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ABSTRACT

The potential effects of raising the minimum wage on the earnings of mothers moving from welfare to work were examined by analyzing the differences that existed in the late 1980s in the various states' minimum wage rates and data from three waves of the Survey of Income and Program Participation for the years 1985-1990 (during which time 13 states had minimum wages set above the federal level). Increases in the minimum wage were found to have had significant negative effects on the work patterns of mothers receiving Aid to Families with Dependent Children. Half the welfare mothers residing in states that did not raise their minimum wage reported working at some time during the 6 years studied versus only 40% of the welfare mothers in states that had raised their minimum wage. Increasing the minimum wage resulted in a 44% longer duration on welfare. It was concluded that increases in the minimum wage intensify competition for low-skill, low-wage jobs. Increases crowd out the least skilled workers, including mothers attempting to leave welfare, by raising the educational qualifications for marginal workers to high school graduation. (Contains 11 tables and 60 references. Appended are definitions of variables used in the tables and information about the state minimum wage panel data set.) (MN)

EMPLOYMENT POLICIES INSTITUTE FOUNDATION

JOBS TAKEN BY MOTHERS MOVING FROM WELFARE TO WORK AND THE EFFECTS OF MINIMUM WAGES ON THIS TRANSITION

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Executive Summary

Raising the earnings of welfare recipients, primarily women attempting to move into the workforce, remains the chief obstacle in reforming the welfare system. One widely discussed option has been to raise the minimum wage. Advocates of higher minimum wages call for an increase in order to make work more attractive and create sufficient monetary incentive for individuals to leave the welfare system and move into the workforce. While much has been written about job losses and the aggregate labor force, until now, little was actually known about how minimum wage increases affect the employment status of welfare recipients.

To examine this issue, Peter Brandon of the Institute for Research on Poverty exploited the differences that existed in the late 1980s in the various states' minimum wage rates. (These inter-state differences in minimum wages have formed the core of much of the recent research on the effect of minimum wages.) He found that increases in the minimum wage had significant—and negative—effects on the work patterns of mothers receiving Aid to Families with Dependent Children (AFDC), the largest federal welfare program. Half of the welfare mothers residing in states which did not raise their minimum wage reported having worked at some time during the six years covered by the survey data. But only 40 percent of welfare mothers in states which raised their minimums reported periods of employment.

Differences in work status between states that did and did not raise their minimum wages are not explained by differences in disability status, marital status, or subsequent births.

Not surprisingly, the decrease in work was matched with an increase in time spent receiving welfare benefits. The average length of time spent receiving welfare benefits (in any given spell of benefits receipt) was 14.5 months for the entire sample. But in states which raised their minimum wages, the average time spent on welfare was 19.5 months, compared to 13.5 months in states that did not raise their wage floor. Increasing the minimum wage resulted in a 44 percent longer duration on welfare.

Why should an increase in the minimum wage reduce work effort? To understand this, one needs to look at the reactions of the entire labor market and not just of one subgroup—welfare mothers. Higher minimum wages indeed make work more attractive and lead more individuals to compete for these jobs. But in the absence of an increased demand for minimum wage workers (an unlikely response to higher costs) there can be no overall increase in employment. The effect of higher labor supply, constant labor demand, and wages which are prohibited from falling is that employment opportunities go to those with the best skills. We are left with a labor market that crowds out the least skilled workers—in this case, the mothers attempting to leave welfare.

The jobs taken by women leaving welfare comprise a cross-section of entry-level jobs. As such, they are particularly sensitive to this crowding-out problem. Nearly 70 percent of mothers who left welfare and found a job held either a service or a Technical, Sales, and Administrative Support (TSAS) job. (About a quarter of TSAS jobs were as waitresses or bartenders, a fifth were cashier/sales jobs, and another fifth were as nurses aides, orderlies and attendants). Many of these are the same jobs frequently filled by students and teens—members of the labor force who have the flexibility to enter and exit the workforce in response to wage changes when work is made more attractive.

These findings are particularly troubling since higher minimum wages have been advocated as a means of making work more attractive so that it serves as an inducement to leave the welfare system and join the workforce. The unfortunate reality is that transitions from welfare to work are not aided by increased labor market competition for an, at best, unchanged number of jobs. The skills that will allow welfare leavers to advance beyond the minimum wage will not be learned if that entry-level job cannot be acquired.

Data Sources

This report used three waves of the Survey of Income and Program Participation (SIPP). SIPP provides detailed information on work history, family status, size and composition, and income. Most importantly, the families followed by SIPP provide detailed information on participation in the various income transfer programs. Data is collected on every member of the household. Surveying of households is done three times a year. Together, the three SIPP waves provide data for the period October 1985 through March 1990. During that time 13 states had minimum wages set above the federal level.

Carlos Bonilla
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Overview

Two important aspects of welfare-to-work transitions remain obscure: the kinds of jobs held by former AFDC recipients, and the impact of higher minimum wages on their employment prospects. This study will provide information on both subjects, thereby making an important contribution to our knowledge about mothers on welfare.

Many people assume that the majority of former welfare recipients who enter the labor force work in low-paying service or retail industry jobs. Not enough data exist, however, to support this assumption, although it is known that many former welfare participants want to work[1] and that many work when they receive welfare.[2] One qualitative study conducted in Chicago[3] reported that women receiving AFDC supplemented that income with earnings from bartending, catering, child care, and sewing.

Research also suggests that certain groups of mothers are more prone to welfare dependency, partly because they experience failures in the labor market. These women are usually poorly educated,[4] inadequately skilled,[5] and living in substandard housing.[6] Their characteristics diverge from the characteristics of AFDC mothers who succeed in the labor market. Mothers who successfully work their way off AFDC[7] generally possess higher levels of education and have prior work histories.[8]

Not only is there no empirical proof that the mass of former welfare recipients hold jobs in the service and retail industries; past studies have not told us what industries and occupations they work in at all. One reason for this is that single mothers who collect AFDC receive a lot more attention than single mothers who work.[9] Nevertheless, some information is available on the industries and occupations in which *low-income women* work; some of these women may have been former AFDC recipients. The current findings mainly document the occupational mobility and the wage gains low-income black women have made over the past 50 years relative to their white counterparts.[10]

Today, as opposed to 40 years ago, low-income black women work in the same industries and occupations as low-income white women. In 1950, most low-income white women were full-time homemakers. Low-income black women, in contrast, worked outside the home in large numbers. Two-fifths of all black women worked as household domestics and another fifth worked as cafeteria personnel.[11]

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1 Goodwin, 1983; Tienda, 1990.
2 Pearce, 1978; Tienda, 1990; Garfinkel and McLanahan, 1986; Jencks, 1991.
3 Jencks and Edin, 1990.
4 Bane and Ellwood, 1983.
5 Duncan, 1984; Ellwood, 1986; O'Neill *et al.*, 1984; O'Neill, Bassi, and Wolf, 1987.
6 Wacquant and Wilson, 1989.
7 Marriage has been found to offer the most common exit route off welfare (Ellwood, 1988).
8 Plotnick, 1983; Bane and Ellwood, 1983.
9 Jencks, 1992.
10 Levy, 1988.
11 Levy, 1988.

By 1980, low-income black women had shifted dramatically into the occupations that had been traditionally held by low-income white women. Between 1950 and 1980, the proportion of black women in domestic work had declined to less than 5 percent, while the proportion in clerical work, health care, and sales grew from 7 to 43 percent.[12]

Black women's enhanced occupational attainments over time have benefitted them in many ways. One such way is that the earnings of black women are now comparable to the earnings of white women who have similar characteristics. Levy[13] has shown that as early as the mid-1970's black and white women of similar age and education had equal earnings. Still, some observers, like Harrison and Bluestone, claim that even if groups of black and white women have equivalent earnings, most of the jobs taken by the less-skilled women are "bad jobs" that keep them impoverished. They argue that these jobs pay low wages, offer few benefits, and provide no incentives for advancement.[14]

Though many studies argue that raising minimum wages jeopardizes the employment prospects of low-wage workers, none has shown the effects of minimum wages on welfare-to-work transitions or the effects of increases in minimum wage levels on welfare-to-work transitions.

An informed assessment of the quality of jobs taken by low-income, less-skilled AFDC mothers requires better data capable of performing two tasks: (1) revealing the distribution of industries employing former AFDC mothers; and, (2) showing the array of occupations these mothers have taken. This study uses such data and performs both tasks. The resulting knowledge also supplements an existing set of facts that merely documents the proportion of poor women—not necessarily poor mothers who also received welfare—working in low-skill, low-income jobs.

Thus, existing data on the distribution of occupations and industries among former AFDC mothers are incomplete. The same statement applies to the effects of minimum wages on AFDC mothers' employment possibilities. Though many studies argue that raising minimum wages jeopardizes the employment prospects of low-wage workers, none has shown the effects of minimum wages on welfare-to-work transitions or the effects of *increases* in minimum wage levels on welfare-to-work transitions.

[Welfare] mothers ... remain a major subgroup that legislators surely hope will benefit from, not be disadvantaged by, increases in the minimum wage.

Economic theory suggests that setting minimum wages above the prevailing wage in competitive labor markets increases the cost of labor and, all else equal, will lead firms to demand less labor, thereby reducing employment opportunities for low-wage, low-skill labor.[15] If AFDC mothers work in low-wage jobs or if they seek work in low-wage industries while receiving AFDC, they too would encounter the same disemployment effect that minimum wages impose on other groups of low-wage, low-skill workers.

Admittedly, most minimum wage workers are not AFDC mothers heading households. Rather, most are young, not poor, and work only part-time.[16] But even if poor female heads are a minority among all

12 Levy, 1988.
13 Levy, 1988.
14 Harrison and Bluestone, 1988.
15 A huge literature exists on the effects of minimum wages on employment opportunities of low-wage workers. The articles referenced either reported new results or reviewed the state of knowledge at the time they were written: see Lester (1946), Gramlich (1976), Mincer (1976), Welch and Cunningham (1978), Parsons (1980), Brown *et al.*, (1983), Freeman *et al.*, (1981), Brown (1988), Brown *et al.*, (1982), Neumark and Wascher (1992).
16 Stigler and Raisian, 1988.

minimum wage workers, many are working to leave welfare or replace AFDC payments with earnings. Those mothers, who were part of about one million poor female-headed households in 1986,[17] remain a major subgroup that legislators surely hope will benefit from, not be disadvantaged by, increases in the minimum wage.

Most economists agree that minimum wages increase unemployment among unskilled workers,[18] that most welfare mothers work in low-wage jobs,[19] and that the effects of minimum wages on AFDC mothers' employment chances while on welfare (and employment prospects once off welfare) are unknown.[20] Despite such agreement, the amount of economic research on the relationship between minimum wages and the employment of poor, welfare-dependent mothers is paltry. And, the lack of knowledge persists in spite of the ramifications such research would have for welfare policy formulation and the literature on minimum wages.

Policymakers need to know if minimum wages, which increase the cost of low-skilled labor, reduce the number of AFDC mothers who can work their way off welfare. If so, minimum wage hikes increase the cost of the welfare system. Furthermore, affected AFDC mothers may lose on-the-job training opportunities that could increase their earnings and promote their job security.

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In addition, some policymakers reforming the eligibility rules for the AFDC program argue that including tougher work requirements is essential.[21] Work, they argue, develops AFDC recipients' job skills and promotes their economic self-sufficiency.

Few would argue against the financial and personal rewards work can bring. (There is no evidence that such rewards accrue to low-skilled mothers receiving AFDC.) Yet the benefits from working are reaped over time, not by merely attaining a job. For AFDC mothers to realize gains from working, a number of factors supporting their continued attachment to the labor market must be present.

Some of those factors they can control. Child care provision, for example, is one item AFDC mothers can choose to maximize their work effort. Other factors, however, are beyond their control and may even constrain their work effort. Two are increases in minimum wages and economic downturns causing retrenchment among low-wage workers.[22] Either one could lessen the number of hours AFDC mothers work or could sever their attachments to the labor force. Either event may result in AFDC mothers losing the benefits from working, possibly discouraging some from future job searches.

Findings indicating that minimum wages adversely affect AFDC mothers' employment prospects would cast further doubt on the effectiveness of minimum wages as an antipoverty device. The literature already refers to some scholars' reservations about the potential of minimum wages to alleviate poverty. Blank[23] suspects that minimum wages are "badly targeted as an antipoverty device," while

17 Mazur, 1987.
18 Alston *et al.*, 1992.
19 Ellwood, 1988.
20 Presumably, most economists have conjectured that it is fruitless to pursue this topic because few mothers should choose minimum wage jobs with no benefits over higher welfare benefits accompanied by in-kind transfers.
21 Danziger *et al.*, 1994.
22 Tobin, 1994.
23 Blank, 1994.

Horrigan and Mincy[24] question the impact that minimum wage increases have on redistributing income. As we shall see, evidence from this study further questions the wisdom of using minimum wages to fight poverty.

Data and Methodology

The analyses use data from the Survey of Income and Program Participation (SIPP), a longitudinal survey of a random sample of the U.S. population. The 1986, 1987, and 1988 panels of the SIPP were used, each of which contains four rotation groups spanning the period from October 1985 through March 1990. Each rotation group provides information on 24 or 28 consecutive months. Each wave of the survey was collected every four months, so each participant was interviewed three times a year about his or her monthly experiences over the previous four months. Thus, the data provide monthly information on household composition, labor market behavior, and income sources.

The SIPP is particularly useful because it has monthly, longitudinal information on the welfare participation and labor market experiences of women. Possessing monthly (rather than yearly)[25] data on welfare receipt and employment makes analyses of welfare-to-work transitions more accurate, although the length of time to study one or subsequent transitions is quite limited.

Combining the three SIPP panels yielded a sample of 11,875 black and white women who reported that they were mothers (or guardians) of children under the age of 18.[26] About 90 percent of them (N = 10,743) reported no receipt of income from the Aid to Families with Dependent Children (AFDC) program. (In such cases it is possible another household member received AFDC income, but for the purposes of this study knowing whether the mothers received AFDC is the vital fact to establish.) From this sample of mothers, 1,132 reported receipt of AFDC income for at least one month of the panel period.

The subsample of mothers who ended a spell of AFDC receipt and who had employment coinciding with, or subsequent to, the end of that spell was obtained from the group of welfare mothers who reported receiving AFDC benefits for at least one month of the survey period. That subsample of interest numbers 450 mothers, for whom a record of their attachments to the labor market was created. The occupations they took, the industries they entered, the states they lived in, and the number of jobs they worked were added to information collected on their demographic characteristics. This set of variables generated a source of data that precisely describes what types of occupations and industries these former AFDC mothers entered, as well as the number of jobs they had and how long each of those jobs lasted.[27]

The subsample of mothers used for analyses of the effects of minimum wages on welfare-to-work transitions is different. It consists of a panel of single mothers who either ended a spell of AFDC receipt or were always on AFDC. They were drawn from the 1,132 mothers who reported one or more months of AFDC receipt. These single mothers contributed 1,302 spells of AFDC participation. Those spells, rather than the mothers themselves, were the units of analysis. (A small fraction of mothers reported returning to AFDC within two months. If no change was measured in either income or family composition during those two months, it was assumed these short AFDC exits reflected administrative churning and closed the gap between the two spells.)

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24 Horrigan and Mincy, 1993.

25 Another commonly used data set, the Panel Study of Income Dynamics, provides yearly data on welfare receipt and employment.

26 Hispanics and other ethnic groups in the SIPP are excluded from these analyses.

27 To make interpretation of the results easier, the three-digit industry and occupation codes were collapsed into ten and six broader categories, respectively.

Combining the three SIPP panels provided much information on a number of single mothers who ended AFDC participation.[28] Still, because of the construction of the SIPP, there was a limit of 24 or 28 months of data on each sample member. The weakness of the SIPP is that it disallows analyses of long-term welfare participation. Many single mothers were receiving AFDC when they were first interviewed (N = 344). Not knowing if this was a protracted spell of AFDC or if it was one of many short spells may have biased, to some degree, the estimates of exit rates presented here. In retrospect, each SIPP survey should have queried respondents about the timing and duration of any past use of public assistance, even if they were not currently receiving assistance.

For the mothers contributing 1,302 spells, a record of their experiences in the labor market, changes in their household composition, and shifts in their sources of income was created. Durations of jobs, occupations, and housing arrangements, as well as numbers of co-residing children, were added to information collected on their demographic attributes. Together, the variables portray the experiences of AFDC mothers who ended a spell of AFDC receipt or received AFDC for the entire panel period.

Four ways in which welfare participation could have ended were identified: (1) by increased earnings that made the mother ineligible for AFDC; (2) through a marriage; (3) by losing dependent children;[29] or (4) by remaining on AFDC for the entire panel period (i.e., becoming right censored).

...the vast majority of mothers making the welfare-to-work transition begin employment in either service industries, retail trade, or manufacturing... Nearly 70 percent of mothers who left welfare and found a first job held service occupations or technical, sales, and administrative support occupations.

Blank and Ruggles (1994) call the second and third types of terminations "demographic endings," and so do I, although becoming ineligible for AFDC through marriage is quite different than becoming ineligible through losing children. Furthermore, a child can reappear and a marriage can end; either event would reactivate eligibility for AFDC. Indeed, of the mothers who terminated their welfare spells through marriage, 6.6 percent of those marriages broke up before the end of the survey, triggering new spells of single motherhood and renewing the risk of returning to AFDC.

Apart from adapting the SIPP data to meet the aims of the project, information on state minimum wages was collected as well. Once assembled, those data were also modified so that they spanned the same period as the combined SIPP panels and so that overlaying them on the SIPP panel data set was possible.

Then, state minimum wage data were appended to each individual that lived in that state. When an increase in the state minimum wage occurred during the period under study, that increase and the amount of the increase were recorded and added to each individual's record. Integrating these two data sources resulted in one source of data that contained the timing of changes in state minimum wages and the timing of changes in AFDC participation status. (Appendix B discusses the creation of the state minimum wage panel data and their use with SIPP data.)

Findings

Tables 1 through 6 show that most former welfare recipients work in low-paying service or retail industry jobs. In Tables 7 and 8 results are displayed showing that minimum wages lower the rate at which AFDC mothers leave the AFDC program. (Table B1 defines the variables appearing in tables 1 through 6, while Table B2 defines the variables appearing in Tables 7 and 8.)

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28 Concurrent work is examining attrition from the SIPP. I find some evidence suggesting that attrition is most common among single, low-income mothers. If true, future work will deal with this attrition problem.

29 By losing a child, I mean that the child enters adulthood or moves away from the household.

Table 1 shows that about a third of the mothers ending a welfare spell were employed in the service industry. Regardless of whether it was their first, second, or third job after their participation on AFDC, many worked in service industries. Additional analyses on the three-digit industry codes, not shown in Table 1, indicated that many of these service-industry jobs were at hospitals, nursing and personal care facilities, elementary and secondary schools, and hotels and motels. Together, those types of service industry jobs represented about 56 percent of all the service-industry jobs identified in these data.

Table 1

Industries Where Former AFDC Recipients Are Employed: Primary Job (By Job Spells)

Industry	First Job Spell	Second Job Spell	Third Job Spell
Agriculture	0.90%	1.40%	2.00%
Construction	0.7	0.7	1
Manufacturing	18	13.8	18.7
Trans/Comm	1.8	2	4.1
Wholesale trade	3.1	2	1
Retail trade	27.8	32.6	23.9
Financial/Real estate	3.1	4.1	6.2
Business/Repair	8	0.6	9.3
Service	33.3	34.6	32.2
Public sector	3.3	2	1
N =	450	144	96

Source: Survey of Income and Program Participation (SIPP) (1986, 1987, and 1988 panels)

The table also indicates that most of the other jobs were found in retail trade or manufacturing industries. At least one-fifth of these women found work in the retail trade industries, while another 13 percent of them found jobs in manufacturing. Furthermore, nearly half of the retail trade jobs were at eating and drinking places (about 49 percent). A quarter of the manufacturing jobs were in the apparel and accessories (except knit) sector of nondurable goods manufacturing (about 26 percent).

Table 2

Industries Where Former AFDC Recipients Are Employed: Secondary Job (By Job Spells)

Industry	First Job Spell	Second Job Spell
Agriculture	3.70%	2.90%
Construction	2.2	0
Manufacturing	12.8	20.5
Trans/Comm	2.2	8.8
Wholesale trade	0.7	2.9
Retail trade	36.1	35.3
Financial/Real estate	3	0
Business/Repair	5.2	14.3
Service	32.3	14.6
Public sector	1.5	0.6
N =	133	34

Source: SIPP (1986, 1987, and 1988 panels).

Clearly, findings in Table 1 suggest that the vast majority of mothers making the welfare-to-work transition begin employment in either service industries, retail trade, or manufacturing. Even if their first job ends, these data suggest that if they work again, they are most likely to work in one of these three industries.

Investigations of these data also reveal that 133 of these mothers held two jobs simultaneously at some point. Choice of one's second job is probably highly correlated with choice of one's first job. So, it is not surprising that sorting patterns among industries for secondary jobs mimic the sorting patterns among industries for primary jobs. Table 2 shows that the 133 mothers with second jobs sorted into the same industries where primary jobs were found. Among former welfare mothers working second jobs, most of them worked in service, retail trade, or manufacturing industries. In fact, most found these sec-

Table 3

Occupations In Which Former AFDC Recipients Are Employed: Primary Job (By Job Spells)

Occupation	First Job Spell	Second Job Spell	Third Job Spell
Mang/Profess	6.00%	11.80%	9.50%
TSAS	33.6	27.1	34
Service	36.2	35.4	26.1
Agriculture	0 7	1.3	2.6
Craft and Repair	2.7	4.2	3.8
Laborers	20.9	20 1	22.5
N =	450	144	96

Source: SIPP (1986, 1987, and 1988 panels)

ond jobs in the retail trade sector, presumably at eating or drinking places if the trend in Table 1 repeats itself.

Table 3 reveals which occupations these women are most likely to hold. Nearly 70 percent of mothers who left welfare and found a first job held service occupations (36.2 percent) or technical, sales, and administrative support (TSAS) occupations (33.6 percent). About a fifth of the TSAS occupations were cashier/sales occupations; another quarter, thereabouts, were bartender and waitress occupations; and approximately another fifth were as nursing aides, orderlies, and attendants.

A sizable minority of these mothers also found positions as operators, fabricators, and laborers. Table 3 shows that about 20 percent of the sample worked under the general category referred to here as "laborers." This classification does not necessarily mean manual labor. Rather, when the occupational data were arrayed according to the three-digit occupation codes, most of these women were found to work as packagers, sewing machine operators, and assemblers of one type or another.

The mean observed length of AFDC spells for the full sample was 14.5 months. However, spells coinciding with increases in minimum wages were, on average, 6 months (or 40 percent) longer.

Table 4 reinforces, yet again, the tendency for secondary job industry and occupation characteristics to resemble primary job industry and occupation attributes. While the sample size was noticeably smaller, the occupational groupings were basically unaltered. Mothers that obtained secondary jobs after AFDC participation worked in either TSAS, service, or laborer occupations.

Table 4

Occupations In Which Former AFDC Recipients Are Employed: Secondary Job (By First Job Spell Only)

Occupation	First Job Spell
Mang/Profess	8.20%
TSAS	35
Service	33.8
Agriculture	3.7
Craft and repair	2.2
Laborers	16.5
N =	133

Source: SIPP (1986, 1987, and 1988 panels)

The data in Tables 1 through 4 provide important information about where these mothers worked and what types of duties they performed. Equally useful are data indicating whether the characteristics of these women differentially affected the industries and occupations they entered after having received welfare. Tables 5 and 6 give a statistical portrait of the characteristics of the mothers by industry and occupation.

Table 5 displays the traits of former welfare recipients according to four industry categories: manufacturing, retail trade, business and repair, and service. Other industry categories, like construction and agriculture, were excluded from the table because sample sizes were very small, sometimes fewer than 30 mothers.

Table 5

Characteristics of Former AFDC Recipients by Major[a] Industry[b]

Characteristics	Manufacturing	Retail Trade	Business/Repair	Service
White	64.2%	76.0%	66.6%	64.6%
Full-time	56.7	27.2	38.8	29.2
Part-time	6.1	28.8	27.7	19.2
Full & Part-time	37	44	33.3	51.3
Age	29.07	28.6	29.5	31.8
H.S. grad	75.3	69.6	66.6	70
Female head	54.3	44	55.5	52.6
Household income	$1,259.40	$1,089.00	$1,069.59	$1,178.95
Hours worked	21.6	18.7	17.5	21.5
Earnings	$375.00	$274.80	$202.77	$386.83
Persons in household	4.06	3.78	3.91	3.86
Have school-aged children	66.6	62.4	61.1	74.6
N =	81	125	36	150

Source: SIPP (1986, 1987, and 1988 panels).

a Industries that contained 10 percent or more of mothers in the sample.

b Computed for first job spell only.

Two patterns are evident. First, those who found work in retail trade were more likely than others to work part-time, be white, be younger, live with fewer people, have been married, and, except for workers in the business and repair industry, have lower monthly earnings. Second, those employed in service industry jobs were more likely than others to mix full- and part-time work, be black (except for workers in the manufacturing industry), be older, work more hours (except for those in manufacturing), have school-aged children, and have the highest monthly earnings.

Across the four industries, manufacturing was the most likely to hire former welfare mothers possessing a high school diploma, followed by the service industry. Mothers working in business and repair were those who were least likely to have graduated from high school. More than 32 percent of them did not have a high school diploma.

To complete the portrait, Table 6 displays the characteristics of mothers according to four occupational groups. Other occupations were excluded for the same reason industry groups were excluded from Table 5. The four occupational groups are managerial/professional, TSAS, service, and laborers.

As expected, few mothers entered managerial/professional occupations, and Table 6 highlights

Table 6

Characteristics of Former AFDC Recipients, by Major Occupation

Characteristics	Managerial/ Professional	TSAS	Service	Laborers
White	81.5	65.5	69.9	65.9
Full-time	44.4	32.3	24.4	46.7
Part-time	7.4	19.8	25.7	11.6
Full & Part-time	48.1	37.7	49.7	41.4
Age	35.2	29.6	30.6	29.3
H.S. grad	88.8	66.8	73.2	73.4
Female head	48.1	56.9	49	43.6
Household income	$1,487.88	$1,303.97	$1,029.66	$1,259.67
Hours worked	25.9	21.04	19.91	19.95
Earnings	$641.21	$413.00	$304.84	$330.04
Persons in household	3.4	3.75	3.92	4.34
Have school-aged children	66.6	66.8	68.7	69.1
N =	27	151	163	94

Source: SIPP (1986, 1987, and 1988 panels)

Note: Major occupations are those that contained 10 percent or more of mothers in the sample. Occupations computed for first job spell only.

how very different they were from the mothers in the other three groups. Their monthly earnings and household incomes were much higher; they were mostly white, (the vast majority of whom had a high school diploma); and most were older women working many more hours than their counterparts in other occupations.

Mothers who worked in TSAS occupations were more likely to have been always heading a family, be black, and have failed to graduate from high school. On the other hand, they worked longer hours, and thereby earned more, than mothers who worked in service or laborer occupations.

Table 7

Characteristics of Single Mothers on AFDC by Status of Resident State's Minimum Wage

	All Spells	Spells in States With an Increase in Minimum Wage	Spells in States Without an Increase in Minimum Wage
White (%)	60.7	78.7	56.6
Age	50.1	56.2	49.7
Never married (%)	57.2	55.4	57.6
Education	10.85	11.2	10.7
Disabled (%)	14.1	13.7	14.2
No work (%)	42.5	54.1	39.9
Othinc	554.36	447.07	578.61
Mean spell length	14.5	19.5	13.5
Post child	20.8	20.4	20.9
N =	1,302	240	1,062

Source: SIPP (1986, 1987, 1988 panels).

Table 6 completes the findings for the first part of the project. Results for the second part of the project are contained in Tables 7 and 8. Table B1 defines the variables used in those analyses.

Before showing the effects of minimum wages and of increases in minimum wage levels on AFDC program exits, the differences between AFDC mothers living in states that increased minimum wage levels and states that did not are first documented.

Table 7 shows that increases in minimum wages happened in about 20 percent of the 1,302 AFDC spells. The mean observed length of AFDC spells for the full sample was 14.5 months. However, spells coinciding with increases in minimum wages were, on average, 6 months (or 40 percent) longer.

Results from Table 7 also show that mothers who faced increases in minimum wages while receiving welfare were more likely to report no labor force participation. Over 50 percent of them stayed out of the labor market, compared to only 40 percent of those who received AFDC and whose AFDC spell did not coincide with minimum wage increases. The divergence in labor force participation rates between the two groups is not explained by differences in disability status, marital status, or subsequent births.

Results contained in Table 7 suggest that increases in minimum wages may affect AFDC exits. The economic argument—that by increasing the cost of low-skilled labor, minimum wages lower the probability that mothers receiving AFDC exit through employment—is further developed within a competing risk framework.[30] The duration models, detailed in Table 8, distinguish between those who ended their AFDC spell through work and those who ended AFDC spells through demographic changes.

30 Mothers exiting welfare can do so in alternative ways. A competing riskframework adjusts for the alternative exit routes and hence in the nonparametric duration models those women leaving welfare through demographic changes are considered censored.

The chief difference between Tables 7 and 8 is that Table 8 shows the effects of minimum wages, holding the effects of other independent variables constant.

In Table 8, three alternative models show the effects of minimum wage levels and increases in minimum wages separately, and then the effect of each variable when entered into the same model. Thus, in Table 8, Model 1 shows the effect of *increases* in minimum wages on AFDC exits; Model 2 shows the effect of minimum wage *levels* on AFDC exits; and Model 3 shows the *joint effects* of minimum wage levels and increases in those levels on AFDC exits. The variables measuring minimum wage levels and increases in those levels yield alternative estimates of the exit rate from the AFDC program, depending upon whether they are jointly or separately entered.

...mothers who faced increases in minimum wages while receiving welfare were more likely to report no labor force participation. Over 50 percent of them stayed out of the labor market, compared to only 40 percent of those who received AFDC and whose AFDC spell did not coincide with minimum wage increases ... [deviations are] not explained by differences in disability status, marital status, or subsequent births.

Model 1 in Table 8 shows that increases in levels of state minimum wages lowered the rate at which mothers left the AFDC program. The estimated negative coefficient for "Min_wage up" indicates that AFDC exits occurred less frequently among women who received AFDC and lived in states that increased minimum wage levels, holding other factors constant. The magnitude of the estimated coefficient decreased from -0.38 in Model 1 to -0.25 in Model 3 and, though statistically insignificant in Model 3, the negative sign displayed in both models suggests that increases in minimum wages do slow down AFDC exits.

The estimated coefficient for "Effective min_wage" in Table 8 is strong and statistically significant. This suggests that mothers who received AFDC in states with higher minimum wages left the AFDC program at a much slower rate than did mothers who received AFDC in states with lower minimum wages.[31]

Once "Effective min_wage" is entered into the model alongside "Min_wage up," the former variable loses its statistical significance, though again its estimated coefficient kept the negative sign.

The models in Table 8 also indicate that the availability of non-earned income increases one's chances of moving from welfare to work. This finding is consistent with past studies.[32]

Other information contained in Table 8 suggests that a major change in the number of dependent children during AFDC participation and a strong work history also influence rates of AFDC exits. First, an additional child entering the mother's family[33] led to lower rates of exits. I suspect that the magnitude of the estimated coefficient for "Post child" (-0.35 in model 1) would increase if births were distinguished from returns of older children to the family.

Second, constant attachment to the labor force affects rates of exits from the AFDC program, independent of the effects of minimum wages. Mothers who always worked ("Worked always") during the panel, regardless of the level of that work effort, left the AFDC program more quickly. To the contrary, mothers who never worked ("Never worked") during the panel left the AFDC program more slowly.

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31 If levels of minimum wages and levels of AFDC benefits are correlated, then the estimated effect for state minimum wages is biased in an upward direction. It is possible that states with high minimum wages are the same states with high AFDC benefits. If so, the estimated effect of state minimum wage levels is misleading and implies that models should add measures of the generosity of AFDC benefits for families of varying sizes across states. Resources prevented me from collecting those extra data.

32 Ellwood, 1986; Blank and Ruggles, 1994.

33 The present analyses clump together births in the AFDC program spell and returns of other dependent children.

Table 8

Determinants of AFDC Exits[a]

	Model 1	Model 2	Model 3
Age	0.12	0.11	0.11
	(0.09)	(0.09)	(0.09)
White	0.12	0.11	0.13
	(0.09)	(0.09)	(0.09)
Education	0.02	0.02	0.02
	(0.02)	(0.02)	(0.02)
Never married	0.45***	.44***	0.44***
	(0.1)	(0.1)	(0.11)
Disabled	-0.01	-0.01	-0.01
	(0.14)	(0.14)	(0.14)
Worked always	0.55***	0.56***	0.55***
	(0.12)	(0.12)	(0.12)
Never worked	-0.78***	-0.79***	-0.79***
	(0.11)	(0.11)	(0.11)
Post child	-0.35***	-0.36***	-0.36***
	(0.11)	(0.11)	(0.11)
Othinc	0.001***	0.001***	0.001***
	(0.0005)	(0.0005)	(0.0005)
Effective min_wage	--	-0.65***	-0.42
	--	(0.24)	(0.28)
Min_wage up	-0.38***	--	-0.25
	(0.13)	--	(0.16)
N = 1302			
Log likelihood value	-3122.69	-3122.87	-3121.52

Source: SIPP (1986, 1987, 1988 panels)

a Standard errors in parentheses.

* $p \leq .10$

** $p \leq .05$

*** $p \leq .01$

† Models include a control for seam bias and four-month time parameters.

-- Omitted from model.

The negative coefficients for "Disabled" across the three models of Table 8 could imply that AFDC mothers who are disabled are less likely than others to leave the AFDC program because of their disabilities. Theoretically, their disabilities, if they stopped them from working, should make them eligible for alterative forms of public assistance, like Supplemental Security Income (SSI).

Some of the findings in Table 8 are puzzling. Given the literature on turnovers in the AFDC program,[34] education level, race, and age were expected to significantly affect AFDC exits. In the models presented in Table 8, however, those variables ("Education," "Age," and "White") merely suggest that mothers who are white or older or more educated tend to exit more quickly than others; the coefficients are not significant.

The findings in Table 8 support the argument that when other characteristics of mothers participating in the AFDC program are held constant, state minimum wage levels and increases in those levels predict slower exits from the AFDC program. More generally, the results in Table 8 show (more clearly than those in Table 7) that mothers' decisions to leave AFDC depend on their chances of having employment. Those chances are lowered by high minimum wages and by increases in the minimum wage, even if it was "low" to begin with.

34 Bane and Ellwood, 1983; Rank, 1985; Plotnick, 1983.

Conclusions

Mothers making welfare-to-work transitions most often start employment in service or retail trade industries and work as clerks, secretaries, aides, cleaners, sales persons, and waitresses. These patterns in industry and occupational sorting hold across three job spells and across primary and secondary jobs.

There are differences among mothers, depending upon which industry and occupation they enter. Mothers who find work in manufacturing earn more, work longer hours and work full-time, and have, in all likelihood, a high school diploma. This observation leads to a more general conclusion about former welfare mothers' abilities to economically succeed in the labor market. The conclusion is that former welfare mothers' earnings, incomes, and labor market attachments are closely tied to their educational attainment.

Since many mothers in the samples are high school dropouts and because most appear to work only part-time, the majority of them are expected to work in low-skill minimum wage jobs. When separately added to models estimating the amount of time mothers participated in the AFDC program, increases in state minimum wages and state minimum wage levels both lowered the rate at which mothers left the program. I argue that these findings reflect the negative effects that state minimum wage levels have on these mothers' employment prospects. Though increases in minimum wages may narrow the gap between AFDC benefit levels and earnings, they also increase the cost of employing these women. Moreover, these increases in minimum wages may further disadvantage these women if employers are more likely to select teenagers possessing a high school diploma or college students looking for part-time work. Basically, increases in minimum wages, if tied to the distribution of human capital levels, raise the educational qualifications of the marginal worker who is hired to that of a high school graduate. Yet many mothers receiving AFDC, as this study documents, do not possess that level of education (Table 5). Conversely, college students and high school graduates could now find a given job sufficiently attractive to compete for it—a "crowding out" effect.

...mothers' decisions to leave AFDC depend on their chances of having employment. Those chances are lowered by high minimum wages and by increases in the minimum wage, even if it was "low" to begin with.

These results cast further doubt on the antipoverty effectiveness of minimum wages, compelling policymakers to consider that mothers receiving AFDC may have difficulty staying attached to the labor force when minimum wages are increased. Possibly, another submininum wage level, like that created for students, has to be devised, along with child care subsidies, to ensure that mothers on AFDC can stay employed and gain skills.

APPENDIX A

Table A1

Definitions of Variables Used in Tables 1-6

Industry Variables	
Agriculture	1 if worked in any of the 3-digit Standard Industrial Classification (SIC) codes for agriculture, forestry and fisheries, 0 otherwise
Construction	1 if worked in any of the 3-digit SIC codes for construction, 0 otherwise
Manufacturing	1 if worked in any of the 3-digit SIC codes for manufacturing, 0 otherwise
Trans/Comm	1 if worked in any of the 3-digit SIC codes for transportation, communicators and other public utilities, 0 otherwise
Wholesale trade	1 if worked in any of the 3-digit SIC codes for wholesale trade, 0 otherwise
Retail trade	1 if worked in any of the 3-digit SIC codes for retail trade, 0 otherwise
Financial/Real estate	1 if worked in any of the 3-digit SIC codes for finance, insurance, and real estate, 0 otherwise
Business/Repair	1 if worked in any of the 3-digit SIC codes for business and repair services, 0 otherwise
Service	1 if worked in any of the 3-digit SIC codes for personal, entertainment and recreation and professional services, 0 otherwise
Public sector	1 if worked in any of the 3-digit SIC codes for public administration, 0 otherwise
Occupation Variables	
Mang/Profess	1 if worked in any of the 3-digit SIC codes for managerial and professional, 0 otherwise
TSAS	1 if worked in any of the 3-digit SIC codes for technical, sales, and administrative support, 0 otherwise
Service	1 if worked in any of the 3-digit SIC codes for service occupations, 0 otherwise
Craft and repair	1 if worked in any of the 3-digit SIC codes for precision production, craft, and repair, 0 otherwise
Laborers	1 if worked in any of the 3-digit SIC codes for operators, fabricators, and laborers, 0 otherwise
Mothers Characteristics	
White	1 if white, 0 if black
Full-time	1 if only ever reported full-time work, 0 otherwise
Part-time	1 if only ever reported part-time work, 0 otherwise
Full & Part-time	1 if mixed full and part-time work, 0 otherwise
Age	Age in years
H.S. grad	1 if graduated from high school, 0 otherwise
Household income	Average household income per wave of survey
Hours worked	Average number of hours worked per week when worked
Earnings	Average monthly earnings over entire panel period
Persons in household	Number of persons in household
Have school-aged children	Percent of mothers with school-aged children

Table A2

Definition of Variables Used in Tables 7-8

Worked always	1 if reports employed at one job for entire period of panel, 0 otherwise
Disabled	1 if reports disabled in every wave during panel, 0 otherwise
No work	1 if reports no work across panel period, 0 otherwise
Post child	1 if a new child either returns to mother or is born before first observed welfare spell ends, 0 otherwise
Never married	1 if reports heading own household and never married during panel period, 0 otherwise
Age	Age in years at end of first observed AFDC spell
White	1 if non-Hispanic white, 0 otherwise
Education	Years of completed schooling
Othinc	Log of average amount of household income minus all household transfers and mother's earnings
Min wage up	State minimum wage was increased above federal level while woman was participating in the AFDC program
Effective min_wage	State minimum wage level[a]

a States reporting minimum wages lower than mandated federal minimum wage were assigned the federal minimum wage level.

APPENDIX B

The State Minimum Wage Panel Data Set

The panel data on minimum wages include observations covering 50 states and the District of Columbia for the same time period as the SIPP panel data set: October 1985 until January 1990. For this period of time, I constructed a chronology of changes in each state's minimum wage using information published by each state's labor department or from other publications disseminated by the Bureau of Labor Statistics.[35] Those sources and others enabled me to create variables measuring the length of time each state's minimum wage applied and identifying the month each state's minimum wage was increased (if it did increase during the period when SIPP data were collected).

Difficulties were encountered while constructing these data. Most problems were a by-product of multiple minimum wages within each state and rules about which workers were covered by the state minimum wage(s). For instance, in Minnesota there were two minimum wages for different types of workers. The minimum wage for Minnesotans covered by the Fair Labor Standards Act (FLSA) differed from the wage for those covered only by state law. The District of Columbia had nine different minimum wages dependent upon industries and occupations. For Minnesota, I used the FLSA minimum wage level and for the District of Columbia I used the same weighted average Neumark[36] used.

Another problem was that several of the least populated states were combined to protect respondents' privacy.[37] A few SIPP respondents came from those states. Because I was unable to correctly match minimum wages to those respondents, they were excluded from analyses.

The creation of these state minimum wage data was assisted by two factors: (1) during the period of the SIPP panel, state minimum wage levels were never lowered; and (2) the federal minimum wage level was never raised above $3.35 (Table B1).

Table B1

States with Minimum Wages Above Federal Minimum Wage

		Federal Minimum
1985	AK, CT, DC, ME	$3.35
1986	AK, CT, DC, ME	$3.35
1987	AK, CT, DC, MA, ME, NH, RI, VT	$3.35
1988	AK, CT, DC, HI, MA, ME, MN, NH, RI, VT	$3.35
1989	AK, CA, CT, DC, HI, MA, ME, MN, NH, PA, RI, VT, WA	$3.35

Source: Data collected by author.

35 Nelson, 1991.
36 Neumark, 1993.
37 The states that were combined were Iowa, North Dakota, South Dakota, Alaska, Idaho, Montana, and Wyoming.

Since the federal minimum wage remained constant over the survey period, I created variables indicating levels of state minimum wages relative to the level of the federal minimum wage. One variable indicated whether a state's minimum wage was increased to equal the federal minimum wage; another noted whether a state's minimum wage was increased above the federal minimum wage; and a final one marked whether a state's minimum wage level remained below the federal minimum wage. Those states with minimum wages always below the federal minimum wage were given an effective minimum wage equal to the statutory federal minimum wage.

The details on state minimum wages and the federal minimum wage are summarized in Table B1. Table B1 shows that between 1985 and 1989 several states had minimum wages above the uniform federal minimum wage.

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