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Authors

Noonan, Mary C.
Smith, Sandra S.
Corcoran, Mary E.

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**Examining the Impact of Welfare Reform, Labor Market Conditions, and the Earned
Income Tax Credit on the Employment of Black and White Single Mothers***

Mary C. Noonan
Department of Sociology
University of Iowa
E-mail: mary-noonan-1@uiowa.edu

Sandra S. Smith
Department of Sociology
University of California at Berkeley
E-mail: sandra_smith@berkeley.edu

Mary E. Corcoran
Gerald R. Ford School of Public Policy
University of Michigan
E-mail: marycor@umich.edu

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Examining the Impact of Welfare Reform, Labor Market Conditions, and the Earned Income Tax Credit on the Employment of Black and White Single Mothers

Abstract

Using the Annual Demographic Files of the March Current Population Survey, we determine the extent to which change in welfare policies, labor market conditions, and the earned income tax credit (EITC) account for the changes in employment of black and white single mothers from 1991-2003. Compared to white single mothers, black single mothers are more likely to be high school dropouts, never married, and central city residents, and our results show that policy and labor market changes had a more profound affect on the employment of these groups. However, these demographic differences and interaction effects are not substantial enough to produce dissimilar explanations for the changes in employment by race. During the period 1991-2000, the increase in the EITC was the most important factor, accounting for approximately 25 percent of the increase in employment. Declines in the unemployment rate and welfare reform were less important, together accounting for an additional 25 percent of the increase. Our results also show that the decline in employment between 2000 and 2003 for both black and white single mothers was primarily due to the weakening economy during those years.

Examining the Impact of Welfare Reform, the Economic Expansion, and the EITC on Black and White Single Mothers' Employment

INTRODUCTION

Between 1991 and 2000, employment among single mothers soared by 15 percentage points, from 62 to 77 percent, a remarkable occurrence that has intrigued social scientists for at least three reasons.¹ First, this decade of unprecedented employment growth followed roughly two decades of relative stagnation and/or decline. During the 1970s and 80s, as the employment of married women and single women without children grew steadily, single mothers' employment was relatively low and nonresponsive to labor market conditions. Second, during the 1990s, as rates of employment increased substantially among single mothers, rates among married women, single women without children, and low-skilled black men hardly improved at all. In the case of single women without children, employment actually declined slightly in some years. Third, over the period in which single mothers' employment grew, three major macrostructural developments unfolded: welfare reform, the longest period of economic growth in U.S. history, and the expansion of the earned income tax credit (EITC). For each of these reasons, single mothers' employment has become the focal point of noteworthy analysis and oft-times heated debate, with most engaging a version of the question, "To what extent is rising employment among single mothers a behavioral response to more stringent welfare policies, economic growth, and/or the expansion of tax credits to working poor families?"

Not surprisingly, most who have tackled this question argue that single mothers' employment growth has been a function of some combination of all three factors (see, for instance, Ellwood 2000; Grogger 2003; Meyer and Rosenbaum 2000, 2001; O'Neill and Hill 2001; Schoeni and Blank 2000). To the extent that findings differ, these tend to be a matter of

degree rather than kind.² While some provide evidence attributing the overwhelming majority of the increase to changes in welfare policy (O'Neill and Hill 2001), others point to the strengthening of the economy (Schoeni and Blank 2000), and still others view employment growth as a direct and strong response to the EITC expansion (Grogger 2003; Meyer and Rosenbaum 2000, 2001).

What most of these studies have not problematized, or even mention in fact, is that employment growth among single mothers differed markedly by race (for exceptions, see McKernan et al. 2000 and O'Neill and Hill 2001). While noteworthy for both black and white single mothers alike, growth has been far greater among the former. Indeed, as employment among white single mothers grew by an impressive 12 percentage points between 1991 and 2000, from 71 to 83 percentage points, that of black single mothers grew by an astonishing 20 percentage points, from 49 to 69 percentage points (see Figure 1). Furthermore, single white mothers appear to have been more negatively affected by the economic downturn of 2000 to 2003 than their black counterparts. During this period, their employment declined by five percentage points, from 83 to 77 percent, but employment among black single mothers hardly budged, declining by one percentage point from 69 to 68 percent. As a result, while net gains among white single mothers between 1991 and 2003 were on the order of six percentage points, among black single mothers, that figure, at 19 percentage points, remains impressive. Thus, it appears that employment growth among all single mothers has been driven, in good measure, by the labor market activity of *black* single mothers.

While 'race' has not been ignored altogether in prior work, usually it has only been included as a control with little or no discussion of its significance or relevance. To the extent that race is problematized, as in the work of O'Neill and Hill (2001) and McKernan et al. (2000),

analyses are conducted separately by race, but again with little or no rationale provided for doing so. In this paper, we theorize that black single mothers experienced higher rates of employment growth over this period relative to their white counterparts, because blacks' individual characteristics made them more receptive, as a group, to the employment "boosts" associated with welfare reform, economic growth, and the expansion of the EITC. In other words, we expect similarly situated black and white single mothers to respond in the same way to these macrostructural factors, but because the composition of the two groups differs in important ways, one or all of these major factors may explain a larger share of black single mothers' employment growth.

To begin, one important difference between blacks and whites is level of education. Prior research has found that the employment of less-educated single mothers, especially dropouts, has been most profoundly affected by welfare reforms (Moffitt 1999; Schoeni and Blank 2000). Given that a higher percentage of black single mothers are high school dropouts (Fields 2004; Rawlings 1992), welfare reform may have spurred greater labor market activity among blacks, as a group, compared to whites. It is also likely that growth in low-skill jobs has had a more profound impact on black single mothers' employment since, again, they are more likely than whites to be high school dropouts, and dropouts are more likely to work in low-skill jobs (Pryor and Schaffer 1999). Finally, it seems likely that the employment behavior of women with low levels of education would be more sensitive to changes in the EITC (Meyer and Rosenbaum 2001). This is because workers without a high school degree have the lowest annual earnings of all workers (Pryor and Schaffer 1999), and workers with low annual earnings (e.g., between \$10,000 - \$13,000 in 2001) benefit the most from the EITC program (Cauthen 2002).

Second, black and white single mothers differ with respect to familial characteristics. Prior research has found that the effect of welfare reforms are highly contingent on familial circumstances; for instance, O'Neill and Hill (2001) show that welfare reform has had the greatest effect on the employment of single, *never-married* mothers. Because black single mothers are far more likely than their white counterparts to have never married (Fields 2004; Rawlings 1992), we would expect black single mothers' employment, on the whole, to respond more to welfare reform than white single mothers. Additionally, black single mothers have, on average, more children than white single mothers (Fields 2004; Rawlings 1992). This is important for explaining employment trends over this period, because the EITC is higher for workers with two or more children compared to those with one child, assuming all else equal. Thus, assuming that the EITC has similar positive impacts on the employment of blacks and whites, change in the EITC between 1991-2003 may explain more of black single women's employment growth compared to that of whites because change in the EITC should be larger for blacks compared to whites.

Third, black single mothers are far more likely than their white counterparts to live in central cities (Fields and Casper 2001; McLanahan, Garfinkle, and Watson 1988). This is important because recent research indicates that the hiring of welfare recipients is substantially higher among employers who are located in central cities, near public transit, and adjacent to neighborhoods with a high concentration of female-headed households (see Holzer and Stoll 2001). If the association between the share of low-skill jobs and single mothers' employment is stronger for those living in the central city, then growth in low-skill jobs would play a larger role in boosting employment among black single mothers compared to whites. Research also shows that blacks are more likely to reside in states in which more stringent welfare policies have been

implemented (Soss et al. 2001). If the most stringent policies also have the largest impact on employment, then welfare reform may explain an overall greater share of the growth in black women's employment compared to that of whites.

This paper is an effort to understand why rates of employment growth among single mothers differed by race. That the employment of both subgroups of women has been greatly affected by welfare policies, labor market conditions, and the EITC is without question. How and why differences may have emerged by race, however, is unclear. To fill this gap, we examine the dramatic rise, and subsequent decline, in employment experienced by black and white single mothers between 1991 and 2003. Using the Annual Demographic Files of the March Current Population Survey, we estimate the effects of welfare policies, labor market conditions, and the EITC on the probability of employment for black and white single mothers, and we investigate the extent to which changes in these macro-level factors account for racial differences in employment growth over this period.

Overall, we contribute to the small but growing literature examining the predictors of employment among female heads with children (Browne 1997; Christopher 1996; Coverman and Kemp 1987; Tienda and Glass 1985), and we build on almost 30 years of research theoretically grounded in the urban poverty tradition which has sought to determine the extent to which employment of all single mothers is a behavioral response to the structure of the welfare system or a response to the structure of opportunities available in the labor market (Edin and Lein 1997; Harris 1993; McLanahan and Garfinkle 1989; Pavetti 1993). In the following sections, we outline these theoretical perspectives and hypothesize the impact these factors have had on employment.

THEORETICAL FRAMEWORK

Welfare Reform

Between 1992 and 1996, the Clinton administration authorized the Department of Health and Human Services to grant states waivers of laws that govern Aid to Families with Dependent Children (AFDC) with the purpose of identifying innovative approaches to encourage self-sufficiency and work. During this period, 36 states received waivers to require work, 31 states received waivers to experiment with time limits, and 41 states obtained waivers to promote work and savings through greater earnings disregards and increased resource limits (U.S. Department of Health and Human Services 1997). By 1996, almost 60 percent of states had implemented at least one major welfare waiver statewide. In addition, in August of 1996, President Clinton signed into law PRWORA, which dismantled AFDC and replaced it with TANF. While no states had implemented TANF between 1990 and 1995, by 1996 24 states had, and all states were TANF-ready by July 1997.

Under TANF, the following conditions apply. First, states cannot use federal funds to provide assistance to families that have received aid for 60 cumulative months. Thus, after a period no longer than five cumulative years, single mothers must find alternative means to support their families, such as employment or private charity. Second, single mothers are obliged to participate in some sort of work activity, and states must provide evidence to the federal government that each year the percentage of recipients who work has increased. Third, states must sanction recipients who fail to comply with program requirements (Gallagher et al. 1998). Recipients can forever lose their right to receive public assistance for non-compliance, and must again find alternative sources of financial support. Finally, a number of states have expanded their earned income disregards that allow women to keep more of their earned income

before it starts to negatively affect their grant amounts (see Corcoran et al. 2000 for exceptions to these TANF stipulations). Thus, while many aspects of AFDC created work disincentives—small earnings disregards, for example—TANF programs are intended to strongly encourage work and discourage nonwork (Corcoran et al. 2000). Because of these stricter requirements and stiffer penalties for noncompliance, widespread is the belief that rising labor force participation and employment among single mothers is in large part due to welfare waivers and TANF programs.

Generally speaking, prior work bears this out, but only two studies that we are aware of examine the effect of waivers and TANF on single mothers' employment by race (McKernan et al. 2000; O'Neill and Hill 2001). By and large, both report that welfare reform had a greater effect on black single mothers' employment. O'Neill and Hill (2001) found that only white women experienced a significant employment boost from waiver implementation, but that black single mothers experienced a higher gain in employment attributable to TANF. While TANF was associated with a 6.5 percentage point increase in white single mothers' employment, a gain that explained almost two-thirds of their employment rise during the TANF period (1997-2000), black single mothers' employment gained 8.7 percentage points as a result of TANF, which explained 83 percent of their employment rise during the TANF period. Thus, it appears that black single mothers' employment was more profoundly affected by welfare policy changes, not only in terms of the magnitude of the effect, but also in terms of reform's contribution to the overall employment growth. McKernan et al. (2000) also found a larger impact of TANF on black single mothers' employment (9 percentage point increase) versus whites' (6-7 percentage point increase), but TANF explained a similar percent of the overall increase in black and white single mothers' employment between the years 1995-1999. In non-metro areas, TANF was

responsible for about 75 percent of the increase in both black and white single mothers' employment, whereas in metro areas, TANF explained a higher percentage of white's increase compared to blacks' increase (94 percent versus 83 percent).

Interestingly, however, neither O'Neill and Hill (2001) nor McKernan and colleagues (2000) offer a compelling *reason* for welfare reforms' differential impact on single mothers' employment by race. We propose at least three reasons why welfare reform should explain a greater share of black single mothers' employment growth. Each speaks to black single mothers' greater vulnerability.

First, prior research indicates that the impact of welfare reform on employment has largely been contingent on single mothers' individual-level attributes, with educational attainment representing the most important axis of consideration. For instance, using the CPS, Moffitt (1999) examined the effect of welfare waivers on labor force participation and found that waivers increased annual weeks and hours worked among single mothers who dropped out of high school. The effects were weaker or non-significant for those with more education. Replicating some aspects of Moffitt's study, Schoeni and Blank (2000) also report that high school dropouts were more profoundly impacted by reforms, specifically waivers. Only among dropouts did employment respond positively to waivers, increasing the share of women working by two percentage points. In both studies, welfare reforms were theorized to have a larger effect on less educated women because their greater economic vulnerability meant that they were more likely to rely on welfare and thus required to take part in some type of work activity.

Others contend, however, that highly educated women have been more profoundly affected since they are more likely to have the personal and social resources necessary to make the transition from welfare to work. Specifically, O'Neill and Hill (2001) assert that reforms

have generally had their strongest effect on college-educated women's employment. Using the CPS, they examined the effect of welfare reform on welfare and work participation from 1983 to 2000 and found that waivers only had a positive affect on the employment of single mothers with some college or more, explaining over 60 percent of the increase in employment. TANF, on the other hand, had a positive effect on the employment of single mothers in every educational category. While TANF raised employment among dropouts, increasing their labor market activity by 6.3 percentage points and explaining 40 percent of the increase, it also increased employment among high school graduates and women with some college by 5.6 and 7.6 percentage points, boosts that explain 71 and 97 percent of the changes in their employment, respectively.

Second, we might expect a greater effect of welfare reform on black single mothers' employment because of their familial circumstances. Here again, O'Neill and Hill (2001) have shown that employment gains between 1991-2000 among single mothers varied greatly by marital status. Employment growth has been greatest among single mothers who had never married, compared to those who were divorced, separated, or widowed. Researchers argue that being never married increases mothers' economic vulnerability and thus their reliance on public assistance, making them more open to the work requirements that are imposed under TANF. Because black single mothers are more likely than their white counterparts to have never married (Fields 2004; Rawlings 1992), it is reasonable to hypothesize that these compositional differences may mean that black single mothers, as a whole, experienced a greater increase in employment as a result of welfare reform.

Third, we might also understand the differential effect of welfare reform on the employment of black and white single mothers by examining the role of the state in

implementing specific aspects of welfare policy. According to welfare state scholars Jill Quadagno (1994) and Robert Lieberman (1998), we cannot understand the decisions that state actors make regarding U.S. welfare policy without considering the role of race and racism in political discourse. Lieberman, for instance, asserts in *Shifting the Color Line* that racism - which he defines as an ideology of racial exploitation - has not only affected the content of social welfare policies, just as importantly it has affected the structure of institutions designed to achieve them. As a result, not only does racial composition shape the potential or promise that specific policies have, it also affects how citizens are treated. Thus, from this perspective, we might hypothesize that welfare waivers and TANF were shaped at least in part with the intention of pushing *black* single mothers off of the welfare rolls and into labor force activity.

Recent evidence supports this perspective. Soss and colleagues (2001) sought to explain variation in the stringency of states' TANF sanction policies as a function of cross-state differences in problem-solving capacities, welfare liberalism, policy innovation, electoral politics, desires to control the poor, and finally, the racial composition of welfare clientele. Using data from 1996, they found that the racial and ethnic make-up of the welfare population was the most important criteria around which stringency was determined. The greater the proportion of black and/or Latino clients on states' AFDC rolls, the higher the likelihood that states had implemented strict rules and harsh penalties, including strong sanctions, restrictive time limits and family caps. Furthermore, racial composition was the *only* variable to significantly predict whether or not states implemented stricter time limits and family caps. Thus, they conclude that the structure of TANF policies and the ways that welfare clients have been treated has depended, in great part, on the extent to which black single mothers are represented on states' rolls. It seems likely that tougher penalties for noncompliance with work

requirements would increase the likelihood of employment among single mothers, and if black single mothers are disproportionately exposed to these sanctions as a function of which states they live in, then welfare reform may explain more of their employment growth relative to white single mothers.

In sum, for three reasons we would expect welfare reforms to explain a greater share of black single mothers' employment growth compared to white single mothers. First, the effect of welfare reform on single mothers' employment has been greatest among women with low levels of education, and black single mothers are less educated than white single mothers, on average. Second, the effect of welfare reform has been greatest among women who have never married. Here again, black women are far more likely than white single mothers to have never married. Finally, it seems likely that the impact of welfare reform on employment would be the most profound in states with harsh sanctioning policies, and black single mothers are more likely, by design, to reside in states in which harsh sanctioning policies have been implemented.

Labor Market Conditions

From March 1991 to January 2001, the United States was in the midst of the longest economic expansion in the nation's history, one that brought with it substantial employment growth and the lowest unemployment rates in three decades. At its peak in 1992 (7.5 percent), the unemployment rate steadily declined such that by the year 2000, the figure had dropped to just four percent (Table No. 587, Statistical Abstract of the United States, 2003). This sizeable decline resulted in large part because, between 1993 and 1998, employment within the private sector grew on average three percent each year, resulting in an overall employment growth of roughly 18 percent (Holzer 1999). But over the period 2000 to 2003, the unemployment rate climbed again, to 4.7 percent in 2001 and then 6.0 percent in 2003.

Although prior research has found that the economic expansion had a positive effect on single mothers' employment (Ellwood 2000; McKernan et al 2000; O'Neill and Hill 2001; Schoeni and Blank 2000), few have examined potential racial differences in the ability of the economic expansion to explain trends in single mothers' employment. O'Neill and Hill (2001) analyzed the impact of the economy on the likelihood of working, separately by race, but they failed to explain *why* differences might exist. For instance, the authors show that during the waiver period, the decline in the unemployment rate explained roughly 32 and 36 percent of the increase in employment among white and black single mothers, respectively. During the TANF period, however, they find that labor market conditions explained less, accounting for just 10 percent of white single mothers' employment increase, but 21 percent of the increase among black single mothers. In both cases, however, labor market conditions explained a larger share of black single mothers' employment increases.

We propose two reasons as to why black single mothers' employment may have been affected more from labor market conditions than their white counterparts. First, it may be the case that the low-wage, low-skill jobs that have been available in greater numbers were concentrated in areas where black women have a disproportionate presence or better access. For instance, according to a study by Holzer and Stoll (2001), although suburban employers were more *willing* to hire welfare recipients, actual *hiring* of welfare recipients was greater among central city employers, who are located near public transit and adjacent to neighborhoods with high concentrations of female-headed households. Although this particular study focused on employers' hiring of welfare recipients, one could just as well hypothesize that less-skilled single mothers generally, not just those on welfare, would be affected in a similar way. Because black single mothers are far more likely than white single mothers to reside in the central city (Fields

and Casper 2001; McLanahan, Garfinkle, and Watson 1988), it seems likely that increases in the number of low-skill jobs would lead to an increase in black single mothers' employment more so than whites' employment.

Second, black single mothers might have experienced greater benefits from the economic expansion because of the types of jobs that were created better suited their skill-set—blacks are more likely to be high school dropouts and less likely to be college graduates (Fields 2004; Rawlings 1992). The economic expansion could explain a greater share of black single mothers' employment growth because opportunities for the lowest-paying jobs increased. Indeed, although three-quarters of new jobs had been created in industries with middle or high levels of earnings, or those requiring high levels of education (Holzer 1999), among low-earning industries—those with earnings generally below \$10 per hour and most likely to employ black single mothers—growth was substantial. According to Ilg and Haugen (2000), between 1989 and 1999, employment in the lowest-paying jobs increased by 16 percent, or roughly 5.4 million jobs. In the following low-paying occupational and industrial mixes, job growth was particularly noteworthy: sales occupations in service industries grew 40 percent, sales occupations in retail trade grew 18 percent, administrative support occupations in service industries grew 17 percent, and service occupations in retail trade and service industries grew 17 percent. Job growth in these low-wage/low-skill jobs continued into the 2000-2003 period (coincidentally the period in which black single mothers' employment stabilized and that of white single mothers declined markedly). Thus, we hypothesize that black single mothers may have benefited more from the economic expansion than white single mothers because opportunities grew more in or around areas where blacks disproportionately reside - central cities - and because the type of job

opportunities that became available better fit black women's qualifications—low-skilled and low-wage.

The EITC

While some are convinced that employment among single mothers increased dramatically because of welfare reforms, and others contend that reforms would have had little impact had it not been for a robust economy, still another set hypothesize that economic expansion would have done little if not coupled with public policy initiatives like the EITC (Danziger and Gottschalk 1995). Indeed, according to Bruce Meyer and Dan Rosenbaum (2000), “In recent years, the most important change for single mothers in the financial incentive to work has probably come from the Earned Income Tax Credit” (1030).

The EITC was established in 1975 as a financial incentive program to encourage work among low-income families with children by providing refundable tax credits or earnings subsidies. Because credits were small and failed to keep pace with inflation, the EITC was largely ineffective the first ten years of its existence (Ellwood 2000). However, with the enactment of the Tax Reform Act of 1986 (TRA86), the EITC was expanded in a number of ways, remedying many of its shortcomings. First, credits were increased substantially. Second, beginning in 1991, larger credits were made available to families with two or more children. Third, before 1991, low-income mothers could only receive credit for their dependent children if they provided more than half of their support through earned income. This meant that women who received more than half of their income from AFDC could not qualify. Since 1991, these restrictions were ended. Fourth, whereas the EITC had been counted as earned income in calculations of AFDC and food stamps, since 1991 this has not been the case, increasing EITC's worth among the most disadvantaged of low-income mothers. These tax policy changes have led

to a remarkable expansion of the EITC program. According to Meyer and Rosenbaum (2000), “EITC credits increased fifteen-fold from 1.6 billion in 1984 to 25.1 billion in 1996. Single parents received over two-thirds of these EITC dollars” (1030). Furthermore, “these EITC expansions sharply increased over a short period of time the reward for working, particularly for women with two or more children” (1033).

Given the dramatic increases in credit rates and maximum credits allowed for working parents with qualified children over the 1990s, much of the increase in single mothers’ employment (Ellwood 2000; Grogger 2003; Meyer and Rosenbaum 2000, 2001) and welfare recipients employment (Hotz, Mullin, and Scholz 2001) has been attributable to this expansion. Arguably the most comprehensive studies to date have been conducted by Meyer and Rosenbaum (2000, 2001). They examined the effect of the tax and welfare policy changes on single mothers’ employment and found that there were large relative increases in the employment of single mothers with two or more children, beginning the year in which there was a substantially higher EITC for those with two or more children. Overall, their findings support the notion that the EITC played a major role in spurring the recent increase in employment among single mothers.

We contend that the EITC expansion may explain a greater share of black single mothers’ employment because many of the changes that were implemented in TRA1986 would have had a more profound effect on mothers with their characteristics. Prior research indicates that the effects of the EITC are greater for single mothers who have dropped out of high school (Meyer and Rosenbaum 2001), because they are more likely to fall into categories of low-wages that qualify for the credit. Because black single mothers are more likely than their white counterparts to be high school dropouts, they may be more likely to benefit from the expansion of this credit.

For these reasons, we hypothesize the EITC expansions will explain a greater share of black single mothers' employment growth.

The EITC expansion may also explain a greater share of black single mothers' employment because blacks have more children, on average, than whites (Fields 2004; Rawlings 1992) and so the average EITC of black single mothers' would have improved significantly more than the average EITC of white single mothers, assuming all else constant. Black women may have experienced a greater pull into the market as a result of these greater credits

METHODOLOGICAL FRAMEWORK

Data and Measures

To investigate the effects of welfare reform, the economy, and the EITC on the employment probabilities of black and white single mothers, we analyzed data from the Annual Demographic Files of the Current Population Survey (March CPS), 1991-2003. Others conducting similar research rely heavily on the March CPS to make causal connections between welfare policy changes and employment among single mothers (Grogger 2003; Meyer and Rosenbaum 2000, 2001; Schoeni and Blank 2000). Cross-sectional in nature, the March CPS is a national probability sample of about 50,000 households that supplies comprehensive information on the employment status, occupation, and industry of persons 15 years old and older. Demographic characteristics, such as age, sex, race, and marital status are also available for each person in the household. Our sample consists of black and white single mothers ages 18 to 54 who resided in Metropolitan Statistic Areas (MSAs).³ Hispanics, non-citizens, and full-time students are excluded from the sample. We also excluded those living in MSAs or states that had no single mothers in one year or more (approximately 9% of the sample). The total sample size is 35,097: 14,385 black and 20,712 white, single mothers. Each year the sample size

is approximately 2,500 individuals, except for the last two years when it increased to roughly 4,000. This jump is due to the recent expansion in the overall sample size of the March CPS (from 50,000 households to 78,000 households). Women in our sample come from 47 states and 172 MSAs, and each state and MSA is represented in every year.⁴

Because the March CPS does not provide a few of our important predictor variables, we appended relevant data from other sources. MSA unemployment rates for each year were gathered from the Bureau of Labor Statistics. State welfare waiver and TANF implementation dates were obtained from the 1999 Council of Economic Advisors (CEA) report, *The Effects of Welfare Policy and the Economic Expansion on Welfare Caseloads: An Update*. Information on the EITC was collected from the *Green Book* (Committee on Ways and Means, U.S. House of Representatives 2004, Table 13-12).

Table 1 describes the measures used in our analysis. Our dependent variable is a dummy variable that indicates whether a woman was employed in the week prior to the survey (1=employed, 0 = not employed). Our choice of “employment” over “labor force participation” stems from our assessment of what constitutes labor market “success.” We contend that in the context of welfare reform and economic growth, employment, which distinguishes between those with a job and those without, is a better indicator of labor market success than labor force participation, which distinguishes between those with a job (employed) and looking for work (unemployed) from those out of the labor force altogether. While gains in employment would indicate an increase in the percentage with a job, an increase in labor force participation could indicate nothing more than an increase in the number of individuals looking for work relative to those who are out of the labor force, and not an increase in those who are working. This is

especially problematic when considering black women's employment experiences, as their moderate rates of labor force participation generally mask high rates of unemployment.

[TABLE 1 ABOUT HERE]

Referring to Table 1, four categories of predictor variables are specified: welfare policies, labor market conditions, the EITC, and individual characteristics/other relevant controls.

Drawing from the CEA Report (1997), we test for state welfare policy effects using a dummy variable that takes the value of 1 if a state had implemented *any major welfare waiver*, statewide, in the year prior to the interview date. Any major waiver could refer to time limits, work requirements, job exemptions, sanctions, earnings disregard expansions, and/or family caps for additional children. Waivers were in place in three of our states in 1993 and had reached a total of 19 states by 1996. The value for any major welfare waiver is returned to 0 after the state enacts TANF.

We test for federal welfare policy effects using an indicator variable which takes the value of 1 if the state had *TANF* in effect in the previous year and 0 if not. Although PRWORA was signed into law in August of 1996, implementation of TANF-funded programs could not begin until states had submitted a TANF plan that was subsequently approved by the federal government. Thus, official implementation dates differ. The earliest a state could begin executing their TANF program was September 1996. The latest was July 1997 (CEA 1999). Thus, while no states were assigned the value of 1 for the TANF dummy variable between 1991 and 1996 (because our TANF variables are lagged one year), 28 states were assigned the value of 1 in 1997, and all states were given the value of 1 for the TANF indicator variable for the years 1998-2003.

As a requirement of TANF, although some exceptions apply, single mothers have to engage in some sort of work activity. Moreover, following federal guidelines, states are required to sanction recipients who fail to comply with these requirements (Gallagher et al. 1998). However, sanctions for noncompliance vary considerably from state to state, with some states taking little action against noncompliance and others responding quickly and harshly. Three levels of harshness have been identified: first are states whose maximum sanction is a partial family sanction (low); second are states that impose full family sanctions, but only after repeated offenses (moderate); third are those states that impose full family sanctions after the first noncompliance offense (high) (CEA 1999). Given the possibility that single mothers who reside in high sanction states may be more likely to work than those who reside in low sanction states, we included three indicator variables in our specification: *TANF*low* takes the value of 1 if the state's sanction policy for noncompliance with work requirements is partial; *TANF*moderate* takes the value of 1 if the state's sanction policy is "gradual full family"; and *TANF*high* takes the value of 1 if the state's sanction policy is "immediate full family". The omitted category includes states that impose no sanction or some lesser sanction, which was the case under traditional AFDC (i.e., pre-TANF implementation).

We determined the effect of the economy with two measures of local labor market conditions. *Unemployment rates* are measured at the MSA-level and are lagged one year (respondents interviewed in 2003 were assigned MSA unemployment rates from 2002). To determine how the economic expansion may have led to higher employment among single mothers, we also created a measure of the *share of low-skill workers in each state*, lagged one-year. Using a sample of employed men and women aged 18-54 from the March CPS, low-skill workers were operationalized as those working in service or retail industries *and* in sales or

service occupations.⁵ These correspond to the occupational and industrial mix of low-skill jobs that experienced some of the fastest growth during the 1990s (Ilg and Haugen 2000); since 2001 these industries saw either significant job losses or slower job growth than in the pre-recession period (Boushey and Rosnick 2004). Within each state and year, we calculated the percentage of all workers that worked in such occupations/industries. This measure ranges from a low of 6.1% in Vermont in 2002 to a high of 32.6% in Nevada in 1996.

We measure the impact of the EITC with a variable set equal to the *maximum federal EITC benefit* (in 2000 dollars) available to each respondent, based on the number of children in her family and the calendar year. This measure is also lagged one year. For instance, mothers with two children interviewed in 1991 were assigned an EITC value of \$1,256, whereas mothers with two children in 1997 were assigned an EITC value of \$3,903. Of course, the actual EITC benefit a family could potentially receive is a function of actual after-tax family income (see Meyer and Rosenbaum (2001) for a more complex specification). Our more simplistic measurement strategy, however, has been used by others examining the impact of the EITC on work outcomes, and has been found to yield results that are similar to more complex specifications (see Grogger 2003; Hotz, Mullin, and Scholz 2001).

Finally, we included a number of individual characteristics typically included in models of women's labor force participation (Browne 1997, 2000; Casper and Cohen 2000; Christopher 1996; Corcoran 1999; Figueroa and Melendez 1993; Tienda and Glass 1985). Human capital variables include educational attainment and a proxy for previous work experience. We measured educational attainment using three indicator variables: *high school dropout*, *some college*, and *college/advanced degree*, with *high school graduate* representing the omitted category. Because the CPS does not have a measure of previous work experience, we employed

age as a proxy.⁶ We categorized age into four separate dummy variables to facilitate interpretation of regression results: *twenties* (18-29 years old), *thirties* (30-39 years old), *forties* (40-49 years old), and *fifties* (50-54 years old). The dummy variable indicating that a respondent is in her twenties is the omitted category in the regression models.

Additional controls include marital status, number of children less than eighteen years of age, other family income, the presence of a co-residential adult, and central city residence.⁷ To measure marital status, we incorporated indicator variables *never married* and *widowed* with *divorced/separated* acting as the omitted category. Our specifications also include a continuous variable indicating the number of children the respondent has who are less than eighteen years of age and living in the respondent's home. To calculate *other family income*, we subtracted from total family income the sum of personal earnings and welfare income and divided the total by 1,000 (to facilitate interpretation). To correct for outlying cases, we recoded three cases with other family income greater than \$50,000 to that value. The *presence of a co-residential adult* is measured using a dummy variable that takes the value of one if one or more adults, other than the respondent, are present in the household. Central city residence is measured using a dummy variable equal to one if the respondent lives within the central city. Finally, to capture any pre-existing trends in women's employment not due to welfare reform, the economy, and the EITC, we included a set of *year dummies* in all model, with *year 1991* as the omitted category. The year dummies will absorb the employment impact of any program or policy that varies only as a function of time (e.g., changes in the federal minimum wage).

While an alternative approach to answering our research questions would be to follow the same individuals over time, longitudinal datasets that would allow such an analysis have several drawbacks. For instance, the Panel Study of Income Dynamics (PSID) has sample sizes too

small to accommodate state-specific effects, an important aspect of our analysis. Furthermore, high attrition rates in recent years put the representativeness of the PSID into question. By utilizing data from multiple and consecutive years of the March CPS, however, we are in effect employing a time-series of cross-sections. Thus, we are able to follow the same MSAs/states over time, which is important given that our main variables of interest are measured at the MSA/state-level (TANF, unemployment rates, etc.). That we do not follow the same individuals over time is of less consequence to our analysis and thus our results. This is especially true given that the single mothers in our sample are randomly drawn from an identical population over the years, giving us confidence that we would arrive at the same results even if we had used longitudinal panel data.

Methods

To determine how much changes in welfare, labor market conditions, and the EITC accounted for the change in employment of single, black and white mothers over the period 1991-2003, we used a two-stage analytic framework. In the first stage, we pooled all years of the data, 1991-2003, and estimated the effect of our predictor variables on employment using multiple regression techniques. We did not estimate our models separately by race, because our theory dictates that the macro-level variables will have similar impacts for blacks and whites, controlling for individual and family characteristics.⁸ In our baseline model, we predict employment as a function of our main macro-level variables: welfare reform, labor market conditions, and the EITC. All controls are also included in this model. In subsequent models, we include interactions terms, one by one, to see if the impact of the macro-level variables vary as a function of the given individual-level characteristic. This necessitates six additional models with the following interaction terms: (1) welfare with education, (2) welfare with marital status,

(3) welfare with severity of sanctions, (4) share of low-skill jobs with education (5) share of low-skill jobs with central city, and (6) EITC with education.

In the second stage of our analysis, we determine how much each macro-level variable contributes to change in employment over the time period. We split the entire time period into two parts, 1991-2000 and 2000-2003, because employment grew in the first period and then fell in the second period. Therefore, our analysis will identify those factors associated with employment growth between 1991-2000 and those factors associated with employment decline between 2000-2003. We use the coefficient estimates from the regression models and the values of the main variables (i.e., welfare policies, labor market conditions, and the EITC) to calculate the predicted probability of employment under two conditions: actual and “counterfactual.” Finally, we use these predictions to tell us how much each factor contributes to the change in employment.⁹ The predictions and calculations are performed separately by race and are repeated with the coefficients from each different model specification to arrive at a range of results. In sum, for each of the five factors – waivers, TANF, unemployment rate, share of low-skilled jobs, and the EITC – we will have seven different estimates (using the results from the full model and the six interactive models) of their contribution to the change in employment, for both blacks and whites, and for the two time periods, 1991-2000 and 2000-2003.

Because our data are hierarchical in nature, we use hierarchical linear modeling (HLM) software to estimate a multi-level model predicting employment as a function of our independent variables (Raudenbush and Bryk 2002). Our model has three levels: individuals are nested within MSAs, and MSAs are nested within states. Since individuals are clustered within MSAs and states, the odds of being employed may not be independent because women from the same MSA/state may share common features. An ordinary logistic model, however, assumes that all

observations are indeed independent. Multilevel modeling adjusts for this by taking into account the error associated at each level of data. In this way, these models correct for the underestimation of the standard errors of coefficients that can occur when hierarchical data are estimated using traditional single-level logistic regression. Multilevel modeling also has advantages over other techniques, such as increased efficiency in the estimates through Bayesian estimation techniques and the ability to estimate random effects.

Multi-level analyses can take many forms. Because our dependent variable is binary, we estimated a logistic regression model to determine the relationship between the likelihood of employment and welfare reform and labor market conditions. All models are estimated with robust standard errors. Estimated coefficients from these models are interpreted in the same way as those derived from an ordinary logistic model. In our regression models, MSA-level measures (unemployment rates) and state-level measures (share of low-skill jobs, welfare waivers, and TANF) are group-mean centered. This means that for each year, within MSAs and states, the values are represented as the deviation from the MSA or state mean across all years. This technique is equivalent to including a dummy variable for each MSA and state, and thus controls for any unobserved factor specific to a MSA or state that may be correlated with the likelihood of employment (Raudenbush and Bryk 2002). Finally, because it is likely that variation in the effects exists due to state differences in welfare programs, we allow the TANF and waiver effects to vary across states in some models, producing a more precise estimate of the main effects of these factors, as well as allowing us to determine whether variation in the effects exists.

RESULTS

Descriptive Statistics

Table 2 reports the means of variables used in the analyses for the total sample as well as separately for black and white female heads with children. The first set of columns shows the means for all years, and then the subsequent columns show the means for 1991, 2000, and 2003. Race differences in employment are large: 57 percent of single black mothers are employed compared to 73 percent of single white mothers. For blacks, employment followed an upward trend for almost the entire period, starting with 49 percent in 1991, reaching a peak at 71 percent in 2001, and then declining slightly to 68 percent in 2003 (see Figure 1). White single mothers' employment followed a similar, but less dramatic pattern, beginning at 71 percent in 1991, reaching a high point of 83 percent in 2000, and then steadily declining to 77 percent in 2003.

[TABLE 2 ABOUT HERE]

Black women are only slightly less likely than white women to reside in states in which any major welfare waiver (14 percent versus 15 percent) or TANF (30 percent versus 31 percent) was implemented. Interestingly, however, a higher proportion of black women reside in states in which high sanction policies are in place for program noncompliance (30 percent versus 27 percent). On average, black women reside in areas with slightly higher unemployment rates (5.64 versus 5.56). For both groups of women, MSA unemployment rates declined markedly between 1991 and 2000, from 5.33 to 3.99 for single black mothers, and from 5.26 to 3.90 for single white mothers. Unemployment rates began to climb after 2000. In 2003, unemployment rates surpassed their 1991 levels: 5.63 for blacks and 5.77 for whites. Another indicator of viability within the labor market for single mothers is the share of low-skill jobs. In 1991, white single mothers resided in states with a slightly higher share of low-skill jobs compared to black

single mothers (14.05 versus 13.71). The share of low-skill jobs increased only slightly over the 1990s: by about a half of a percentage point for blacks and about a quarter of a percentage point for whites. Between 2000 and 2003, these figures declined by 0.05 percentage points for blacks, and returned to 1991 levels for whites. With respect to EITC values, black single mothers have a slightly higher potential EITC credit than white single mothers (\$2,290 versus \$2,220). This is due to the fact that black single mothers have, on average, a larger number of children than white single mothers (i.e., the EITC maximum credits vary according to the number of children in a family, with higher credits going to families with more children).

There are substantial race differences among many of our individual demographic measures. Single black mothers are more likely to be high school dropouts (21 percent versus 13 percent) and are less likely to have college degrees (7 percent versus 15 percent) compared to white single mothers. Between 1990 and 2003, the educational attainment of single black mothers improved substantially. The percentage of single black mothers categorized as dropouts fell from 29 percent in 1991 to 15 percent in 2003, a remarkable decline of 14-percentage points during this 12-year period. Educational attainment improved as well among single white mothers; for instance, the percentage of single white mothers who had dropped out of high school deteriorated 8-percentage points, from 17 to 9 percent.

Compared to white female heads, black female heads are younger (40 percent versus 30 percent in the 18-29 age group) and more likely to be never married (62 percent versus 25 percent). For both groups, the age distribution of single mothers “aged” over the period 1991-2003, and for whites, single mothers were more likely to be never married and less likely to be divorced in 2003 than in 1991. Black single mothers in our sample have more children on average than white single mothers (1.91 versus 1.58). Slightly less than half of both black and

white single mothers are co-residing with another adult, and both groups have roughly \$2,800 in other family income. Compared to white single mothers, substantially larger percentages of black single mothers live in central cities (66 percent versus 28 percent).

Regression Results: Main Effects

We begin by estimating five models predicting employment. These models estimate the main effects of our primary variables. Displayed in Table 3, model 1 includes only the control variables: race, individual and family demographic characteristics, and the year dummies. Our 2nd model introduces welfare policies to the baseline model. Model 3 adds to the base model measures of labor market conditions, and model 4 adds to the base model the measure of EITC. Model 5 incorporates all of our major predictor variables. In all of the tables we present the estimated logit coefficients and standard errors. To facilitate interpretation, we transform some of the estimated coefficients into odds ratios by exponentiating the coefficient. The odds ratio indicates how the factor change in the odds of employment will change with a one-unit increase in the independent variable. It is important to remember that the odds ratio does not tell us how a change in the given variable affects the *probability* of employment (Long 1997); probability simulations will be performed in the second part of our analysis

[TABLE 3 ABOUT HERE]

Results from model 1 indicate that employment probabilities are lower for women who are black, who are high school dropouts, who have never been married, who are widowed, who have children in the home, who have other adults in the home, and who live in central cities. The probability of working is higher for single mothers who have some college or a college education, who are in their thirties or forties, and who have higher levels of other family income. The majority of these results conform to past research predicting women's employment. One

exception is the impact of other family income. In studies of married women, this measure typically has a negative effect on women's employment likelihood. Our finding of a positive effect is likely due to the fact that our sample consists only of single mothers, and so "other family income" takes on a different meaning than it would in a two-parent household.

Model 2 adds to the base model the state and federal welfare policy variables. We find that neither welfare waivers nor TANF significantly impacts employment.¹⁰ In model 3, we include our measures of labor market conditions and find that the MSA unemployment rate has a significant negative impact on the odds of employment for single mothers. The odds of employment decline by 7 percent for each additional 1-point increase in the MSA unemployment rate (i.e., $[\exp(-0.072)-1]*100 = -7$). Shares of low-skill jobs, however, have no statistically significant impact on the employment of these single mothers. Model 4 shows the impact of the EITC measure on employment. Results show that the EITC has a significant positive relationship to single mothers' employment. For each additional \$1,000 increase in the maximum EITC, the odds of employment are 12 percent greater, holding all other variables constant.

Our full model, model 5, incorporates all of our major predictor variables and reveals little change from previous models. We find no support for our hypotheses that employment would be greater among those who resided in waiver states and TANF states, and that employment would be positively associated with the percent of low-skill workers in a state. We do find evidence to support our hypotheses that the probability of employment would decline with rising unemployment rates and increase with a rising EITC.

Regression Results: Interaction Effects

Table 4 displays the results of our models including interactive effects of individual-level characteristics and macro-level factors. Model 1 shows the results of welfare policy and education interactions, model 2 includes an interaction of welfare policy and marital status, and model 3 incorporates an interaction of TANF with sanction severity. Models 4 and 5 show interactions of low-skill jobs with education and central city residence, respectively. Model 6 shows the results of the EITC and education interaction. Although not presented in the table, all of these models include the entire set of control variables from the full model in Table 3.

[TABLE 4 ABOUT HERE]

To begin, we hypothesized that to the extent greater employment is found among women residing in waiver or TANF states, these associations would primarily exist among low-skilled women (i.e., those with a high school diploma or less). Model 1 shows evidence of an interaction between waivers and education levels, and an interaction between TANF and education. With respect to waivers, we find that waivers increase the probability of working among those with some college education. Although inconsistent with findings of previous research (see Moffitt 1999), this finding is not counterintuitive. It is likely that, having other options, single mothers endowed with some human capital were unwilling to contend with the work requirements and sanctions that waivers introduced to the welfare system; as a result, they committed to employment. With fewer skills to fall back on and more structural barriers to employment, high school dropouts and graduates may have been less likely to work. We do, however, find that the odds of working for high school dropouts living in TANF states are 33 percent greater compared to those residing in states that had yet to implement TANF. This finding supports our hypothesis. None of the other education/TANF interactions are significant predictors of employment.

Model 2 examines the interaction of marital status and welfare reform. Results show no evidence of an interaction between waivers and marital status, but do show that the impact of TANF on employment is contingent on marital status. Compared to ever-married single mothers living in TANF states, the odds of working among never-married single mothers living in TANF states are increased by a factor of 1.38, holding all else equal (i.e., $[\exp(0.371-0.050)] = 1.38$). This result also supports our hypothesis.

In model 3, we examined whether the employment effects of TANF vary by levels of TANF sanction-harshness. Results show that employment is higher in moderate-sanction states than in states with low sanctions or high sanctions. Those residing in moderate-penalty states have employment odds that are 24 percent greater compared to those residing in states that have not implemented TANF. While not supportive of our hypothesis (i.e., that harsh-sanction states would have the most profound impact on employment), these results suggest that, in some sense, employment behavior is responsive to sanctions for noncompliance.

Model 4 represents a test of the hypothesis that the relationship between low-skill jobs and employment is contingent on single mothers' level of educational attainment. We find that, among high school dropouts, every additional percentage point increase in the share of low-skill jobs is associated with a 4.8 percent increase in the likelihood of employment. For those with a high school degree or some college, shares of low-skill jobs are not associated with the probability of employment, and for those single mothers with a college degree, low-skill jobs are negatively associated with the probability of employment. These results also support our hypothesis.

Next, we explore whether the impact of low-skill jobs varies according to central city residence. Results from model 5 show that among single mothers living in the suburbs, share of

low-skill jobs does not have a statistically significant impact on employment. But for those living in the central city, a 10 percentage point increase in share of low-skill jobs is associated with a 32 percent increase in the odds of employment (i.e., $[(\exp((0.033-0.005)*10))-1]*100 = 1.32$).

Finally, model 6 shows that the impact of the EITC on employment is contingent on education. Among high school dropouts, high school graduates, and women with some college education, the probability of working increases as the EITC increases. College educated women's employment behavior is not significant related to the value of the EITC. These results also suggest that an increase in the EITC has a much larger positive impact on the likelihood of employment among high school dropouts, compared to women with more education, which supports our hypothesis.

Predicted Probability Simulations

In the second stage of our analysis, we determine how much the change in welfare policy, labor market conditions, and the EITC contributes to the observed change in employment over the periods 1991-2000 and 2000-2003. We perform our simulations using estimated coefficients from the seven different models (Model 5 in Table 3 and Models 1-6 in Table 4). Results of this analysis are displayed in Table 5; panel A shows results from 1991-2000 and panel B shows results from 2000-2003.

[TABLE 5 ABOUT HERE]

Our simulation procedure followed three steps. First, we multiplied each "1991 woman's" individual-level characteristics and macro-level characteristics by the estimated coefficients from the given model to arrive at her individual probability of being employed.¹¹ These individual probabilities were then averaged to arrive at the overall probability of

employment for the sample in 1991. We also performed these calculations for respondents in years 2000 and 2003.

Second, we assigned each “1991 woman” the welfare and labor market conditions that she *would have faced* in 2000 given her state and MSA. We also assigned each “1991 woman” the EITC she *would have received* in 2000, given the number of children she had at that time. We “assigned” 2000 variable values only for those variables that had a *significant* impact on employment in the given model. The simulations for the period 2000-2003 were done in a similar way, by replacing each “2000 woman’s” values with values from 2003.

Next, we multiplied each “1991 woman’s” true individual-level characteristics and assigned and/or actual macro-level characteristics with the appropriate estimated coefficients from the model to arrive at her “counterfactual” probability of being employed. The individual counterfactual predicted probabilities were averaged for the entire 1991-sample to determine the overall counterfactual probability of employment in 1991 given the 2000 welfare policies, labor market conditions, and EITC.¹²

Finally, we subtracted the actual probability from the counterfactual probability to determine how the employment levels in 1991 would have changed assuming the 2000 macro-level variable values (e.g., a negative number means employment levels would have been lower and a positive number means employment levels would have been higher). These changes in predicted probability are shown in the first set of columns in Table 5. This difference is then divided by the overall change in employment from 1991 to 2000 to identify the percent of change due to a given factor. These percentages are shown in the second set of columns in Table 5. Each column represents a summary (or range) of the simulation results using the coefficients from the seven different models. Results from each specific model are shown in Appendix A.

We begin with the 1991-2000 period (see panel A in Table 5). In 1991, actual employment probabilities of black and white single mothers were 49 and 71 percent, respectively. In 2000, their employment probabilities were 69 and 83 percent, respectively (see Table 2), increases of 20 and 12 percentage points. These are the differences we wish to explain. Three main results emerge from our analysis.

First, welfare reform generally, TANF-implementation specifically, is related to very small increases in the percentage of single mothers who are employed, and the increase is similar for blacks and whites. For blacks, the TANF simulation shows that employment would increase 2-4 percentage points in 1991 and so explains between 9-20 percent of the overall change in employment from 1991-2000; for whites, the TANF simulation shows that employment would increase 1 percentage point in 1991 and so explains between 8-12 percent of the overall change in employment. Although blacks are slightly more likely to live in “high sanction” TANF states, we find that “high sanction” TANF has no impact on employment. Only moderate sanctions have an impact on work, and whites and blacks are equally likely to live in moderate sanction states. Therefore, the use of the coefficients from the “TANF severity” model in the simulations does not produce different results by race (see Appendix A).

Furthermore, even though blacks in our sample are more likely than whites to be high school dropouts and never married, and TANF positively impacts *only* the employment of dropouts and never marrieds, the change in blacks’ and whites’ predicted probability of employment due to TANF implementation is only slightly higher for blacks when coefficients from these interactive models are used. One reason for this result is that, with non-linear models, the impact of a change in x (e.g., TANF) on the probability of y (e.g., employment) is dependent on: (1) the amount of change in x , (2) the starting value of x , and (3) the values of all other

variables in the model (see Long 1997). In our TANF simulations, conditions 1 and 2 are equal for blacks and whites, but condition 3 is not. In other words, because blacks and whites are not at the same place on the probability curve, on average, even if the change in the predicted *logit* of employment for blacks was, for example, twice that of whites, this does not mean that the change in the predicted *probability* of employment will also be twice as large. But it is important to see how these changes affect the *probability* of employment, since that is where our substantive interest lies. Another likely reason that large race differences don't emerge in our simulations is that (1) the racial differences in means (dropouts and never married) are not large enough and/or (2) the impact of the TANF coefficients (TANF*dropouts and TANF*never married) on employment are not large enough to produce radically different results in the simulation procedure.

Our second main finding is that labor market conditions, unemployment rates in particular, also explain a relatively small percent of the rise in employment among single mothers. Again, our results are similar for blacks and whites. Using the 2000 counterfactual unemployment rates in the prediction shows that blacks employment in 1991 would be 2 percentage points higher, explaining 11 percent of the overall change between 1991-2000 for blacks. For whites, the predicted probability of employment would also be 2 percentage points higher, and so change in unemployment rates explains between 14-15 percent of the change between 1991-2000 for whites. Although our findings do show that blacks are more likely than whites to live in the central city, and individuals living in the central city are the only ones to be affected by the share of low-skill jobs, we found that the change in low-skill jobs explained little of the change in employment rates for blacks or whites. This is because the share of low-skill

jobs changed very little over time (see Table 2), and the impact of low-skill jobs on employment was pretty small.

Third, we find that the EITC played the largest role in explaining increases in employment of black and white single mothers between 1991 and 2000. For instance, if the EITC of 1991 mirrored that of 2000, we would predict the employment probability to have been between 4-5 percentage points higher for single black mothers and 4 percentage points higher for single white mothers. Thus, changes in the EITC explain roughly 23-26 percent and 27-33 percent of the increase in employment for black and white single mothers, respectively. Our results show that the increase in the predicted probability of employment using the counterfactual EITC is only slightly higher for blacks, despite the fact that (1) blacks have more children than whites, (2) a higher proportion of blacks are high school dropouts, (3) the EITC is larger in magnitude for mothers with more children, and (4) employment behavior among dropouts appears to be the most sensitive to changes in the EITC (see Model 6, Table 4). Again, we speculate that the racial differences in the EITC value, racial differences in the percent of high school dropouts, and the differential impact of EITC by education are all not large enough to produce substantially different results by race. Also, as mentioned before, the two groups are at different places on the probability curve, and so a larger change in the logit for blacks does not necessarily translate into a larger change in the predicted probability of employment.

Taken together, if welfare policies, labor market conditions, and the EITC of 1991 mirrored those of 2000, we would predict the employment probability of single black and white mothers to have been 7-11 and 5-7 percentage points higher, respectively. Thus, these macro-level characteristics account for at most 36-56 percent of the increase in employment probabilities of single black mothers and 41-58 percent of the change in employment observed

among single white mothers. For both groups, the unexplained difference could be attributed to changes in individual characteristics, such as human, family, and financial capital, or to changes in other unmeasured macro-level factors. All in all, our results show that blacks' employment in 1991 would increase slightly more than whites if the macro-level conditions of 1991 were like those of 2000. These factors do not explain a higher proportion of the change in employment from 1991-2000, however, because blacks employment increased significantly more than whites over this period.

Our results from panel B decompose the trends in employment from 2000 to 2003. In 2003, the employment probabilities of blacks and whites were 68 and 77 percent, respectively, decreases from 2000 of 1 and 6 percentage points. Because the welfare measures do not change at all between 2000-2003, they cannot, by definition, contribute to the change in employment during these years. The role of low-skill jobs and the EITC both played very minor roles in explaining the decline; the EITC actually *increased* the unexplained component in some of our simulations. This is due to the fact that the average EITC value increased slightly during this period (by about \$100) and the EITC measure has a positive effect on the likelihood of employment in our models. The most important explanation for the decline in the employment level during these years, not surprisingly, was the increase in unemployment rates. Using the 2003 counterfactual unemployment rates in the prediction shows that employment in 2000 would have been 2 percentage points lower for both groups, and this change explains roughly half of the decline.

DISCUSSION AND CONCLUSION

Over the 1990s, black and white female heads with children experienced a dramatic rise in rates of employment unparalleled by any other subgroup of women (or men for that matter).

Beginning in 2000, white single mother's employment fell somewhat, but black single mothers' employment remain relatively constant. The overall rise in employment corresponded to three important macro-structural developments, federal and state welfare reforms, a long economic expansion, and radical changes in the EITC. Given the simultaneity of these occurrences, three questions warranted consideration: (1) What effects have welfare policies, labor market conditions, and the EITC had on the probability of employment for black and white single mothers during the 1990-2003 period? (2) To what extent do changes in these policies, programs and conditions account for the change in employment among single mothers? and (3) Do racial differences in single mothers' individual characteristics lead to different explanations for the differential employment growth by race?

Our results showed that between 1991-2000, the EITC - a financial incentive program that provides refundable tax credits or earnings subsidies to low-income families with children - explained most of the increase in single mothers' employment over time (between 25-30 percent). The EITC had a positive impact on employment in all of our models, and had a stronger impact for those with the least amount of education.

Labor market conditions also accounted for a notable portion of the rise in employment between 1991 and 2000 – about 12 percent - and indicated that single mothers are indeed responding to the structure of labor market opportunities. Not surprisingly, we find that single mothers' employment rises and falls with the strength of the economy, as indicated by the negative relationship between the likelihood of employment and unemployment rates. The share of low-skills jobs had a small positive impact on employment for two sub-groups of mothers - central city residents and high school dropouts. It may be that the indicator of labor market

opportunity used in this study (share of low-skill jobs) changed too slowly to be sensitive to the employment changes we seek explain.¹³

Changes in welfare policies did result in a higher probability of employment among single mothers, but only among those without a high school degree, those who were never married, or those living in a moderate sanction state. Welfare reform explained a similar proportion of the increase in employment as changes in the labor market, but that role varied depending on our model specification. While it appears that new welfare policies pushed recipients off of the rolls and discouraged non-recipients from participation, this should not necessarily be taken as a sign of “success,” because increases in employment say little about the quality of jobs that single mothers now hold. Therefore, we stress the importance of examining other outcomes to determine how single mothers have fared after reforms, given that reforms, while a catalyst for employment generally, have not been shown to be catalysts for finding *good* jobs.

With respect to racial differences, our results showed that, compared to white single mothers, black single mothers are more likely to be high school dropouts, never married, and central city residents. And our results show that policy and labor market changes had a more profound affect on the employment of these groups. However, these demographic differences and interaction effects were not substantial enough to produce radically dissimilar explanations for the changes in employment by race. Our analysis showed that, all in all, changes in these policies and programs increased black single mothers’ employment slightly more than white single mothers’ (in terms of percentage point increases), but because whites’ employment grew less steadily over the 1990s, there was also less growth to explain.

Other trends that unfolded throughout the 1990s also likely pulled single mothers into jobs. For example, between 1990 and 1997, the minimum wage was raised four times to its current level of \$5.15/hour). This programmatic change is controlled for in our models via our year dummies, but because we don't include it as an independent variables we cannot determine whether they have independent effects on employment, and whether they account for a significant part of the increases in employment over time. Although research has been conducted examining the effect of the minimum wage on single mothers' employment, few have considered the effect of all five of these factors in the same study, a much-needed investigation given the likely importance of all for single mothers' employment.

It should also be noted that while welfare reforms may have been a catalyst for labor force participation among high school dropouts, their employment likely would not have increased much without the presence of a strong economy. In other words, the interaction between reforms and the economy likely played an important role in rising employment. In areas experiencing little job growth, it is unlikely that reforms would have led to a substantial rise in the employment of former welfare recipients, although labor force participation would likely have risen. There is also some question as to whether single mothers would have transitioned from welfare to work in areas with a strong economy if reforms had not encouraged them in that direction. Future research should thoroughly investigate these relationships.

ENDNOTE

¹ Figures are based on authors' calculations of the March CPS. "Employment" refers to the employment/population ratio, calculated as the sum of (1) the number working and the number with a job but not working to the sum of (2) the number working, the number with a job but not working, the number looking for work, and the number out of the labor force.

² This is at least in part because while most of these studies rely on the Current Population Survey (CPS) as their primary data source, they vary notably when it comes to the samples used (e.g., all women, single women, or single mothers), predictors included (e.g., welfare benefit levels, EITC, Medicaid, metropolitan statistical areas, unemployment rates, and/or year dummies), time periods covered (waiver period only, TANF only, or both waiver and TANF periods combined), and units of analysis employed (e.g., women, families, states, or MSAs).

³ According to our estimates, between 1991 and 2003, 84 percent of black women and 74 percent of white women lived in MSAs. Among female heads, the distribution is roughly the same.

⁴ As a reliability check of our results, we excluded from the sample those residing in small MSAs (i.e., defined by the authors as those MSAs with fewer than 260 single mothers over the 13 year period 1991-2003). This reduced the number of states from 47 to 32, the number of MSAs from 172 to 48, and the number of individuals from to 35,097 to 21,566. The impact of this exclusion on the results is as follows: (1) share of low-skill jobs had a small, but significant, positive impact on employment in most models, (2) the impact of TANF for high school dropouts was not significant, (3) TANF had a significant impact on employment in high sanction states, but not in moderate sanction states.

⁵ We excluded all single mothers from the sample used to construct this measure because our error terms would be correlated otherwise. Since single mothers only comprised approximately

six percent of the sample, however, the measure is not significantly different than if single mothers had been included. Additionally, we created this measure at the state-level, as opposed to the MSA-level, because the CPS does not survey enough households at the MSA-level to make reliable estimates. We also explored using MSA-level employment data collected by the Bureau of Labor Statistics, but none of the sources offered data on the number of individuals working in given occupations *and* industries for every year of our analysis.

⁶ Because women often leave and re-enter the labor force, this measure is not ideal. Another proxy for previous work experience is *potential work experience*, measured as age minus the number of years of schooling minus 6, the age at which many children begin school, or (age-education-6). However, this measure is problematic because education would then be entered into the regression equation twice: as part of the estimate of experience and as the educational attainment measure. Thus, we include only “age” and “educational attainment” in the model.

⁷ Two points: First, we do not include controls for prior welfare receipt. Leading economists have argued that researchers should in fact not include controls for prior welfare receipt in models like ours because prior receipt is endogenous with employment (Grogger 2003; Schoeni and Blank 2000). Including such a control would thus bias the results. In our analysis, we attempt to identify those most at risk by interacting waivers and TANF with educational attainment, hypothesizing that those with the least amount of education will be impacted the most by reforms. Second, it is not uncommon for studies of this nature to include controls for AFDC benefit levels as single mothers’ employment likelihood may depend on how states’ welfare policies differ. However, inclusion of AFDC benefit levels in our analyses did not change our findings in any way. Thus, for the sake of parsimony, we have chosen not to include this measure in our analyses. However, results will be made available upon request.

⁸ As a reliability check, we estimated our models separately by race and performed statistical tests to determine whether the estimated effects of our main predictor variables differed across race. None of the main predictor variables (welfare, labor market conditions, and EITC) had statistically significant different impacts on employment by race.

⁹ For instance, to determine how much change in the unemployment rate contributed to employment growth for black women between 1991 and 2000, we predict the actual probability of employment of blacks in 1991 and 2000 (using the coefficient estimates from our models). Then we “assign” the women in 1991 the unemployment rates they would have faced in 2000, given their MSA, and calculate a counterfactual predicted probability. The *actual* 1991 employment probability is subtracted from this *counterfactual* employment probability, and this number is divided by the actual change in employment between 1991 and 2000.

¹⁰ At the bottom of Table 3, we show the “random effects” of the MSA-level intercept, the State-level intercept, welfare waivers, and TANF. The first two random effects indicate that there is significant variability among MSAs and states with respect to average employment levels of single mothers. The next two random effects indicate that significant variation exists among states in the *effect* of both waivers and TANF.

¹¹ In order to incorporate the random effects in our predicted probabilities simulations, we needed to randomly select a “random effect” from our distribution and then estimate the predicted probability of employment for each woman given this random effect. Because the random effect will be different with each “draw,” we repeated this procedure 100 times, and then averaged the 100 distinct predicted probabilities to arrive at a final predicted probability of employment for each woman.

¹² We could not use the same procedure for the individual-level characteristics (education, age, etc.) because the CPS data do not allow us to follow the same women over time. Furthermore, we could not simply predict the probability of employment in 1991 using the “average” individual characteristics in 2003 because the predicted probability at the mean of a variable does not equal the average of individual predicted probabilities when the model is non-linear, as is the case with the logit model.

¹³ One indicator of labor market opportunity that might help to explain single mothers’ employment increases is wage levels. Women may have increased labor market participation less because job opportunities increased than because opportunities became more economically attractive, making unemployment too costly. And while there is substantial evidence that wages did rise substantially, data limitations precluded us from examining this question in this study. The Bureau of Labor Statistics only began collecting MSA-level wage data in 1997. Because this study spans 1991-2003, missing data make this measure inadequate for our purposes.

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