 1993; Cost, Quality & Outcomes Team Study 1995.

education in the form of higher wages.⁸⁰ In addition, their low wages may be at least partly responsible for the high levels of turnover, which in turn disrupts the continuity of care.

Possible interventions include subsidizing or regulating child care providers' wages, subsidizing or providing child care training, or setting minimum standards for child provider education. Given the low profit margins of centers⁸¹, regulations that raise wages are likely to force some centers to shut down or to raise their costs. In addition, the low wages of child care providers may be best met through more general policies aimed at raising wages at the bottom of the wage distribution.

Given that child care providers appear not to receive a wage premium from investments in education, policies that set higher minimal education requirements will likely result in a decrease in the number of (legal) child care providers, at least in the short run.⁸² Government provision or subsidizing of training for child care workers may be a more promising route. Financial constraints can make it difficult for workers to invest in needed skills and the government therefore currently subsidizes training for some adult workers. The high turnover among child care providers, however, can reduce the return to the government on its investment in provider education.

ADDRESSING CONCERNS ABOUT CHILD HEALTH AND SAFETY

In addition to the impact of high quality child care on child development, we have also seen that children's health and safety are currently endangered in some care facilities. This is an area of grave concern, with potentially high costs to the children and to society. The health and safety problems may result from an information problem or limited ability of parents to monitor quality. Another possibility is that parents are aware of the health and safety problems but cannot afford better care. If the issue is an information one, provision of information or regulations that impose minimum standards combined with monitoring to ensure that these standards are met are potential solutions. Such regulations again have the potential to drive up the cost of care, but they can plausibly be expected to have less of an effect on cost than minimum staff/child ratios or group size, which directly increase the marginal cost of providing care. However, if ensuring basic health and safety does increase the cost of care, and hence parents may not be able to afford care that meets these standards, subsidies for care that meets the standards could also be useful.

⁸⁰Walker 1992; Blau 1992.

⁸¹Cost, Quality & Outcomes Team study 1995.

⁸²Of course, the longer run effects will depend on how responsive the supply of *skilled* child care labor is, since the decrease in supply will drive up wages for skilled child care workers. There is as yet no research on this question.

There is currently no available evidence of the effect of minimum health and safety regulations on the cost of care, or of the effect of subsidies on the safety of care purchased.

THE NEED FOR MORE RESEARCH

Employment and care responses to the price of child care

There is a little evidence on the employment responses of low income parents. There is a critical need for such evidence since direct federal subsidies are targeted to this group. Furthermore, there is a need for studies of employment responses of low income families in the new environment created by welfare reform. Random assignment studies are a promising approach. Because subsidies are limited, and waiting lists tend to develop,⁸³ random assignment to eligible parents would enhance our ability to study the effects of subsidies on parental choices. Another unresolved question is to what extent working mothers respond to subsidies by substituting paid for unpaid care; an investigation of this issue would require longitudinal data. Finally, there is little evidence on the effect of the cost of care on the demand for quality. Evidence on this effect is important in understanding whether child care subsidies will induce parents to purchase higher quality care.

The link between child care quality and child outcomes

Although there is ample evidence that high quality paid child care can benefit children, there is a need for more information on the relationship between specific attributes of care -- or groups of attributes -- and child outcomes. We lack information on the magnitude of the effect of changes in measured inputs on child outcomes, on the ways in which improving one attribute of care may have implications for the effects of other attributes, and on where to draw the threshold for acceptable and unacceptable levels of different attributes of care. It is important that research on such topics properly controls for family inputs and uses representative samples.⁸⁴

The existing studies have looked at variations in quality among paid care facilities. Yet we know that one of the effects of child care subsidies is to induce an increase in paid relative to unpaid care. We have no information on the developmental effects of paid versus unpaid care, or even on their relative quality. Finally, there is a need for more research on the effects of child care on *low income* children as compared with the general population of children.⁸⁵

⁸³See e.g. Berger and Black (1992) for evidence of waiting lists with one subsidy program.

⁸⁴Hayes et al (1990)

⁸⁵Phillips and Bridgman (1995).

Effects of regulation

Very little work has been done on the effect of regulation -- and, more importantly, of different types of regulation -- on the child care market. We lack information on how regulation of different structural attributes of care affects the supply of regulated care; for instance, do providers leave, or enter, the regulated child care market in response to regulation? We also lack information on the effect of regulations on the prices charged by child care providers. And finally, we lack information on how regulations affect parents' use of regulated care.

Information on unregulated child care

Information about the unregulated child care sector is, not surprisingly, much less available than information about regulated providers. But it is important to get a better sense of this sector. As noted previously, CCDBG subsidies can go to unregulated providers, which in some states could be a family day care home with up to 12 children.⁴⁶ We lack information on the quality of this care, and on how responsive its supply is to changes in demand. Since more stringent regulations may result in regulated providers moving to the unregulated sector, information on this sector is critical for a complete analysis of the effect of regulations.

SUMMARY

Maternal employment has been rising over the last few decades and with it, the use of non-maternal child care, particularly paid child care. There is no reason to expect a change in this trend, and as welfare reform moves mothers into employment, the demand for child care services is likely to grow. Child care costs place a large financial burden on those without access to subsidized care and many low income working families receive little or no government subsidies for child care expenditures. There is also reason to be concerned about the quality of care.

We discussed three possible motivations for intervention in the child care market: external benefits, information imperfections, and redistribution. What can we say of the relative merits of different policy tools in meeting these different goals?

Care that does not provide for basic health and safety of children can have large costs to these children, their parents, and society. Potential policy responses include providing parents with information about the safety features of different care options, and enforcing stronger minimum standards in licensed care settings. If minimum standards drive up the cost of care, subsidies to low income working parents for care that meets the standards might also be needed.

In addition, there is substantial evidence that high quality child care can have a positive impact on child development. But we lack information on the precise nature and the magnitude of the

⁴⁶Child Care and Development Block Grant Act Section 658E.

link between child care attributes and child outcomes; this makes it difficult to design policy to promote the use of child care with external benefits. Subsidies, even those tied to particular aspects of care, do not appear likely to increase the purchase of 'high quality care', at least as we can measure it. Subsidies for paid child care are likely to induce working parents to use relatively more paid care. The relative quality of paid and unpaid care, however, is not well understood. Regulations can serve to increase quality, but the likely increases in costs will induce substitution away from regulated care. However, we lack information on the magnitudes of the various effects of regulations. Subsidizing provider training may also increase quality, and is unlikely to increase costs; however the high rate of turnover among child care providers raises concerns about the return on subsidizing investments in provider education.

There is also evidence that parents lack the information necessary to make appropriate selections of child care for their children. The government could serve a useful role in directly providing this information, or in encouraging private sector agencies to do so. Any increases in our knowledge about the links between care and outcomes would enhance the government and the private sector's ability to provide useful information. There is also some evidence that regulations that establish minimum quality levels help overcome the information gap, although potentially they have the downside of increasing the cost of care.

Finally, from a redistributive perspective, we have seen that child care costs impose a substantial burden on working families, particularly on low-income working families. Policies that make child care more affordable for working parents can help alleviate this burden. Policies targeted to the low income population complement other efforts to encourage work, since mothers' work decisions are responsive to the price of care. Such policies also seem likely to increase the use of paid care among working mothers, but not the amount of non-maternal care among working mothers.

Appendix I. The effect of child care prices on maternal employment (all effects statistically significant unless indicated)

A. Studies that use an estimation of child-care costs

Study (year)	Data source	Group studied	Estimation procedure	Measure of labor supply	Measure of cost of child care	Estimated elasticity of employment with respect to child care costs
Blau and Hagy (forthcoming)	1990 NCCS and 1990 PCS	Married and single mothers with children under 7 not in school	Multinomial logit.	Whether mother is employed	Uses data on fees to estimate hourly fees	-0.20 (calculated by computing the elasticity for each individual and then averaging over the sample.) Significance cannot be determined from available information.
Blau and Robbins (1988)	1980 EOPP	Married mothers with at least one child under 14	Multinomial logit	Mother does not work versus four combinations of mother working with purchased care or not, other relatives working or not	Average child-care expenditures among families in the community who purchased care	-0.38 (average price elasticity of employment over a range of examined child care costs) Significance cannot be determined from available information.
Connelly (1992)	Wave 5 of 1984 SIPP	Married mothers with children under 13	Probit	Employed or not	Selectivity-corrected predicted hourly costs from employed who purchase care	-0.20 (calculated at means)
Ribar (1992)	Wave 5 of 1984 SIPP	Married mothers with children under 6	Simultaneous maximum likelihood probit of labor force participation and tobit of demand for paid and unpaid child care services	ditto	ditto	-0.74 (calculated at means)
GAO (1995)	Urban Institute's 1990 National Child Care Survey and Low-Income Sub-study	Mothers in sample	Probit	ditto	ditto	-0.5 for poor mothers, -0.34 for near-poor mothers, and -0.19 for non-poor mothers. (Calculated at means)

Ribar (1995)	1984 SIPP.	Married women with children under 15	Maximum likelihood. Estimates a structural modal of hours of work	ditto	ditto	-0.09 (under 15). -0.09 (under 6) Elasticities are means of effects evaluated at each observation. Significance cannot be determined from available information.
Kimmel (1995)	1987 and 1988 SIPP data	Single mothers in poverty	Probit	ditto	ditto	-0.346. Also estimated elasticity separately for white single mothers in poverty (-1.362) and black single mothers in poverty (-.345; not statistically significant)
Cleveland et al (1996)	1988 Canadian National Child Care Survey	Families with young children	Probit	Engaged in paid employment or not	ditto	-0.388 (evaluated at means)
Averett et al. (1997)	1986 NLS-Y	Married mothers with at least one child under age 6	Dual-error model	Annual hours of work	ditto	-0.78 (evaluated at means of data)

B. Studies that use an exogenous source of variation in the cost of child care

Year (year)	Data Source	Group studied	Source of variation in child care costs	Measure of labor supply	Measure of cost of child care	Estimate of employment effect
Gerber and Berk (1992)	Telephone survey	Low-income single mothers	Those receiving day care subsidy in two Kentucky programs versus those on subsidy waiting list.	Whether mother employed or not	Dummy for receipt of subsidy (amt of subsidy varies with income)	Attribute an increase in employment of 12% to program
Stafsson and Ford (1992)	Swedish data set plus telephone survey	Families in different Swedish communities	Exogenous variation due to local government setting subsidy rates for public child care.	Whether mother works 'substantially' (more than 30 hours)	Locally-set price (per month) of public child care	Estimated mean elasticity of employment with respect to child care cost -1.88

Lowitz et al. (2)	NLS-Y	First-time mothers	Variation among states and over time in state and federal income tax credits for child care	Whether mother is employed when child is 3 months old, and whether mother is employed when child is 24 months	Subsidy available through state and federal income tax credits; to avoid endogeneity issues, assumes woman works full-time at her predicted wage	Greater tax credits increased early return to work (w/in 3 mos) but had little effect on employment of women with older children
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Appendix 2: Effect of child care price on use of market care, given maternal employment¹

Study	Data and Methods	Measures of price of care and mode of care.	Price elasticity of market care utilization conditional on employment ²
Hotz and Kilburn 1992	1986 NLS72. Black and white mothers with preschool age children. Probit	Parental versus non-parental care. Selectivity-corrected predicted hourly price of non-parental care	-0.17 to -0.20 depending on specification. Significant.
Hotz and Kilburn 1994	1986 NLS72. Black and white mothers of pre-school age children. Maximum likelihood switching regression model.	Parental versus non-parental care. Selectivity-corrected predicted hourly price of non-parental care (using different instruments from 1992 paper).	-1.7. Significant.
Cleveland et al (1996)	1988 Canadian National Child Care survey. Families with young children. Probit.	Whether family purchases market care or non-market care at zero cost. Selectivity-corrected predicted hourly price of care from employed who purchase care.	-1.056. Single coefficient used in computing elasticity is significant.
Ribar 1995	1984 SIPP. Married women with children under 15. Maximum likelihood.	Direct report of whether family pays for care. Selectivity-corrected predicted hourly price of care from employed who purchase care.	Elasticity for paid care utilization is -0.608 or -0.42 depending on specification. When look at moms with kids under 6, elasticity drops to -0.235 or -0.224 depending on specification. Can't determine significance.
Blau and Robins (1988)	1980 EOPP. Married mothers under 45 with children under 14. Multinomial logit.	Market versus non-market care; care coded as market if provided by a non-relative or in a group facility or day care center, or if family reports any direct expenditure on child care. The weekly cost of market care reported by families is used to construct the site-average weekly child care costs; these are divided by 30 to estimate hourly price of care.	-1.17. Can't determine significance

Blau and Hagy (forthcoming)	1990 NCCS and PCCSS. Women with children under 7, not in school. Multinomial logit.	Whether family pays for care or not. Estimates hourly fees using regression results.	-.15. Can't determine significance
Ribar (1992)	1984 SIPP. Married females with children 0-6. Tobit	Paid versus unpaid care. Selectivity-corrected predicted hourly costs from employed who purchase care.	-.210. Underlying coefficients significant.

1. Elasticities for Blau and Robins (1988), Ribar (1992) and Blau and Hagy (forthcoming) are all taken from Blau (under review) who recalculates the elasticities using variable means from the data in Blau and Hagy (forthcoming).

2. All elasticities calculated at sample means except for Ribar (1995) who calculates mean of elasticities for each individual.

REFERENCES

- American Public Welfare Association. 1997. 'The Child Care Challenge: States Leading the Way.'
- Averett, Susan L., H. Elizabeth Peters, and Donald M. Waldman. 1997. 'Tax Credits, Labor Supply, and Child Care.' *Review of Economics and Statistics*, February.
- Beli, David, Dennis Gleibek, Alice Mercer, Robi Phifer, Robert Guintier, A. Cohen, Eugene Epstein, and Mano Narayanan. 1989. 'Illness Associated with Child Day Care: A Study of Incidence and Cost.' *American Journal of Public Health*, Vol 79, No. 4.
- Berger, Mark C. and Dan A. Black. 1992. 'Child Care Subsidies, Quality of Care, and the Labor Supply of Low-Income, Single Mothers.' *Review of Economics and Statistics*, November.
- Blau, David and Alison Hagy. (Forthcoming) 'The Demand for Quality in child Care'. *Journal of Political Economy*.
- Blau, David. 1993. 'The Supply of Child Care Labor.' *Journal of Labor Economics*, 1993, vol 11, no.2
- Blau, David. 1992. 'The Child Care Labor Market.' *Journal of Human Resources*, Winter.
- Blau, David (1997). 'The production of quality in child care care centers.' *Journal of Human Resources*. Spring.
- Blau, David. (Under review, December 1996.). 'Child Care policy, employment of low-income mothers, and child welfare.'
- Blau, David M. and Phillip K. Robins. 1988. 'Child Care Costs and Family Labor Supply.' *Review of Economics and Statistics*, August.
- Bureau of Labor Statistics (1996). Marital and Family Supplement to March Current Population Survey.
- Casper, Lynne M. and Martin O'Connell 1997. 'State Estimates of Organized Child Care Facilities'. Paper presented at the annual meeting of the Population Association of America. U.S: Bureau of the Census.
- Casper, L. M. 1995. *What Does it Cost to Mind Our Preschoolers?* U.S. Bureau of the Census, Current Population Reports, P-70, no.52. Washington, DC.
- Casper, L. M. 1996. *Who's Minding Our Preschoolers?* U.S. Bureau of the Census, Current

Population Reports, P-70, no.53. Washington, DC

Chaplin, Duncan and Sandra Hofferth and Douglas Wissoker. (1995) 'Price and Quality in Child Care Choice: A revision.' *Journal of Human Resources*.

Chaplin, Duncan and Sandra Hofferth. 1995. 'Hours of Employment and Child Care.' *unpublished manuscript*.

Child Care Bureau (1997). 'Federal Child Care Programs in FY 1995.'

Child Care and Development Block Grant Act.

Children's Foundation (1997). 'The 1997 FCC Licensing Study.'

Chipty, Tasneem and Ann Witte (1997). 'An Empirical Investigation of Firms' Responses to Minimum Standards Regulations.' *NBER Working Paper 6104*.

Chipty, Tasneem (1995). 'Economic Effects of Quality Regulations in the Day-Care Industry.' *American Economic Review, Papers and Proceedings*. May.

Cleveland, Gordon, Morley Gunderson and Douglas Hyatt. 1996. 'Child care costs and the employment decision of women: Canadian evidence.' *Canadian Journal of Economics*, February.

Cohn, E., and T. Geske. 1990. *The Economics of Education*. 3d ed. Elmsford NY: Pergamon Press.

Connelly, Rachel. 1992. 'The Effect of Child Care Costs on Married Women's Labor Force Participation.' *Review of Economics and Statistics*, February.

Cost, Quality & Child Outcomes Study Team. 1995. 'Cost, Quality, and Child Outcomes in Child Care Centers, Executive Summary' second edition. Denver: Economic Department, University of Colorado at Denver.

Council of Economic Advisers (1997). 'The First Three Years: Investments that Pay.'

GAO. 1995. 'Child Care Subsidies Increase Likelihood that Low-Income Mothers Will Work.' GAO/HEHS-95-20.

Gornby, Deanna, Mary Lerner, Carol Stevenson, Eugene Lewit and Richard Behrman (1995). 'Long Term Outcomes of Early Childhood Programs, Analysis and Recommendations' in *The Future of Children: Long-term outcomes of early childhood programs*. Center for the Future of Children.

Gustafsson Siv, and Frank Stafford. 1992. 'Child Care Subsidies and Labor Supply in Sweden.' *Journal of Human Resources*, Winter.

Hagy, Alison. (forthcoming) 'The Demand for child care quality: an hedonic price theory approach.' *Journal of Human Resources*.

Hayes, Cheryl, John Palmer and Martha Zaslow (eds). 1990. 'Who Cares for America's Children? Child Care Policy for the 1990s.' National Academy Press: Washington DC.

Helburn, Suzanne and Carollee and Howes (1996). 'Child care cost and quality.' In 'The Future of Children: financing child care,' Center for the Future of Children.

Hernandez, D. 1995. 'Changing Demographics: Past and Future Demands for Early Childhood Programs'. In 'The Future of Children: long-term outcomes of early childhood programs,' Center for the Future of Children.

Hofferth, Sandra. 1991. National Child Care Survey, 1990. Washington DC: The Urban Institute.

Hofferth, Sandra. (1996). 'Child Care in the United States Today.' In 'The Future of Children: financing child care,' Center for the Future of Children.

Hofferth Sandra (1995). 'Caring for Children at the Poverty Line. *Children and Youth Services Review* 17. (1/2).

Hotz, V. Joseph and M. Rebecca Kilburn (1992). 'Estimating the Demand for Child Care and Child Care Costs: Should We Ignore Families with Non-Working Mothers?' unpublished manuscript, University of Chicago. February.

Hotz, V. Joseph and M. Rebecca Kilburn (1994). 'Regulating Child Care: The effect of State Regulations on Child Care Demand and Its Cost.' unpublished manuscript.

Howes, Carollee, Ellen Smith and Ellen Galinsky. 1995. 'The Florida Child Care Quality Improvement Study: Interim Report.' Families and Work Institute.

Kimmel, Jean. 1995. 'The Effectiveness of Child Care Subsidies in Encouraging the Welfare-to-Work Transition of Low-Income Single Mothers.' *American Economic Review. Papers and Proceedings*, May.

Kimmel, Jean. 1994. 'Child Care Costs as a barrier to employment for single and married mothers.' W.E. Upjohn Institute, draft.

Kimmel, Jean. 1992. 'Child Care and the Employment Behavior of Single and Married Mothers.'

W.E. UpJohn Institute for Employment Research, working paper 92-14.

Kisker, Ellen and Rebecca Maynard (1991) 'Quality, Cost, and Parental Choice in Child Care.' In Blau, David (ed) The Economics of Child Care.

Leibowitz, Arleen, Jacob Klerman, and Linda Waite. 1992. 'Employment of New Mothers and Child Care Choice.' *Journal of Human Resources*, Winter.

Michalopoulos, Charles, Philip K. Robins, and Irwin Garfinkel. 1992. 'A structural Model of Labor Supply and Child Care Demand.' *Journal of Human Resources*, Winter.

National Association for the Education of Young Children (1991). 'The demand and supply of child care in 1990, joint findings from the national child care survey, 1990 and the profile of child care settings.' Washington DC.

Phillips Deborah (1995). 'Child Care for Low Income Families: Summary of Two Workshops.' National Research Council.

Phillips Deborah and Anne Bridgman (eds.) 1995. 'New Findings on Children, Families, and Economic Self-Sufficiency: Summary of a Research Briefing.' National Academy Press.

Poterba, James. 'Government Intervention in the Markets for Education and Health Care: How and Why?' in Victor Fuchs (ed) *Individual and Social Responsibility: Child Care, Education, Medical Care, and Long-Term Care in America*.

Ribar, David. 1995. 'A structural model of child care and the labor supply of married women.' *Journal of Labor Economics*, vol 13, no.3

Ribar, David C. 1992. 'Child Care and the Labor Supply of Married Women: Reduced Form Evidence.' *Journal of Human Resources*, Winter.

Rosen. Harvey. 1995. *Public Finance*. Irwin. 4th edition.

U.S. House of Representatives. 1996. '1996 Green Book: Background Materials and data on programs within the jurisdiction of the committee on ways and means.' Washington DC: U.S. Government Printing Office.

U.S. Department of Education (1990). 'A Profile of Child Care Settings: Early Education and Care in 1990; Executive Summary). Ellen Kisker, Sandra Hofferth, Deborah Phillips and Elizabeth Farquhar.

U.S. Department of Education. 1995. National Center for Education Statistics, National Household Education Survey.

Waite, Linda, Arleen Leibowitz and Christina Witsberger. 1991. 'What parents pay for: child care characteristics, quality, and costs.' *Journal of Social Issues*, Vol 47, No 2.

Walker, James. 1991. 'Public Policy and the Supply of Child Care Services.' In The Economics of Child Care, edited by David Blau. New York: Russell Sage Foundation.

Walker, James. 1992. 'New Evidence on the Supply of Child Care.' *Journal of Human Resources*, Winter.

EXPLAINING TRENDS IN THE GENDER WAGE GAP

June 1998

A Report by
The Council of Economic Advisers

EXECUTIVE SUMMARY

- Although the gap between women and men's wages has narrowed substantially since the signing of the Equal Pay Act in 1963, there still exists a significant wage gap that cannot be explained by differences between male and female workers in labor market experience and in the characteristics of jobs they hold.
- After hovering at about 60 percent since the mid-1950s, the ratio of women's to men's median pay began to rise in the late 1970s and reached about 70 percent by 1990. The gender pay ratio is currently on the rise again, surpassing 75 percent in 1997.
- The gender gap has narrowed faster among younger women and among married women with children. The data that permit disaggregation by demographic groups show the overall gender pay ratio rising from 57 percent in 1969 to 68 percent in 1996 (the last year for which these data are available). In contrast, among women under 40, the gender pay ratio rose from 58 percent in 1969 to 74 percent in 1996. Among married women with children, the gender pay ratio (relative to all male workers) rose from 53 percent in 1969 to 68 percent in 1996. Relative to all male workers, wage gains have been faster for non-Hispanic black and non-Hispanic white women than for Hispanic women.
- The most recent detailed longitudinal study found that in the late 1980s about one-third of the gender pay gap was explained by differences in the skills and experience that women bring to the labor market and about 28 percent was due to differences in industry, occupation, and union status among men and women. Accounting for these differences raised the female/male pay ratio in the late 1980s from about 72 percent to about 88 percent, leaving around 12 percent as an "unexplained" difference.
- Over the last twenty years, increases in women's accumulated labor market experience and their movement into higher-paying occupations have played a major role in increasing women's wages relative to men's. Changes in family status, in industry structure and in unionization also worked to narrow the gender pay gap, while increasing economic benefits from skills and increasing wage inequality would have, by themselves, widened the pay gap. In addition, the decrease in the pay gap that remains "unexplained" after controlling for measured differences between men and women has been a large contributor to the narrowing of the pay gap.
- The evidence is that labor market discrimination against women persists, although it is difficult to determine precisely how much of the difference in female/male pay is due to discrimination and how much is due to differences in choices or preferences between women and men. One indirect and rough measure of the extent of discrimination remaining in the labor market is the "unexplained" difference in pay. Some studies have tried to measure discrimination directly by looking at pay differences among men and women in very similar jobs or by comparing pay to specific measures of productivity. These studies consistently find evidence of ongoing discrimination in the labor market and support the conclusion that women still face differential treatment on the job.

I. INTRODUCTION

Thirty five years ago, President Kennedy signed the Equal Pay Act into law, making it illegal to pay men and women employed in the same establishment different wages for "substantially equal" work¹. At that time, the ratio of women's to men's average pay was about 58 percent.² Although the gap in average pay between men and women has decreased since then, the "gender gap" in pay persists. Decreases in labor market discrimination towards women may be partly responsible for these improvements, but continued discrimination may also contribute to the remaining earnings gap.

The long-standing differences in the average pay of men and women in the labor market are the result of many forces, including differences in the characteristics (such as average labor market experience) that men and women bring to their jobs, differences in the characteristics of the jobs in which men and women work, and differential and discriminatory treatment of women by employers and co-workers.

All of these factors interact in complex ways. Hence it is difficult to determine precisely how much of the difference in female/male pay is due to discrimination and how much is due to differential choices and preferences by female workers. For example, if women have less experience than men, they may choose occupations where extensive experience is less necessary. If women consistently choose different occupations than men, stereotypes about women's abilities may be reinforced and discriminatory behavior by employers may be perpetuated. If employers make it difficult for women to enter certain occupations, women's incentives to invest in training for those occupations may be reduced.

Women and men differ, both in terms of the jobs in which they work and in their responsibilities for children (which affect work at home and in the market). Nevertheless, over time, women's skills have become more similar to men's. The occupations and industries in which men and women work have also become more similar. But, as of the late 1980s, the date of the most recent detailed study, there were still large differences between men and women in personal and job characteristics that influenced their relative wages. And even when all of these differences were taken into account, a significant gender wage gap remained. As we discuss below, this suggests that there is continuing discrimination against women in the labor market.

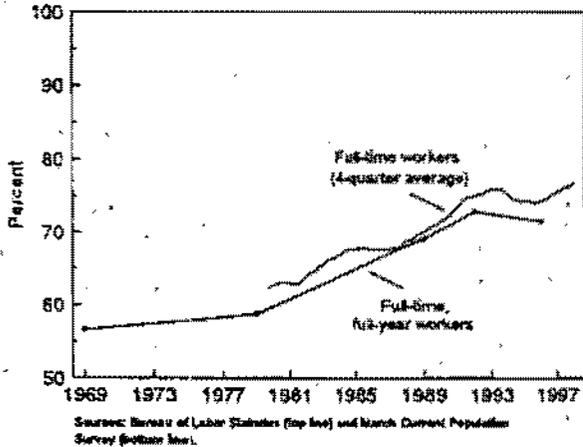
¹*Schultz v. Wheaton Glass Co.*, 421 F.2d 259 (3rd Cir. 1970).

²Based on calculations from the March 1964 Current Population Survey (Bureau of the Census). Data are for weekly wages of full-time, year-round workers aged 25-64.

II. TRENDS IN THE GENDER WAGE GAP

Trends in the overall gap

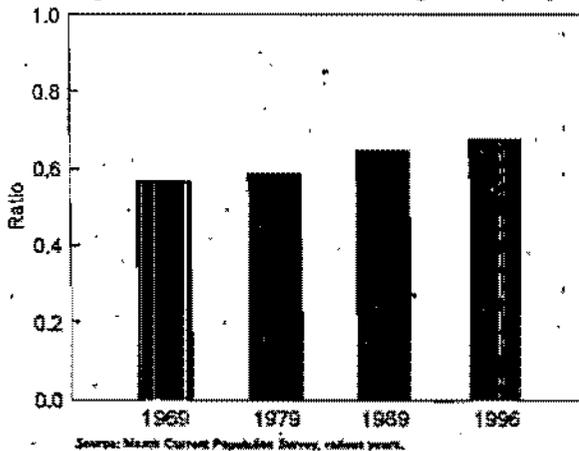
Figure 1. Median Weekly Earnings of Females Relative to Males



After hovering around 60 percent since the mid-1950s³, the ratio of women's to men's pay began to rise in the late 1970s, surpassing 70 percent by 1990 (see bottom line of figure 1). After a pause in the mid-1990s, the gender pay ratio has begun to rise again, reaching more than 75 percent in 1997 (see top line of Figure 1).⁴ Although the size of the gender pay gap varies across countries, many industrial economies have seen a narrowing of the gap over the last two decades.⁵

Trends in the gender gap by demographic characteristics

Figure 2. Ratio of Female/Male Average Weekly Wages



In order to compare trends in the gender pay ratio across different demographic groups, a data series is needed that permits such disaggregation. Figure 2 shows the aggregate gender pay ratio in this data series, based on a

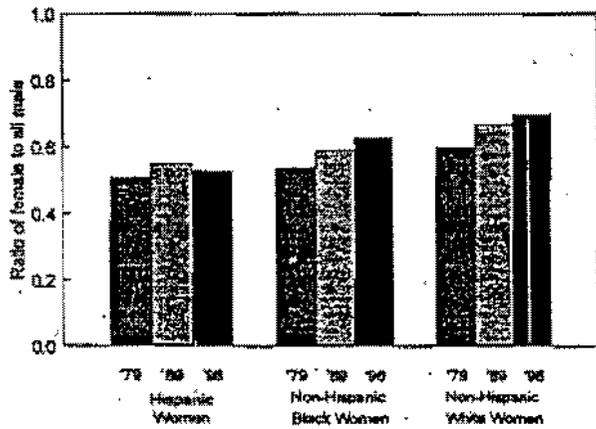
³Goldin, Claudia. 1990. *Understanding the Gender Gap*. New York: Oxford University Press.

⁴The data shown in the top line of the figure are ratios of median weekly wages for full-time workers aged 25 to 54, published quarterly by the Bureau of Labor Statistics since 1979. The bottom line shows the ratios of median weekly wages of full-time, year-round workers aged 25 to 54, calculated from the March Current Population Survey data files. Unfortunately, the former series is not available before 1979, and the latter series is not currently available after 1996.

⁵Waldfogel, Jane. 1998. "Understanding the 'Family Gap' in Pay for Women with Children." *Journal of Economic Perspectives* 12(1):137-56.

slightly different group of workers.⁶ Although the level of the gender pay gap in Figure 2 is slightly different from that in Figure 1, the overall trends are similar.

Figure 3. Ratio of Female/Male Average Weekly Wages by Race and Ethnicity

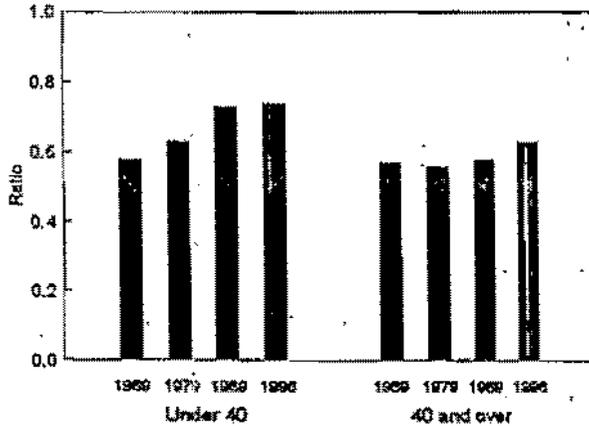


Source: March Current Population Survey, various years.

Figure 3 shows pay ratios for women workers by race and ethnicity, relative to all male workers. Relative to all male workers, wage gains have been faster for non-Hispanic black and non-Hispanic white women than for Hispanic women.

gap was similar for those under and over age 40.

Figure 4. Ratio of Female/Male Average Weekly Wages by Age



Source: March Current Population Survey, various years.

Women of all ages and education levels experienced gains in pay relative to their male counterparts. The gender gap varies little across education groups⁷ but is substantially smaller for younger women (see figure 4). This was not always the case. In 1969, the gender gap was similar for those under and over age 40. But the gap narrowed much faster for younger women. The larger gap among older women may be a generational effect, indicating that the current younger cohort of women has made choices more similar to those of men and/or is not facing as much discrimination as the cohort before them. Alternately, the gap for older women could reflect growing differences in accumulated work experience as women age or a "glass ceiling" effect by which women achieve smaller pay gains over time. Indeed, the bipartisan Federal Glass Ceiling Commission found that "in the private sector, equally qualified and similarly situated citizens are being denied equal access to advancement into senior-

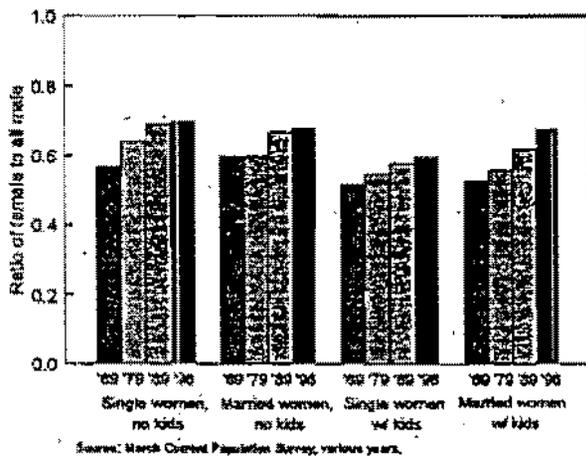
level management on the basis of gender, race, or ethnicity."⁸

⁶Data in figures 2 through 5 are based on tabulations from various years of the March Current Population Survey (Bureau of the Census). The data refer to full-time, year-round workers aged 25 to 64.

⁷Blau, Francine. 1998. "Trends in the Well-Being of American Women, 1970-1995." *Journal of Economic Literature* 36: 112-65.

⁸U.S. Department of Labor Glass Ceiling Commission. 1995. "Good for Business: Making Full Use of the Nation's Human Capital," March. Washington DC.

Figure 5. Ratio of Female/Male Average Weekly Wages by Family Status



Traditionally, women with children have had lower wages than childless women. However, gains in average pay have been greatest for married women with children (see figure 5). It is worth noting that this is also the group of women among whom labor force participation has increased the most since 1970. Although their pay relative to men has climbed, single mothers continue to have the lowest average rate of pay.

Gender gaps in fringe benefits

The male-female difference in wages is also visible in fringe benefits, which currently make up about 30 percent of total compensation. As with wages, some of this gap is related to differences between men and women in human capital and job characteristics, and some remains unexplained. Among younger workers, the gender gap in total compensation appears to be smaller than the gap in wages.⁹ Much of the female-male gap in pension coverage can be accounted for by differences in their labor market histories and is much smaller among younger workers. In addition, among those who have pensions, the gender gap in benefit levels is largely explained by gender differences in income.¹⁰ Therefore, lower wages, and hence lower lifetime earnings, result in lower pension benefits upon retirement. For some women, the lack of coverage or lower benefit levels may not be a problem, since they receive benefits through a spouse. For other women, lack of adequate health or pension benefits from their job is a serious problem. More research is needed to understand the impact of lower fringe benefit coverage on female employees.

III. EXPLAINING THE TRENDS IN THE GENDER GAP

In this section, we examine changes in the relative characteristics of female versus male workers and in the jobs in which they work, and relate these changes to the decline in the gender gap. The next section considers the role of discrimination.

The gender gap has declined both because gender differences in measured characteristics have narrowed, and because the "unexplained" difference in pay (which may be discrimination, as discussed below) has also fallen. Among the measured characteristics, the two most important factors contributing to a narrowing of the gender wage gap between 1970 and 1995 have been improvements in women's relative labor market experience and improvements in their relative

⁹Solberg, Eric and Teresa Laughlin. 1995. "The Gender Pay Gap, Fringe Benefits, and Occupational Crowding." *Industrial and Labor Relations Review*, 48(4): 692-708.

¹⁰Even, William and David Macpherson. 1994. "Gender Differences in Pensions," *Journal of Human Resources*, 29(2):555-587.

occupational status. Changes in unionism also benefitted women relative to men, but have played a smaller role. Although substantial, shifts in employment across industries have had relatively little effect on the gender pay gap. Increases in the returns to skill and increasing wage differences across occupations and industries -- particularly in the 1980s -- dampened women's relative wage gains, since women were disproportionately represented among the less-skilled and in lower-paying occupations.

The Role of Human Capital

Human capital, which includes education and labor market experience, is often viewed as the most important determinant of wages. An additional year of schooling is estimated to increase wages by 5 to 15 percent.¹¹ An additional 25 years of work experience increases wages by an estimated 80 percent.¹²

Differences in labor market experience between men and women are far greater than differences in their educational attainment. But in the 1980s, the difference between men and women workers in average labor market experience began to fall. The increase in women's relative experience by itself would have reduced the pay gap by about 3.5 percentage points over the 1980s. Still, as of the late 1980s, when such data were last analyzed, remaining differences in work experience between men and women were found to explain about one-third of the pay gap that existed at that time.¹³

The Role of Family Status and Children

The relationship between family status and pay is different for men and women. While married men, most of whom have children, typically earn more in the labor market than unmarried men, for women the relationship is reversed. Children are associated with lower wages for women but not for men, in part because children tend to reduce women's work experience and time with their employer.

The pay premium for married men appears to have shrunk during the 1970s and 1980s.¹⁴ However, trends in earnings differences between mothers and women without children are less

¹¹Council of Economic Advisers. 1996. "Promoting Economic Growth: Background Briefing Paper." July.

¹²Freeman, Richard and Lawrence Katz. 1994. "Rising Wage Inequality: The United States vs. Other Advanced Countries." In Richard Freeman, ed. *Working Under Different Rules*. New York: Russell Sage Foundation.

¹³Blau, Francine and Lawrence Kahn. 1997. "Swimming Upstream: Trends in the Gender Wage Differential in the 1980s." *Journal of Labor Economics* 15(1, Part 1): 1-42.

¹⁴Blackburn, McKinley and Sanders Korenman. 1994. "The Declining Marital Status Earnings Differential." *Journal of Population Economics* 7:247-70.

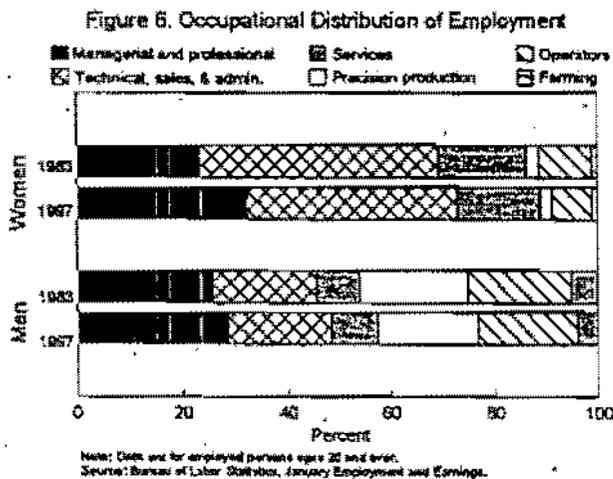
clear. Out of all women, gains in average pay over the last three decades have been greatest for married women with children (see Figure 5). But there is evidence that for younger women, the wage gains for mothers were much less than for non-mothers over the 1980s.¹⁵

The Role of Occupation

Men and women tend to work in different occupations. And wages differ substantially according to the gender composition of the occupation. In particular, men and women who work in predominantly female occupations earn less than comparable workers in other occupations.¹⁶

Figure 6 indicates how men's and women's occupational status have changed over time. Women have increasingly moved into traditionally male occupations. Between 1983 and 1997, the

proportion of employed women who worked in managerial and professional occupations increased from 23 to 32 percent, while the proportion of men in these occupations rose only from 26 to 29 percent.¹⁷ But women are still much more likely to work in service and clerical jobs than men, while men remain more likely to be in blue collar (craft, operator, and labor) jobs.



Occupational segregation by gender began to decline noticeably in the 1970s. Such changes may be due to integration of formerly male or female occupations or to increases in the total

employment share of occupations that have traditionally been more integrated. Movement of women into traditionally male occupations was the predominate cause of the decrease in occupational segregation in the 1970s and 1980s. In the 1980s, growth of overall employment in more integrated occupations was somewhat more important than it had been in the 1970s.¹⁸ The decline in occupational segregation alone in the 1980s would have reduced the gender gap by about three percentage points.¹⁹ Although occupational desegregation has continued in the 1990s, the rate of desegregation through the mid-1990s appears to have been somewhat slower than the

¹⁵Waldfoegel, *op. cit.*

¹⁶Blau, *op. cit.*

¹⁷ Data begin in 1983 due to a major change in the occupational classification system implemented in that year.

¹⁸Blau, *op. cit.*

¹⁹Blau and Kahn, *op. cit.*

rate during the 1970s and 1980s.²⁰

The Role of Unions

Union membership is estimated to boost wages of union members relative to non-union members by 10 to 20 percent.²¹ Men have traditionally been more likely to be union members than women, which helped increase the gender pay gap. The decline over the last 25 years in the fraction of the workforce that is unionized has raised women's relative pay as fewer men receive union wages. In addition, the share of unionized workers who are female has increased as unions have declined less (or even grown) in certain public sector and service-related occupations that have a greater share of female workers.²² These female union members have benefitted from higher union wages. But, overall, the decline of unions has had a relatively small role in the declining gender pay gap; by itself, it would have caused the gender pay gap to decline by about one percentage point over the 1980s.

The Role of Industry

Differences in wages across industries are substantial and persistent. For example, wages for similar workers are 37 percent higher than average in the petroleum industry but about 17 percent lower than average in retail trade.²³ Recent shifts in employment across industries (notably, the decline in the relative employment share of blue-collar jobs, where women are under-represented) have benefitted women relative to men.²⁴ However, the industry shifts had relatively little effect on the gender gap in the 1980s.²⁵

The Role of Changes in the Wage Structure

Trends in the above factors have boosted women's wages relative to men's. However, two major trends have worked to widen the gender gap: increases in the pay premium associated with higher

²⁰Wootton, Barbara, 1997. "Gender differences in occupational employment." *Bureau of Labor Statistics, Monthly Labor Review*, April, pp.15-24.

²¹Freeman, Richard and James Medoff. 1981. "The Impact of Collective Bargaining: Illusion or Reality?" in *U.S. Industrial Relations 1950-1980: A Critical Assessment*, IRRA.

²²Blau and Kahn, *op. cit.* See also Even, William and David Macpherson. 1993. "The Decline of Private Sector Unionism and the Gender Wage Gap." *Journal of Human Resources* 28(2):279-96.

²³Krueger, Alan and Lawrence Summers. 1988. "Efficiency Wages and the Inter-Industry Wage Structure." *Econometrica* 56(2): 259-93.

²⁴O'Neill, June and Solomon Polachek, 1993. "Why the Gender Gap in Wages Narrowed in the 1980s." *Journal of Labor Economics* 11(1): 205-228.

²⁵Blau and Kahn, *op. cit.*

"skills" (i.e., higher levels of education and labor market experience) and increased pay differences across industries and occupations.²⁶ This has served to widen the gender gap because female workers continue to have less labor market experience, on average, than male workers, and are, on average, in lower-paying occupations. The rising wage inequality and increasing economic returns to skills slowed women's progress during the 1980s and alone would have *increased* the gender pay gap by about four to six percentage points.²⁷

The Role of Policy

A number of policies in the 1960s targeted gender discrimination in the labor market. The Equal Pay Act of 1963 proscribes gender-based pay discrimination among employees within the same establishment who do "substantially equal" work.²⁸ Title VII of the 1964 Civil Rights Act (and subsequent amendments) proscribes employment discrimination on the basis of sex in a broader set of categories, including hiring, promotion, and other conditions of employment. Executive Order 11246 (issued in 1965 and amended in 1967 to include sex) requires that non-exempt federal contractors and subcontractors take affirmative action in employment.

Few studies have examined the effects of these policies on the gender pay gap. One difficulty in making such an assessment is that these policy changes took place at a time of enormous changes in gender roles and expectations. Isolating the effects of a single policy change from these broader social and economic changes is difficult. One study estimated the effects of affirmative action on hiring by comparing hiring in firms that are Federal contractors to those that are not (and therefore are not subject to affirmative action provisions). Employment of women increased somewhat faster in contractor firms.²⁹ Although no such studies of the effect of policies on the gender pay ratio exist, it is clear that a role for these policy changes cannot be ruled out in both the increase in the gender pay ratio and the other changes that have served to increase the gender pay ratio.

²⁶Blau, *op. cit.*

²⁷Blau and Kahn, *op. cit.*

²⁸*Schultz v. Wheaton Glass Co. op cit.* The Equal Pay Act, 29 U.S.C. § 206(d) (1), makes it illegal to pay men and women employed in the same establishment different wages for "equal work on jobs the performance of which requires equal skill, effort, and responsibility and which are performed under similar working conditions."

²⁹Leonard, Jonathan. 1984. "The Impact of Affirmative Action on Employment," *Journal of Labor Economics*, October, 2, 439-463.

IV. DISCRIMINATION

What is gender discrimination in the labor force? *

Gender discrimination may take a variety of forms, from practices that reduce the chances that a woman is hired to differences in pay for men and women who work side by side doing the same tasks equally well. There are a variety of theories about how and why women face discrimination in the labor market. An employer may dislike female employees or underestimate their abilities; customers may dislike female employees or underestimate their abilities; or male co-workers may resist working with women. These attitudes may not be directed toward all workers but may only focus on women in higher status occupations. For instance, male employees may not object to having women work for them but may object when women are their superiors. In addition, employers may engage in what is called "statistical discrimination," meaning that they assume an individual woman has the average characteristics of all women. For example, because women on average have higher turnover rates than men, an employer may assume that a given female job candidate is more likely to leave the firm than a similar male candidate. Statistical discrimination, like other forms of discrimination, is illegal. An employer is required to base hiring or pay decisions on specific information about an individual, not on presumptions based on gender.

The unexplained portion of the gender gap

Although the gender gap has narrowed since the late 1970s, at 25 percent it is still substantial (see figure 1). And as late as the 1980s, the date of the most recent detailed longitudinal study, a gender pay differential of about 12 percent remained unexplained even after adjustments for gender differences in education, labor market experience, broad occupational and industrial distributions, and union status. According to this study, the gender pay gap ratio in 1988 was 72 percent. Women's lower full-time experience explained roughly one-third of the pay gap, and gender differences in industry, occupation, and union status explained about 28 percent of the pay gap. This left about a 12 percentage point pay gap unexplained. This unexplained differential, after adjustments, declined by half over the 1980s, from about 22 percentage points to about 12 percentage points. This decline alone would have reduced the gender gap by about 10 percentage points.³⁰

The unexplained portion of the pay gap is often interpreted as the result of discrimination. In this view, once differences between men and women in the relevant determinants of wages are taken into account, any remaining difference in pay must be due to discrimination. But this explanation may be too simplistic. To the extent that discrimination affects women's educational, job, and family choices, the "unexplained" differential will understate the true effect of discrimination. And, to the extent that an analyst cannot adequately measure all the determinants of wages using available data, there may be significant unmeasured labor market skills that differ between men and women. For instance, if women's labor market experience is less likely to be continuous (for example, due to childbearing), then just controlling for years of work may not fully control for the differential effects of experience on male and female wages. In this case, the "unexplained"

³⁰Blau and Kahn, *op. cit.*

differential will overstate the true effect of discrimination, because it includes the effect of relevant unmeasured factors that influence the relative productivity of male and female employees.

The decline in the "unexplained" portion of the pay gap over the 1980s could either be due to a relative improvement in women's unmeasured labor market skills or a decline in discrimination. Both explanations are plausible. Women's unmeasured skills may have improved relative to men's over the 1980s. (For instance, women have entered elite private universities — many of which were closed to women before the mid-1970s — at an increasing rate in recent decades, perhaps increasing the quality of their schooling.) But reductions in discrimination may also have played a role in reducing the "unexplained" difference between men's and women's wages. For example, as women increased their commitment to the labor force and improved their job skills, statistical discrimination against them may have diminished. In addition, reduced discrimination could also have contributed to the decline in the *explained* portion of the pay gap if earlier anti-discrimination efforts encouraged women to invest more in labor market skills and to move into traditionally male occupations.

Studies of gender pay discrimination

Gender pay discrimination under the Equal Pay Act is said to occur when male and female workers employed in the same establishment receive different pay for "substantially equal" work.³¹ A small but growing area of research attempts to collect direct evidence on gender pay discrimination in the labor market in two ways. While none of these studies alone is definitive, taken together they present compelling evidence of the continued existence of gender discrimination in the labor market.

First, a handful of studies have examined whether female workers earn less than comparable male workers within the same establishments and narrowly defined occupational categories. Although evidence is mixed, some studies find substantial pay differences between men and women working in the same narrowly defined occupations and establishments. One recent and thorough study of this kind takes advantage of a unique data set that matches workers in the 1990 Census to information on the establishments in which they work, using the U.S. Census Bureau Standard Statistical Establishment List. Unlike previous studies of this type, the data include workers from all sectors of the economy. The study decomposes the gender gap into a part that is the result of the concentration of women in particular occupations, industries, establishments, and "jobs" (an occupation within an establishment) and a portion due to differences in pay between men and women working in industries, occupations, establishments, and jobs with a similar percentage of female workers. The authors find that a substantial portion — at least one-quarter — of the pay gap is the result of differences in pay between men and women working in similar jobs and establishments.³²

³¹*Schultz v. Wheaton Glass Co., op cit.*

³²Bayard, Kimberly, Judith Hellerstein, David Neumark, and Kenneth Troske. 1998. "New Evidence on Sex Segregation and Sex Differences in Wages from Matched Employee-

Second, an even smaller set of studies attempts to measure productivity of female and male workers directly to determine whether gender pay differences can be directly linked to productivity differences. This approach is rarely implemented because it requires information on wages and a reliable (and non-gender-biased) measure of productivity such as physical output per hour or sales. But a recent study of this sort found that pay differences between comparable women and men are too large to be explained by productivity differences: Using a large linked employer-employee data set, it concluded that "at the margin" women were 85 to 96 percent as productive as men but were paid only 66 to 68 percent as much as men.³³

Finally, studies of discrimination in hiring offer additional, albeit indirect, evidence related to the gender pay gap. For example, the introduction of "screens" to conceal the identity of candidates from juries in auditions for symphony orchestras markedly increased female musicians' chances of success in such competitions and raised their odds of being hired.³⁴ An audit study -- in which male and female candidates submitted essentially identical resumes for restaurant jobs -- found that female applicants were less likely than their matched male counterparts to be interviewed or hired as wait-staff in high-price restaurants (this was not true in low-price restaurants).³⁵ There is some informal evidence that earnings tend to be higher in high-price restaurants; therefore this difference in hiring could contribute to gender differences in pay.

V. CONCLUSION

There is both good news and bad news with regard to gender pay differences. The bad news is that there remains a significant differential between women's and men's pay. On average, women earn about 75 percent of what men earn. Even after controlling for differences in skills and job characteristics, women still earn less than men. While there are a variety of interpretations of this remaining "unexplained" differential, one plausible interpretation is that gender wage discrimination continues to be present in the labor market. This interpretation is buttressed by other more direct studies of pay discrimination, which also show continuing gender differences in pay that are not explained by productivity or job differences.

Employer Data." Paper prepared for the U.S. Bureau of the Census' International Symposium on Linked Employer-Employee Data, Washington DC, April.

³³Hellerstein, Judith, David Neumark, and Kenneth Troske. 1996. "Wages, Productivity and Worker Characteristics." National Bureau of Economic Research Working Paper 5626. June.

³⁴Goldin, Claudia and Cecilia Rouse. 1997. "Orchestrating Impartiality: The Impact of 'Blind' Auditions on Female Musicians." National Bureau of Economic Research Working Paper No. 5903. January.

³⁵Neumark, David, Roy Bank and Kyle Van Nort. 1996. Sex Discrimination in Restaurant Hiring: An Audit Study. *Quarterly Journal of Economics*, August.

The good news is that these differences have decreased in recent decades. This is true not only for the "raw" gap in average female/male pay, which has decreased from about 40 percent to about 25 percent over the past two decades, but it is also true for the "unexplained" difference in female/male pay once factors that affect pay are controlled for. This suggests both that women's skills and job choices are becoming more similar to those of men, and that discrimination may be lessening as well.