THE EFFECTIVENESS OF MINIMUM-WAGE INCREASES IN REDUCING POVERTY: PAST, PRESENT, AND FUTURE

RICHARD V. BURKHAUSER and JOSEPH J. SABIA*

Extending the work of Card and Krueger, we find minimum-wage increases (1988–2003) did not affect poverty rates overall, or among the working poor or among single mothers. Despite employment growth among single mothers, most gainers lived in nonpoor families and most working poor already had wages above the proposed minimums. Simulating a new federal minimum wage of $7.25 per hour, we find 87% of workers who benefit live in nonpoor families. Poor single mothers receive 3.8% of all benefits. Expanding the Earned Income Tax Credit would far more effectively reduce poverty, especially for single mothers. (*JEL* J21, J31, J38)

I. INTRODUCTION

Beginning with the passage of the federal minimum wage as part of the Fair Labor Standards Act (FLSA) of 1938, advocates of the minimum wage have emphasized its importance as an antipoverty tool.[1] The passage of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 has intensified calls to raise the minimum wage to reduce poverty among single mothers who are now subject to time-limited welfare benefits and who are required to work while receiving these benefits. Using this rationale, U.S. Senator Edward M. Kennedy (D-MA) called for a federal minimum wage hike to $7.25 per hour:

> [T]he jobs available to women leaving welfare are often minimum wage jobs, and it is difficult, if not impossible, for them to meet the needs of their families and raise their children. Daily life is often harsh for low-income working mothers in all parts of the country, whether or not they have been on welfare. For them, survival is the daily goal. If they work hard enough and their working hours are long enough, they can make ends meet—but only barely ... We must stop asking these families to do it all alone. They are working too many hours for too little pay, without access to the support they need to make ends meet and improve the quality of their lives. One of the most important steps we can take is to guarantee a fair minimum wage." (Kennedy, 2004)

This article examines whether raising the minimum wage is a target efficient policy tool for reducing poverty among the working poor and among single mothers in the labor force following the passage of PRWORA. Extending the work of Card and Krueger (1995), we continue to find little evidence that increases in the minimum wage significantly reduce poverty rates among the working poor or even among single mothers.

ABBREVIATIONS

AFL/CIO: American Federation of Labor and Congress of Industrial Organizations
CPS: Current Population Survey
EITC: Earned Income Tax Credit
FLSA: Fair Labor Standards Act
PRWORA: Personal Responsibility and Work Opportunity Reconciliation Act

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Burkhauser: Professor, Department of Policy Analysis and Management, Cornell University, Ithaca, NY 14853 Phone: 607-255-2097, Fax: 607-255-4071, E-mail rvb1@cornell.edu

Sabia: Assistant Professor, Department of Housing and Consumer Economics, University of Georgia, Athens, GA 30602 Phone: 706-542-4722, Fax: 706-583-0313, E-mail jsabia@fcs.uga.edu

1. Card and Krueger (1995) note that "the minimum wage is sometimes defined as an antipoverty program and much of the political rhetoric from supporters of the minimum wage focuses on its supposed antipoverty effects." For example, in their 1992 campaign platform *Putting People First*, Bill Clinton and Al Gore argued that, "It's time to honor and reward people who work hard and play by the rules ... No one who works full time and has children should be poor anymore." This sentiment was echoed on several occasions during the 1996 debate over a federal minimum-wage increase. To be sure, other arguments have been made for minimum-wage increases (including preventing "unfair" low-wage competition, ameliorating inefficiencies caused by monopsonistic labor markets, or protecting unionized workers in the low-skilled sector), but its ability to help the working poor has been its longest standing stated goal (see Burkhauser, Couch, and Glenn, 1996, for a history of the minimum-wage debate in the United States).

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Raising the minimum wage is not an especially effective antipoverty policy because most workers earning the minimum wage live in nonpoor families, and most workers in poor families earn wage rates higher than the proposed federal minimum-wage increase. Our simulations show that raising the federal minimum wage to $7.25 per hour will be no more target efficient, and perhaps even less target efficient, than the last federal minimum-wage increase in 1996. We estimate that 13.4% of all workers who will gain from an increase in the federal minimum wage to $7.25 live in poor households, slightly less than the 14.7% who gained from the last federal minimum-wage increase to $5.15 per hour. Furthermore, while we find that a large percentage of single mothers who will gain from a minimum wage hike to $7.25 are poor (53.4%), this is less than the 55.6% who gained from the last minimum-wage increase. We conclude that the Earned Income Tax Credit (EITC) is a far more effective policy tool for reducing poverty among the working poor in general and among working single mothers in particular. Increases either in the federal EITC or in state supplements to it will better achieve the antipoverty goals espoused by supporters of minimum-wage increases.[2]

II. LITERATURE ON MINIMUM WAGES AND POVERTY

The existing empirical literature finds a weak relationship between minimum-wage increases and poverty (Burkhauser, Couch, and Wittenberg, 1996; Burkhauser and Finegan, 1989; Card and Krueger, 1995; Neumark, Schweitzer, and Wascher, 2004; Neumark and Wascher, 2001, 2002; Shannon and Beach, 1995). Card and Krueger (1995) argue that one important reason for this weak relationship is that in many poor families, no one works, and for those families, a higher minimum wage is irrelevant. When Card and Krueger (1995) examine the effect of the 1990 federal minimum-wage increase on state poverty rates, they find no evidence of a significant relationship. However, they also find no significant relationship between minimum-wage increases and the poverty rate among working individuals, suggesting that a lack of employment among the poor cannot fully explain this relationship.

Neumark and Wascher (2002) examine movements in and out of poverty using a matched sample of individuals in the Current Population Survey (CPS). They find state-level minimum-wage hikes increase the probability of poor families escaping poverty but also increase the likelihood of nonpoor families entering poverty due to decreased employment and hours worked. On net, the authors find little evidence that minimum-wage increases reduce poverty. Conducting a similar analysis on low-wage workers, Neumark, Schweitzer, and Wascher (2004) find that reduced employment and work hours may actually increase poverty rates. However, Addison and Blackburn (1999) find some evidence that minimum-wage hikes had a modest negative effect on poverty rates of teenagers and older junior high school dropouts in the prewelfare reform era.

Burkhauser, Couch, and Wittenberg (1996) and Burkhauser and Finegan (1989) do not explicitly estimate the effects of minimum-wage increases on poverty among workers but suggest that there is likely to be little effect since most workers in poverty already earn wages that are higher than the proposed minimum wage.

This study contributes to the minimum-wage literature in two ways. First, we extend the work of Card and Krueger (1995) by examining the link between declining poverty in the 1990s and increases in federal and state minimum wages. We also compare the target efficiency of the 1996 federal minimum-wage increase to that of the current proposal to raise the federal minimum wage to $7.25 per hour. We measure target efficiency by the proportion of workers who live in poverty and would benefit from a federal minimum-wage hike. Second, we focus on a population of workers that has increasingly been mentioned as a target for minimum-wage protection and whose economic welfare has not been extensively explored in the minimum-wage literature—single mothers.

Welfare reform in the 1990s "changed welfare as we know it" by dramatically shifting the types of antipoverty protection available to single mothers from a transfer base to a prowork base. Welfare reforms, beginning in the early 1990s and culminating with the PRWORA of 1996, led to a dramatic decline in the share of single mothers on the welfare rolls and, along with a growing economy, led to a substantial increase in their

2. In his book, *Poor Support: Poverty in the American Family*, David Ellwood (1988) recommended a dual strategy for reducing poverty by raising the minimum wage and expanding the EITC, a strategy that was followed in the 1990s by the Clinton Administration. However, our results will show that minimum-wage increases played no part in reducing poverty over this period.

employment (see Blank, 2002, for an evaluation of welfare reforms over this period). But the consequences of this increase in single mothers' employment has led to calls for further increases in the minimum wage to ensure that they are not simply added to the working poor population.

In this study, we examine how the distribution of jobs by hourly wage rate changed for single mothers over the 1990s, test whether minimum-wage increases helped alleviate poverty among this economically vulnerable population between 1988 and 2003, and simulate and compare the effectiveness of the last federal minimum-wage increase to $5.15 per hour and the proposed increase to $7.25 per hour in targeting poor, working single mothers.

III. DESCRIPTIVE STATISTICS

A. Historical Relationship Between Low Wages and Poverty

Between 1939 and 2003, the federal minimum wage fluctuated between 34% and 56% of the average private sector wage, defined as the gross average hourly earnings of all production and nonsupervisory workers in the private nonfarm sector, based on payroll data reported by employers to the Bureau of Labor Statistics (Burkhauser, Couch, and Glenn, 1996). In 2003, the federal minimum wage was at an historic low (33.6%) as a percentage of the average private sector wage.[3] Advocates of the minimum wage have generally argued that the federal minimum wage should be targeted at 50% of this average wage.[4] We focus on low-wage workers (those who earn wages of 50% or below this average) in this section.

Table 1 builds on the work of Burkhauser, Couch, and Glenn (1996), and Burkhauser and Finegan (1989) using data from the Decennial Census and the CPS. The reported values for 1939–1989 are reproduced from Burkhauser, Couch, and Glenn (1996) and Burkhauser and Finegan (1989); we have updated the table to include data for the years 1995, 2000, and 2003. Table 1 shows how the distribution of low-wage workers over the income distribution has changed since 1939. As in Burkhauser, Couch, and Glenn (1996), we define a low-wage worker as one whose wages fall below 50% of the average private sector wage.[5]

The income-to-needs ratio is our measure of economic well-being for these workers. For the years 1949–2003, this is defined as the ratio of total household income to the official U.S. Census–determined poverty line, adjusted for household size.[6] For example, in 2003, the poverty line for a household of four was $18,810. A worker living in such a household whose total household income was $37,620 would have an income-to-needs ratio of 2.0. Importantly, we use household income because a worker is not an independent entity with respect to his or her economic well-being. A worker lives in a household and it is the total household income and not the worker's wage rate or labor earnings that affect his or her economic well-being.[7]

Table 1 shows a relatively close relationship between being a low-wage worker and living in poverty in 1939. One reason is that a large share (34%) of low-wage workers were household heads (defined as the head of a household of more than one person) and most (94%) headed poor households. Thus, 31% of low-wage workers were poor household heads. Another reason for the close link between wages and poverty for these low wage–worker households was they had few other sources of income. So even when low-wage workers were not household heads, they were still likely (85%) to live in poor households. Hence, in 1939, just after the passage of the

3. While the federal minimum wage is now at an historical low relative to the average private sector wage, the total "income floor" provided by both the minimum wage and the EITC has remained relatively constant. That is, federal policy has not necessarily become "stingier" but rather has shifted away from general minimum-wage hikes to all workers regardless of their household income and toward expansions in the EITC that better target the working poor as a mechanism for increasing the earnings of low-skill laborers who live in poor households.

4. The American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) has consistently argued that "[f]airness to the working poor demands that the federal minimum wage should not be less than 50 percent of average hourly earnings of non-supervisory workers and production workers in the non-farm private economy" (see, for example, AFL-CIO Reviews the Issues, 1995). In 2003 (the year in which our simulations are based), the average hourly earnings of these workers was $15.35, making 50% of this wage rate approximately $7.68 per hour. As noted in the discussion of Table 1, we define a low-wage worker as earning wages below this 50% threshold.

5. For data presented from 1939 through 1979, the Decennial Census is used to calculate wage data. Thereafter, wages are calculated using retrospective data from the CPS. A fuller discussion of the use of the Census and CPS data appears in Burkhauser, Couch, and Glenn (1996).

6. For 1939, the income-to-needs ratio is given by the ratio of the household's wage or salary earnings to its poverty level because data were not available on nonwage or nonsalary income.

7. Furthermore, work by Neumark, Schweitzer, and Wascher (2004) finds that low-wage workers are harmed by minimum-wage increases.

TABLE 1

The Distribution of Low-Wage Workers Across the Income Distribution: 1939–2003 (%)

	1939[a]		1949[b]		1959		1969		1979	
Income-to-Needs Ratio	**Heads of Household[c]**	**All Workers[d]**	**Heads of Household[c]**	**All Workers[d]**	**Heads of Household[c]**	**All Workers[d]**	**Heads of Household[c]**	**All Workers[d]**	**Heads of Household[c]**	**All Workers[d]**
Less than 1.00 (poor)	94	85	77	NA	61	42	45	23	37	20
1.00–1.24	3	5	8	NA	11	10	13	9	13	7
1.25–1.49	2	3	5	NA	7	10	9	7	9	7
1.50–1.99	1	4	6	NA	8	12	11	14	13	12
2.00–2.99	0	2	3	NA	9	16	13	20	16	20
3.00 or above	0	0	1	NA	4	10	10	27	12	34
Total	100	100	100	NA	100	100	100	100	100	100
Percent of all low-wage workers who were heads of:										
Households	34	—	31	—	29	—	25	—	21	—
Poor households	31	—	24	—	18	—	11	—	8	—

	1989		1995		2000		2003	
Less than 1.00 (poor)	37	22	33	14	33	16	31	17
1.00–1.24	13	9	11	7	9	6	10	7
1.25–1.49	10	8	8	8	7	7	8	8
1.50–1.99	12	12	15	14	10	12	13	13
2.00–2.99	15	19	16	22	18	22	17	22
3.00 or above	13	30	18	35	21	37	21	34
Total	100	100	100	100	100	100	100	100
Percent of all low-wage workers who were heads of:								
Households	22	—	25	—	27	—	29	—
Poor households	7	—	8	—	8	—	9	—

[a]Income-to-needs ratio in 1939 excludes income from sources other than wages and salaries.

[b]Data for 1949 are not entirely comparable due to different sampling procedures. Data for all workers and other household members are not available.

[c]Working head of households are defined as heads under age 65 in households of size greater than 1. Low-wage workers earned less than half of the average private sector wage. Poverty levels for 1939, 1949, and 1959 were formed by extrapolation using the Consumer Price Index. Details may not sum to 100 due to rounding.

[d]Tabulations include all workers aged 17–64, whether living alone or in households. The former are classified by the ratio of total personal income to the poverty level for one-person households; workers in households are classified by the ratio of total household income to the size-adjusted poverty level for their household. Comparable data were not gathered in the 1950 census, hence we denote these values as not available (NA).

Source: Update and compilation of tables from Burkhauser, Couch, and Glenn (1996) and Burkhauser and Finegan (1989).

FLSA, when few other public mechanisms for helping the working poor existed, a minimum wage was a relatively target efficient mechanism for helping the working poor because a large share of low-wage workers lived in poor households (assuming no negative employment effects).

The relationship between being a low-wage worker, especially if one were a household head, and living in a poor household declined steadily over the next 40 yr. By 1979, 21% of low-wage workers were household heads and 8% of all low-wage workers were poor household heads. All other low-wage workers were either not household heads or did not live in poor households. These numbers remained about the same over the next 10 yr.

Between 1939 and 1989, the relationship between earning a low wage and living in poverty became weaker as low-wage workers increasingly became second or even third workers in nonpoor households. Even when they headed households, the labor earnings of other household members as well as the income from other household sources usually pushed their household's income above the poverty line. Hence, minimum-wage increases that once could be expected to primarily benefit the working poor became less likely to do so.

The long-term decline in the share of low-wage workers who were heads of households ended in the 1990s. In 1989, 22% of low-wage workers were household heads. By 1995, this share had grown to 25%. By 2003, it was 29%, a share not seen since 1959. But importantly, while the share of low-wage workers who were household heads returned to 1959 levels, the share of low-wage workers who were poor household heads did not. In 1959, 18% of low-wage workers were poor household heads, but this number fell to 9% in 2003. The reason is that in 1959, 61% of low-wage household heads lived in poor households. In 2003, 31% did so.[8,9]

8. In our income calculations, we use CPS-based pretax, posttransfer increase. This is consistent with how official U.S. Census poverty measures are calculated. But this measure ignores the income that working household heads receive from EITC benefits. Including EITC benefits would lower the share of poor working heads, especially of working single mothers in poverty.

9. Another approach to the descriptive analysis we present would be to estimate a bivariate probit model, in which the probability of being in a low-wage job and the probability of living in poverty are estimated simultaneously. One could then show that the correlation coefficient between the errors of the low-wage equation and poverty equation has been changing over time.

B. Low-Wage Workers and Single Mothers

Table 2 separates the overall increase of 6.8 percent points (29.1 minus 22.3) in the share of household heads in the low-wage population between 1989 and 2003 into two parts—the percentage point increase caused by the increase in the share of low wage–earning single mothers (defined as single-female heads of households who work at least 14 h a week and at least 15 wk per year and have children under the age of 18) and the increase in the share of low-wage earners among other types of household heads. The growth is almost equally divided between the two (3.1 and 3.7 percentage points, respectively). The share of low-wage earners who were single mothers rose from 4.9% in 1989 to 8.0% in 2003. More troubling, Table 3 shows that almost the entire increase in the share of poor low-wage workers who were household heads (1.6 out of 1.8 percentage points) came from the growth in the share of low-wage workers who were single mothers. Their share increased from 2.9% in 1989 to 4.5% in 2003.

While this increase in the share of poor working household heads who were single mothers is a cause for concern, it must be put into perspective. Table 4 shows that the increase is not caused by an increase in the poverty rate of low-wage single mothers. That rate fell slightly over the period, from 59.5% in 1989 to 57.2% in 2003. It continues to be the case that a single mother who does not work is far more likely to be in poverty than a single mother who works at a low-wage job (71.9% versus 57.2% in 2003). Work clearly reduces poverty. The overall poverty rate of all single mothers who work (19.9% in 2003), while higher than that of other working heads of households (3.3%), is far lower than the poverty rate of single mothers who do not work.

As we will see, it is the dramatic increase in the employment rate of single mothers in the 1990s that is driving their increasing shares in both the low-wage and the higher wage working populations. Furthermore, as is shown in Table 1, it is still the case that the majority of low-wage workers are not household heads (29% of low-wage workers were household heads in 2003) and an even greater share are not poor household heads (8.9% of low-wage workers were poor household heads in 2003). Thus, despite the increase in the share of single mothers in the low-wage population in the

TABLE 2
Composition of Low-Wage Worker Population by Household Type: 1989–2003 (%)

Household Type	1989	1995	2000	2003	Change 1989-2003
All heads	22.3	24.9	26.8	29.1	6.8
Single mothers	4.9	6.1	6.9	8.0	3.1
Not single mothers	17.4	18.8	19.9	21.1	3.7
Not household heads	77.7	75.1	73.2	70.9	−6.8
Total	100.0	100.0	100.0	100.0	—

Source: March CPS, 1990, 1996, 2001, and 2004.

TABLE 3
Composition of Low-Wage Workers Who Are and Are not Poor Heads of Household: 1989–2003 (%)

Household Type	1989	1995	2000	2003	Change 1989–2003
All poor heads	7.1	7.6	7.9	8.9	1.8
Single mothers	2.9	3.2	4.1	4.5	1.6
Not single mothers	4.2	4.4	3.8	4.4	0.2
Not poor household heads	92.9	92.3	82.1	91.1	−1.8
Total	100.0	100.0	100.0	100.0	—

Source: March CPS, 1990, 1996, 2001, and 2004.

TABLE 4
Poverty Rates of Low-Wage Household Heads: 1989–2003 (%)

	1989	1995	2000	2003
All single mothers	41.4	38.2	32.1	32.1
Single mothers working	19.8	19.6	21.6	19.9
Single mothers earning low wages	59.5	53.7	60.0	57.2
Single mothers not working	82.7	75.6	72.5	71.9
All other household heads	6.6	7.3	6.4	6.7
Other household heads working	3.5	3.6	3.2	3.3
Other household heads earning low wages	24.8	23.5	19.4	21.1
Other household heads not working	26.4	23.0	19.5	19.5
All household heads	10.5	11.2	9.3	10.2
All household heads working	5.0	5.3	5.4	5.5
All household heads earning low wages	32.5	30.8	29.9	31.0
All household heads not working	41.6	35.0	26.5	27.5

Source: March CPS, 1990, 1996, 2001, and 2004.

1990s, the majority of low-wage workers continue to be neither household heads nor poor.

Although single mothers continue to make up a small percentage of the low-wage worker population, it is nonetheless important to understand why their share in this population has grown since 1989. If it were the case, for instance, that "the jobs available to women leaving welfare are often minimum-wage jobs" as Senator Kennedy argues, then perhaps the dramatic increase in the employment rate of single mothers will make minimum-wage increases more target efficient today than was the case when Burkhauser, Couch, and Glenn (1996) did their evaluation of the 1990 minimum-wage increase to $4.35 per hour. But

do working single mothers hold predominantly minimum-wage or even low-wage jobs?

Single mothers play a small but important role in the low-wage labor market, and the low-wage labor market plays a small but important role in the entire United States labor market. To more fully understand what happened to both low-wage single mothers in particular and low-wage workers in general over the 1990s, it is useful to observe what happened to all households over this period.

Median household income, adjusted for inflation, has changed in the United States since 1970. While there has been substantial growth in median household income between 1970 and 2003, median household income has fluctuated widely within business cycles over that period. One can roughly divide the last two business cycles of the 20th century (as defined by peaks in median household income) as 1979–1989 and 1989–2000. Burkhauser et al. (2005) do so and show, using these years as approximations of the 1980s and 1990s business cycles, that economic growth over the 1990s business cycle was more equally shared across the income distribution than was the case over the 1980s business cycle. They found that the income of vulnerable populations that had not shared in the economic growth of the 1980s, including single mothers and those households receiving federal welfare benefits, substantially increased in the 1990s. How does this increase in the economic well-being of single mothers square with the increase in their share of all low-wage workers?

As we see in Table 2, the share of low-wage workers who were single mothers increased from 4.9% to 6.9% over the business cycle of the 1990s and continued to increase thereafter, reaching 8.0% in 2003. Row 1 of Table 5 reports these values. Row 2 shows that a major part of the reason for this is the rise in the share of working household heads who are single mothers. In 1989, it was 9.4%. By 2000, it was 11.8%. In 2003, despite 3 yr of slow economic growth, it increased to 12.9%. This was not primarily because the share of single mothers in the population increased (row 3) but rather because of the explosion in the employment rate of single mothers over this period, especially after welfare reform in 1996. Row 4 shows that the employment rate of single mothers was 65.9% in 1989. It grew to 69.1% in 1995 before leaping to 79.9% in 2000 and then falling slightly to 76.8% in 2003.[10]

Importantly, it is the increase in the employment rate of single mothers rather than a dramatic downward shift in their wage earnings that is driving the increase in the share of single mothers in the low-wage population observed in row 1. As can be seen in row 5, while the percentage of single mothers who earned low wages increased between 1989 and 1995, it actually declined slightly thereafter, so that the increase in the share of single mothers holding low-wage jobs grew from 23.9% to 25.9% over the 1990s business cycle and was 24.0% in 2003. Prowork welfare reform policies, along with a strong economy, dramatically increased the employment of single mothers and hence their shares in both the low- and non–low wage population of workers. Finally, as can be seen in row 6, the strong economic growth of the 1990s also reduced the percentage of all workers who earned low wages over this period (from 18.3 in 1989 to 16.6% in 2000), which further increased the importance of single mothers as a share of those remaining workers in low-wage jobs.

In Table 6, we more carefully look at the distribution of single mothers across the wage distribution and thus more carefully consider the argument that single mothers "often move into minimum-wage jobs." In so doing, we choose the years 1989, 1995, 2000, and 2003. These are particularly useful years to compare with respect to the expected consequences on single mothers of a federal minimum-wage increase. The year 1989 preceded the federal minimum-wage increases of 1990, and the year 1995 preceded the federal minimum-wage increase of 1996. The years 1989 and 2000 are the peak years of the 1990s business cycle, and 2003 is the most recent year in our data reflecting the decline in the economy since 2000.

In Table 6, row 1 shows the dramatic decline in the percentage of nonworking single mothers, especially following welfare reform in 1996. In 1989, 34.1% of single mothers did not work. This fell to 30.9% by 1995, a decrease of 3.2 percentage points. Between 1995 and 2000, the nonworking single mother population fell by 10.8 percentage points. While some of that gain in jobs was lost as the United States moved into

10. Individuals are defined as working if they worked at least 14 h per week and at least 15 wk per year in the previous year.

TABLE 5
Composition and Employment of Single Mothers and Low-Wage Workers: 1989–2004 (%)

Low-Wage Worker Groups	1989	1995	2000	2003
Single mothers in low-wage population	4.9	6.1	6.9	8.0
Working household heads who are single mothers	9.4	11.0	11.8	12.9
Single mothers in the population	4.1	4.5	4.1	4.8
Employment of single mothers	65.9	69.1	79.9	76.8
Working single mothers who earn low wages	23.9	26.3	25.9	24.0
All workers who earn low wages	18.3	18.6	16.6	16.7

Source: March CPS, 1990, 1996, 2001, and 2004.

recession, the nonworking percentage in 2003 (23.2%) was still below the 1995 level.

How did the number of single mothers change across the wage distribution over this period? The majority of single mothers did not and do not hold minimum-wage jobs or even low-wage jobs. This was the case in 1989 just before the minimum-wage increase of 1990 when 6.2% of single mothers held minimum-wage jobs of $3.45 per hour and another 9.0% held low-wage jobs. The majority (50.9%) held jobs that paid more than 50% of the average private sector wage rate. And, it remained the case in all years reported in Table 6.

But how did the share of all single mothers in each of our wage rate groups change over the period? Between 1989 and 1995, most of the gain in employment of single mothers can be accounted for by an increase in the minimum-wage and low-wage categories. But this is not the case between 1995 and 2000. In 1995, just prior to the federal minimum-wage increase from $4.25 to $5.15 per hour, 8.1% of single mothers held minimum-wage jobs of $4.25. In 2000, 9.5% of single mothers held minimum-wage jobs of $5.15 per hour. This was an increase of 1.4 percentage points (row 2, column 5). As row 3, column 5 shows, there was another 1.1 percentage point increase in single mothers who held low-wage jobs above $5.15 per hour. But the greatest increase between 1995 and 2000 (row 4, column 5) was in single mothers who held jobs above 50% of the average private sector wage rate—8.3 percentage points. So of the 10.8 percentage point gain in employment of single mothers between 1995 and 2000, 8.3 percentage points (77%) was accounted for by an increase in their holding jobs paying more than 50% of the average private sector hourly wage rate. These gains were caused by rapid economic growth over the period and welfare reforms that encouraged mothers on welfare to work. It is unlikely that increases in the minimum wage

TABLE 6
Percentage of Single Mothers in Various Hourly Wage Rate Categories

Hourly Wage Rate Categories	1989	1995	Change 1989–1995	2000	Change 1995–2000	2003	Change 2000–2003
Not working[a]	34.1	30.9	3.2	20.1	10.8	23.2	+4.1
Earning the federal minimum wage[b]	6.2	8.1	1.9	9.5	1.4	9.0	−0.5
Earning a low wage greater than federal minimum[c]	9.0	9.5	0.5	10.6	1.1	15.0	+4.4
Earning more than a low wage[d]	50.9	51.5	0.6	59.8	8.3	52.8	−7.0

[a]Not working at least 14 wk last year at an average of 15 h/wk.
[b]Earning $3.35 or less in 1989, $4.25 or less in 1995, and $5.15 or less in 2000 and 2003.
[c]The percentages of those "earning the federal minimum wage" are calculated under the assumption that those earning less than the federal minimum wage are minimum-wage earners. That is, it assumes that all employment is covered under the federal law. Therefore, the percentage can be interpreted as an upper-bound estimate. A low wage is defined as one-half of the average private sector wage rate.
[d]Greater than one-half the average private section wage.
Source: March CPS, 1990, 1996, 2000, and 2004.

in 1996 played any role in helping the majority of single mothers since they already held jobs that paid in excess of the new federal minimum. Between 2000 and 2003, 3.1% more single mothers did not work, but the majority of jobs gained since 1995 remain those that paid more than the federal minimum.

The employment rate of single mothers increased by 14.0 percentage points over the business cycle of the 1990s. Fully, 64% (8.9 percentage points) of the increase in the share of single mothers who work can be accounted for by the increase in jobs that paid more than 50% of the average private sector wage. Another 12% (1.6 percentage points) can be accounted for by the increase in jobs that paid more than the prevailing federal minimum wage but less than 50% of the average wage. Twenty-four percent (3.3 percentage points) can be accounted for by those who held jobs at the prevailing minimum wage, despite the fact that the minimum wage was increased twice over the period—from \$3.35 to \$4.25 to \$5.15 per hour.[11]

IV. EMPIRICAL RESULTS

C. Effects of Minimum-Wage Increases on Poverty

Table 7 presents estimates of the effects of minimum-wage increases on poverty rates using a panel of states and years from 1988 to 2003.[12] As in Card and Krueger (1995),

11. Note that we use cross-sectional data to measure gross changes in the distribution of all single mothers who held no jobs and held jobs at various wage rates across these years. We are not directly measuring the wage distribution of those who left the welfare rolls over time. To do so, one would need longitudinal data that would show the actual hourly wage rates of single mothers who worked after leaving the welfare rolls. But our analysis does show that increases in the share of higher wage jobs account for the majority of the gross increases in the share of single mothers who hold jobs across these years.

12. This analysis does not examine the effect of minimum-wage increases on flows into or out of poverty, but rather their effects on gross poverty rates. Further empirical research on the effectiveness of the minimum wage as an antipoverty tool might attempt a dynamic econometric approach, as in Neumark, Schweitzer, and Wascher (2004), to examine individual worker-specific flows into and out of poverty as a result of changes in the minimum wage. Such an empirical strategy would also allow one to estimate the extent of state dependency in poverty and low-wage employment, which may play an important role in the determination of poverty rates. Addison and Blackburn (1999) conduct an analysis similar to ours on teenagers and older junior high school dropouts from 1983 to 1996 and find some evidence of modest declines in poverty.

TABLE 7
Estimates of Relationship Between Log of Minimum Wage and Log of Poverty Rate, 1988–2003

	Overall Poverty Rate				Poverty Rate Among Workers			
	1	2	3	4	5	6	7	8
Log (minimum wage)	–0.189 (0.118)	–0.146 (0.109)	–0.108 (0.104)	–0.082 (0.116)	–0.067 (0.135)	–0.058 (0.134)	–0.007 (0.127)	–0.018 (0.146)
Log (proportion of adult males unemployed)	—	0.203* (0.025)	0.191* (0.025)	0.150* (0.023)	—	0.045 (0.032)	0.028 (0.031)	–0.008 (0.033)
Log (average adult wage rate)	—	—	–0.215* (0.045)	–0.163* (0.044)	—	—	–0.306* (0.078)	–0.204* (0.060)
State effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prais-Winsten FGLS?	No	No	No	Yes	No	No	No	Yes
N	816	816	816	816	816	816	816	816

*Indicates significance at the 5% level.

Notes: The dependent variable in columns 1–4 is the natural log of the poverty rate of all individuals aged 16–64. The dependent variable in columns 5–8 is the natural log of the poverty rate of individuals aged 16–64 who reported positive work hours. The poverty rate is calculated using family income and the family size-adjusted poverty line. Adult wage measures and unemployment ratios are calculated for those aged 25–54. The Prais-Winsten Feasible Generalized Least Squares (FGLS) approach controls for state-specific autocorrelation and panel-specific correlated errors across states. All regressions are weighted by the relevant population of workers.

Source: Computed by the authors.

individual poverty rates are calculated using data from the March CPS. An individual aged 16–64 is defined as living in poverty if the ratio of family income to the family size-adjusted federal poverty line is less than 1.[13] Columns 1–4 present estimates of the relationship between state minimum-wage increases and overall state poverty rates. All models include state effects to control for time-invariant, state-level unobserved heterogeneity and year effects to control for unobserved national time trends such as changes in the macroeconomy or in federal welfare reform. Each regression is weighted by the relevant state population. Column 2 controls for the state-level unemployment rate among prime-age (25–54) men, column 3 adds a control for the average state-level adult wage rate, and column 4 controls for heteroskedastic and autocorrelated residuals.

Across specifications, there is little evidence of a significant relationship between minimum-wage increases and the overall state poverty rate. This result is consistent with Card and Krueger (1995). In columns 5–8, we examine the effect of minimum-wage increases on the poverty rate of workers because as Card and Krueger (1995) suggest, poor families who have no workers might be driving the insignificant relationship observed in the first four columns. However, we find no evidence that state minimum-wage increases affect the poverty rate of workers. One explanation for these findings, offered by Neumark and Wascher (2002), is that hikes in the minimum wage help some poor families by moving them out of poverty through increased wage rates but harm other nonpoor families by moving them into poverty due to decreased employment and hours worked. Another explanation, which is explored below, is that minimum-wage increases, while not effective in reducing poverty rates overall, are critically important to an especially vulnerable part of the poverty population: working single mothers.

In Table 8, we further extend the analysis of Card and Krueger (1995) by estimating the effect of minimum-wage increases on the poverty rates of single mothers. Columns 1–4 examine the poverty rate of all single mothers, while columns 5–9 examine the poverty rate of single mothers who work. Across all specifications, we find no evidence that minimum-wage increases decrease poverty rates among all single mothers or even single mothers who work. One reason for this finding, explored below, is that most working single mothers earn wage rates higher than proposed minimum-wage hike levels.

In the following section, we simulate the effects of the 1996–1997 federal minimum-wage increase from \$4.25 to \$5.15 per hour and the recently proposed federal minimum-wage increase from \$5.15 to \$7.25 per hour.[14] The purpose of this simulation is to examine how the benefits from minimum-wage hikes are distributed across workers living at different parts of the income distribution. This will allow us to explore the relative target efficiency of each minimum-wage hike. For each of these simulations, we assume that there are no disemployment effects or reductions in hours worked among workers due to minimum-wage hikes. Hence, we provide the "best case" scenario for a federal minimum-wage increase. In reality, while some evidence has been provided that the minimum wage has no impact on employment (see Card and Krueger, 1995, for a critique of the older literature on the employment effects of the minimum wage and new evidence of its noneffect), a wide body of recent empirical literature finds significant adverse employment effects associated with minimum-wage increases (Abowd et al.,

13. Because it is presumed that income is shared within a sharing unit rather than used for individual consumption, poverty measures must make some assumption about the parameters of the sharing unit and how income is shared within that sharing unit. Most measures of poverty assume that income is shared equally by all members of the sharing unit. But different researchers will use different sharing units. In the previous section, we used the household as our sharing unit since that is the sharing unit used in the earlier work by Burkhauser, Couch, and Glenn (1996) and Burkhauser and Finegan (1989). In this section, where we are comparing our results with those of Card and Krueger (1995), we use the family as our sharing unit since that is the unit they use. Poverty measures are sensitive to the sharing unit used in their calculation. The CPS data used in all these analyses allow the researcher to choose either a family or a household sharing unit. A household consists of all those who share a common residence, while a family consists of a subset of those household members who are related by blood or marriage. Hence, a household can consist of more than one family.

14. In 1996, 10 states had a minimum-wage level higher than the federal minimum wage of \$4.25. In 2003, 12 states had minimum-wage levels higher than the federal minimum wage of \$5.15 per hour. These higher state minimum wages are imbedded in our analysis on the impact of increasing the federal minimum wage since workers' wage rates will already reflect their state's minimum wage. That is, we are estimating the impact of an increase in the current federal minimum wage, given the current structure of state minimum wages.

TABLE 8
Estimates of Relationship Between Log Minimum Wages and Log Poverty Rate Among Single Female Heads of Household with Children Under Age 18 (SFHH), 1988–2003

	Poverty Rate Among SFHH				Poverty Rate Among Working SFHH			
	1	2	3	4	5	6	7	8
Log (minimum wage)	−0.208 (0.132)	−0.187 (0.129)	−0.158 (0.128)	−0.072 (0.126)	−0.089 (0.201)	−0.076 (0.201)	−0.040 (0.202)	0.027 (0.179)
Log (proportion of adult males unemployed)	—	0.095* (0.031)	0.086* (0.031)	0.096* (0.033)	—	0.056 (0.046)	0.044 (0.046)	0.076 (0.051)
Log (average adult wage rate)	—	—	−0.153* (0.059)	−0.155* (0.066)	—	—	−0.198* (0.081)	−0.241* (0.082)
State effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prais-Winsten FGLS?	No	No	No	Yes	No	No	No	Yes
N	816	816	816	816	816	816	816	816

*Indicates significance at the 5% level.

Notes: The dependent variable in columns 1–4 is the natural log of the poverty rate for single-female household heads aged 18–64. The dependent variable in columns 5–8 is the natural log of the single-female household heads aged 18–64 who reported positive work hours. The poverty rate is calculated using family income and the family size-adjusted poverty line. Adult wage measures and unemployment ratios are calculated for those aged 25–54. The Prais-Winsten Feasible Generalized Least Squares (FGLS) approach controls for state-specific autocorrelation and panel-specific correlated errors across states. All regressions are weighted by the relevant population of workers.

Source: Computed by the authors.

2000; Burkhauser, Couch, and Wittenburg, 2000a, 2000b; Campolieti, Fang, and Gunderson, 2005; Couch and Wittenburg, 2001; Currie and Fallick, 1996; Neumark and Wascher, 2004, 2006; Partridge and Partridge, 1999; Sabia, 2006). Thus, our simulated estimates of benefits to workers from a federal minimum-wage hike could be considered upper bound estimates.[15]

D. Simulation of Federal Minimum-Wage Hikes

The remaining tables examine who gained from the 1996 increase in the federal minimum wage to $5.15 per hour and who will gain from the proposed minimum-wage increase to $7.25 per hour by using a sample of workers aged 17–64 from the March 1996 and March 2004 CPS. Wage data is used from the outgoing rotation groups, which include information on workers' usual gross weekly earnings in their primary job and the number of hours per week they usually work in that job.[16]

In Table A1, we report the relationship between workers' wage rates and the income-to-needs ratio of their households prior to a simulated increase in the federal minimum wage from $4.25 to $5.15 per hour in 1995; this simulation for working single mothers is repeated in Table A2. In Table A3, we report the relationship between workers' wage rates and the income-to-needs ratio of their households prior to a simulated increase in the federal minimum wage from $5.15 to $7.25 per hour in 2003 and in Table A4, repeat this

15. One caveat to this assumption is that in the presence of labor market imperfections such as monopsonies, minimum-wage increases may force employers to internalize the negative employment externality caused by their labor market power. In the presence of monopsonies, minimum-wage hikes could have positive effects on employment; thus, our assumption of no disemployment effects could understate benefits of minimum-wage hikes. However, while Card and Krueger (1995) find some evidence of positive employment effects, a wide body of recent empirical literature, noted above, suggests strong evidence of negative employment effects. Moreover, a recent study by Aaronson and French (2007) finds strong evidence that "labor costs from minimum-wage increases are pushed onto consumers in the form of higher prices," a result consistent with competitive labor markets and not with the theory of monopsony power.

16. Workers paid by the hour directly report their hourly wage rate. As argued by Burkhauser, Couch, and Glenn (1996), these data are better suited for simulating the effects of a rise in the minimum wage because they do not require workers to recall earnings and hours from the previous year.

simulation for working single mothers. Each row shows the wage distribution of workers living in a household with a given income-to-needs ratio. The last row shows the percentage of all workers in each wage category. In the case of the minimum-wage increase to $5.15 per hour, in addition to assuming that all workers who earned between $4.25 and $5.15 per hour were helped by this minimum-wage increase, we also assume that workers who earned between $4.00 and $4.24 are covered by the federal minimum wage and would be helped and that there are no demand-side adverse employment effects. We assume those reporting wage rates below $4.00 per hour are not in federal minimum wage–covered employment and would not be helped. Thus, as can be seen in Table 9, which summarizes the results shown in these appendix tables, we estimate that the federal minimum-wage increase to $5.15 per hour in 1996 affected 8.6% of all workers (row 1, column 1).

Table 9 shows that there is a connection between low wages and low income—a greater share of those workers living in poor households held jobs that paid between $4.00 and $5.15 per hour than did workers living in higher income-to-needs households. However, there is substantial variance in the wage earnings of workers within income-to-need categories because most households have more than one worker and many have other sources of income. Hence, as can be seen in row 2, column 1, even in poor working households (those whose income-to-needs ratio is less than 1), only a minority of workers, 27.3%, were helped by the minimum-wage increase to $5.15 per hour in 1996.

Moreover, as column 3 shows, the share of all workers who actually live in poor (4.6%) or in near-poor (5.8%) households—those with income-to-needs ratios between 1.00 and 1.24 or between 1.25 and 1.49—is small relative to that of workers in households with incomes three times the poverty line or $46,707 for a family of four in 1995 (64.1%). Hence, as can be seen in column 5, we estimate that a small minority of those helped by the last federal minimum-wage increase in 1996 lived in poverty (14.7) or in near-poverty (15.5). The majority of minimum-wage workers (69.8%) lived in households with incomes well above the poverty line, and 40.2% lived in households whose incomes were three times the poverty line or greater.

TABLE 9

Distribution of Beneficiaries of Minimum-Wage Increases for All Workers and Working Single Mothers by Income-to-Needs Category

	All						Single Mothers					
	Percent of Workers Who Stand to Benefit[a]		Percent of All Workers		Percent of Beneficiaries Who Gain		Percent of Workers Who Stand to Benefit[a]		Percent of All Workers		Percent of Beneficiaries Who Gain	
Years	(1) 1995	(2) 2003	(3) 1995	(4) 2003	(5) 1995	(6) 2003	(7) 1995	(8) 2003	(9) 1995	(10) 2003	(11) 1995	(12) 2003
All	8.6	9.7	100	100	100	100	9.5	13.2	100	100	100	100
Poverty (less than 1.00)	27.3	31.1	4.6	4.2	14.7	13.4	22.4	37.8	23.7	18.5	55.6	53.4
1.00–1.24	27.7	24.0	2.5	2.1	8.1	5.3	6.3	28.8	7.6	6.8	5.0	15.0
1.25–1.49	19.2	24.8	3.3	2.6	7.4	6.5	15.7	24.8	10.4	6.5	17.2	12.2
1.50–1.99	11.6	15.9	7.4	6.4	10.1	10.5	4.0	3.2	15.3	14.3	6.5	3.4
2.00–2.99	9.3	12.0	18.1	15.7	19.5	19.4	5.6	6.2	20.5	22.9	12.1	10.9
3.00 or above	5.4	6.3	64.1	69.1	40.2	44.8	1.5	2.1	22.5	31.0	3.6	5.1

[a]In 1995, workers who stand to benefit are defined as those earning between $4.00 and $5.14 per hour. In 2003, workers who stand to benefit are defined as those earning between $5.15 and $7.24 per hour.

Source: Derived from Tables 1A, 2A, 3A, and 4A in the Appendix.

Columns 7, 9, and 11 of Table 9 report the results of the same simulated minimum-wage increase but focus on working single mothers. As can be seen in column 7, the share of working single mothers helped by a minimum-wage increase to $5.15 per hour (9.5%) is slightly higher than that of the entire population (8.6%). But the share of poor single mothers who earn wages between $4.00 and $5.15 (22.4%) is actually smaller than that of the entire population (27.3%). However, because it was much more likely that a single mother who worked lived in a poor household (23.7%) than was the case in the entire worker population (4.6%), it is certainly the case that a greater share of the working mothers who were helped by a minimum-wage hike lived in poor households (55.6%) than was the case for the overall population (4.6%).

Next, we simulate a federal minimum-wage increase from $5.15 to $7.25 per hour using data from the March 2003 CPS. In addition to assuming that all workers who earned between $5.15 and $7.24 per hour were helped by this minimum-wage increase, we also assume that workers who earned between $5.00 and $5.14 are covered by the federal minimum wage and would be helped and that there are no disemployment effects. We assume those reporting wage rates below $5.00 per hour are not in federal minimum wage–covered employment and would not be helped. Thus, as can be seen in row 1, column 2 of Table 9, which summarizes the results shown in the appendix tables, we estimate that the federal minimum-wage increase to $7.25 per hour in 2003 affected 9.7% of all workers (row 1, column 1). Once again, a greater share of workers in households with low income-to-needs ratios earned this amount; 31.1% of workers living in poor households will be helped by a minimum-wage increase to $7.25 per hour, which is somewhat higher than the 27.3% who were helped by the last minimum-wage increase. However, because even a smaller percentage of all workers lived in poor or in near-poor households in 2003 than in 1995, a slightly smaller percentage of the workers who are helped by the minimum wage are poor—13.4% (11.8%) of those helped by the minimum wage live in poor (near-poor) households in 2003 relative to 14.7% (15.5%) in 1995. In contrast, 44.8% live in households with incomes three or more times the poverty line or $56,430 for a family of four in 2003. Hence, the target efficiency of this minimum-wage increase will not be better, and, in fact, could be slightly worse, than the 1996 increase.

The dramatic increase in the employment of single mothers has changed the distribution of wages for that population, but as Table 9 shows, the majority of single mothers continue to earn wages well above the proposed minimum wage of $7.25 per hour: 13.2% of single mothers earn hourly wage rates between $5.00 and $7.24 per hour. While this is larger than the 9.5% of single mothers who earned hourly wage rates between $4.00 and $5.14 in 1995, it is still a very small share of working single mothers. It is also the case that the share of single mothers earning between $5.00 and $7.25 per hour in lower income-to-needs households is larger. Among poor working mothers, 37.8% will be helped by an increase in the minimum wage to $7.25. This is considerably larger than the 22.4% of poor working mothers who were helped by the last minimum-wage increase, but it is still a minority of all working poor mothers. However, this rise in the share of poor working mothers who are helped by this minimum-wage hike is offset by the fact that the share of working mothers who live in poor (18.5%) and in near-poor (13.2%) households is even smaller than was the case in 1995. Hence, the share of single mothers helped by this minimum-wage increase who live in poverty, 53.4%, is slightly smaller than the 55.6% who gained in 1996.

In Table 10, we estimate the addition to the yearly wage bill of a minimum-wage increase to $5.15 per hour and how the gains to workers were distributed in 1995 and then compare it with the yearly wage bill of a minimum-wage increase to $7.25 and how the gains to workers would have been distributed in 2003. To the extent that markets are perfectly competitive, the costs of higher minimum wages will eventually result in higher prices to consumers for the goods and services they purchase.[17] This table uses the sample of workers analyzed in Table 9 and assumes that all workers continue to be employed at the same number of hours following the minimum-wage increase. Workers whose wages are above the federal minimum

17. In this analysis, we do not attempt to measure the general equilibrium effects of minimum-wage increases on the poor. MaCurdy and McIntyre (2001) argue that because poor families are likely to have a smaller share of their income come from employment and are more likely to purchase goods and services that are produced by low-skilled labor, a disproportionate amount of the cost of minimum-wage increases will be borne by the poor.

TABLE 10
Distribution of Benefits Across Income-to-Needs Categories from a Federal Minimum-Wage Increase from $4.25 to $5.15, based on the 1995 Wage Distribution, and from $5.15 to $7.25, based on the 2003 Wage Distribution

Income-to-Needs Ratio	Total Benefits (billions of dollars)	Mean Benefit per Household (dollars)	Distribution of Benefits (%)			
			Total	Blacks	Nonblacks	Single-Female Headed Households
Minimum-wage increase from $4.25 to $5.15 per hour[a]						
Less than 1.00	0.68	527	14.2	2.9	11.3	2.2
1.00–1.24	0.39	630	8.2	0.8	7.4	0.4
1.25–1.49	0.33	485	6.8	1.1	5.7	0.6
1.50–1.99	0.49	532	10.2	3.0	7.2	0.2
2.00–2.99	0.98	600	20.5	3.3	17.2	0.7
3.00 or above	1.92	566	40.1	4.4	35.7	0.2
All households	4.79	538	100.0	15.5	84.5	4.3
Minimum-wage increase from $5.15 to $7.25[b]						
Less than 1.00	2.33	1,110	12.7	3.7	9.0	3.8
1.00–1.24	1.16	1,392	6.3	1.7	4.6	1.3
1.25–1.49	1.34	1,298	7.3	2.3	5.0	1.1
1.50–1.99	1.91	1,151	10.4	2.6	7.8	1.0
2.00–2.99	3.95	1,289	21.5	3.8	17.7	0.8
3.00 or above	7.67	1,090	41.8	7.0	34.8	0.4
All households	18.36	1,167	100.0	21.1	78.9	8.4

[a]Simulation assumes hours worked in 1995 remained the same under the new minimum wage, and those earning below $4.00 per hour were employed in a job not covered by minimum-wage rules.
[b]Simulation assumes hours worked in 2003 remained the same under the new minimum wage, and those earning below $5.00 per hour were employed in a job not covered by minimum-wage rules.
Source: Estimated from the outgoing rotation group of the CPS, March 1996 and March 2003.

wage are assumed to have their wages unchanged. For a worker earning below the minimum, the annual gain from the federal minimum-wage increase is calculated as the product of the worker's hourly wage increase and the worker's average annual hours worked. The total benefits are calculated as the weighted sum of each worker's annual benefits.

Assuming no employment losses or reductions in hours worked, the total wage bill of the minimum-wage hike was $4.79 billion in 1996 dollars (column 1). While the average benefit per household was approximately the same (column 2) across the income distribution, the share going to the groups were not. As can be seen in column 3, the majority of the benefits went to workers in households with income-to-needs ratios greater than 2 (60.6%), with 40.1% of benefits going to those from households whose incomes were three times the poverty line or greater. Poor households received 14.2% of the benefits. Likewise, the overall gains to vulnerable populations were small—4.3% of the gains of the 1996 minimum-wage hike went to single-mother households, 2.2% went to poor single-mother households. Blacks received 15.5% of the gains, and 2.9% went to poor black households.[18]

18. The share of benefits from a minimum-wage hike that accrue to workers in poor (nonpoor) households is not necessarily equivalent to the share of minimum-wage workers in poor (nonpoor) households. For example, in 1995, 14.7% of minimum-wage workers lived in poor households (see the first row of the final column in Table A1). However, as the first row of the third column in Table 10 shows, workers in poor households gained only 14.2% of the benefits from the minimum-wage hike. The difference in these percentages arises because benefits are calculated based on hours worked per year, weeks worked per year, and the difference between the proposed minimum wage and the workers' current wage. Thus, if workers in poor households work fewer hours, fewer weeks, or have wage rates closer to the proposed minimum wage than workers in nonpoor households, we would expect the share of benefits they receive to be less than the percentage of workers they represent.

These estimates assume that hours worked and employment did not change after the 1996 minimum-wage hike. But the general consensus in the economics literature is that minimum-wage increases will cause some workers to lose their jobs.[19] Moreover, Neumark, Schweitzer, and Wascher (2004, 2005) show that minimum-wage increases reduce the employment and hours worked of low-wage workers and increase the proportion of families that are poor or near-poor. Hence, the minimum-wage hike was probably less target efficient than we estimate, and our estimates are likely to be upper-bound estimates of the true impact.

Even under our optimistic assumption of no disemployment effects of the minimum-wage hike, we conclude that the 1996 minimum-wage hike did little to improve the economic well-being of poor households. Most workers from poor households were not helped by the 1996 minimum-wage increase because they already earned more than $5.15 per hour. Furthermore, the majority of workers helped lived in higher income households, so the minimum-wage increase was also not target efficient—14.7% of workers who gained from the increase lived in poor households. These findings are consistent with studies of previous minimum-wage hikes that suggest that even under the assumption of no adverse employment effects the minimum-wage is a poor mechanism for helping the working poor (Burkhauser, Couch, and Glenn, 1996; Burkhauser, Couch, and Wittenburg, 1996; Burkhauser and Finegan, 1989).

Under the optimistic assumption that hours worked and employment status will not change after the proposed minimum-wage hike, Table 10 also shows that the total wage bill of the proposed minimum-wage increase to $7.25 per hour will be $18.36 billion in 2003 dollars.[20] We calculate that 12.7% of the benefits will accrue to the working poor, which is no better than, and perhaps slightly worse than, the 14.2% of the benefits that accrued to poor workers from the 1996 minimum-wage increase. The dramatic increases in the employment of African Americans and single mothers between 1995 and 2002 will mean that these populations will receive higher shares of the gains: 21.1% for blacks versus 15.5% last time, and 8.4% for single mothers compared to 4.3% last time. But poor African Americans will receive 3.7% of the benefits and poor single mothers 3.8%.[21] For poor single mothers, this percentage (3.8%) is higher than in 1995 (2.2%), but as we have already shown, this is not due to improved target efficiency but to an increase in the share of poor single mothers who have entered the labor force following the welfare reforms of 1996.

V. CONCLUSIONS

This article has explored the effectiveness of the minimum wage as an antipoverty measure during the 1990s. Building on the model developed by Card and Krueger (1995), we find no evidence that increases in the minimum wage reduced poverty rates among workers or even among working single mothers over the period 1988–2003, using data from the CPS. We conclude that an important reason for this result is that the benefits of minimum-wage increases tend to primarily accrue to nonpoor households. Most workers living in poor households earn wage rates that are higher than proposed federal minimums and hence do not gain from

19. Until the 1990s, a consensus existed among economists that raising the minimum wage caused net employment losses. Brown (1988) summarizes this literature by concluding that a 10% increase in the minimum wage was associated with a 1%–3% reduction in teenage employment (a common indicator of entry-level employment). Card and Krueger (1995) fundamentally challenged this consensus. An additional decade of research has discounted the notion that minimum-wage increases have positive employment effects, and a near consensus has returned to the view that modest minimum-wage increases have significant but relatively modest negative effects on the employment of teenagers and other low-skilled groups (see Abowd et al., 2000; Burkhauser, Couch, and Wittenburg, 2000b; Deere, Murphy, and Welch, 1995; Neumark and Wascher, 1994, 2000, 2002, and 2004). Public opinion surveys conducted in 1996 reveal that the median labor economist reported that a 10% increase in the minimum wage would result in a 1% decline in the employment of teenagers, consistent with the finding of Brown, Gilroy, and Kohen (1982) (Fuchs, Krueger, and Poterba, 1998).

20. The figures for 2003 are calculated analogously to those in 1995.

21. It has been argued that focusing on how the minimum-wage increases the earnings of the working poor understates its overall effect on workers because it forces the wage distribution up in a "ripple effect." While possible "ripple effects" of minimum-wage increases up the wage distribution are often discussed in popular debates over the minimum wage and in policy reports (Bernstein and Schmitt, 1998; Spriggs and Klein, 1994), we know of no studies in peer-reviewed economics journals that have found evidence of significant ripple effects.

them, and most minimum-wage workers who do gain from them live in nonpoor households.

Hence, we argue that minimum-wage increases are a weak policy tool for increasing the household income of the working poor. While a somewhat higher percentage of workers in poor households will be helped by the proposed federal minimum-wage increase to $7.25 per hour than were helped by the 1996 federal minimum-wage increase, an even larger percentage of those who are helped do not live in households that are either in or near poverty—74.8% versus 69.8%. This is true despite the increase in the share of low-wage workers who were household heads between 1989 and 2003. While the post-1996 rise in the labor force participation rates of single mothers increased the share of the gains they will receive from a minimum-wage increase, even among this more vulnerable population, the majority of poor working mothers will not gain from the $7.25 proposed minimum-wage increase. Thus, even the growth in the share of single mothers in the low-wage population has not changed the finding that the minimum wage is a poor antipoverty tool.

Even the small gains that we find among the working poor probably overestimate the actual gains of the proposed legislation to the working poor since our simulations assume that minimum-wage increases will have no negative employment effects. In fact, the preponderance of evidence suggests that teenagers, young blacks, and young high school dropouts will experience reductions in their employment rates when minimum wages are increased.[22]

An effective policy alternative to the minimum wage is the EITC. The federal EITC program provides a tax credit of 40 cents for every dollar in wages earned by a worker in a low-income household with two or more children, and a credit of 34 cents per dollar earned for a worker in a poor household with one child. Thus, workers living in poor, one-child households and earning the current federal minimum of $5.15 per hour have an effective minimum wage of $6.90 per hour, and workers living in poor households with two or more children have an effective minimum wage of $7.21 per hour. In some states, federal EITC programs are supplemented by state programs and provide even greater benefits to the working poor (see Burkhauser and Sabia, 2004 and Schmeiser and Falco, 2006, for a discussion of the New York EITC supplement in the context of minimum-wage policy; see Neumark and Wascher, 2001, for a more general discussion of EITC policy).

In contrast to the minimum wage, which is based solely on a worker's wage rate, the EITC is based on household income. Thus, a worker earning $7.25 or more per hour and living in a poor household would not benefit from the proposed minimum-wage hike but would be eligible for EITC benefits. Most poor or near-poor households, especially those headed by single mothers, would benefit from the EITC, while a minority would gain from a minimum-wage hike. Moreover, because EITC costs are not borne by employers, there will be no reduction in employers' demand for low-skilled workers, as is the case with a minimum-wage increase.

22. Under the assumptions we have made in our simulations, a minimum-wage increase will have no effect on employment. Hence, the percentage of the working poor helped by a minimum-wage hike will grow with the size of the wage hike. So, for example, if we had simulated an increase in the minimum wage to 50% of the gross average hourly earnings of all production and nonsupervisory workers in the private nonfarm sector, the minimum-wage level long suggested by the AFL-CIO, more poor workers would have benefited. But so would the number of nonpoor workers. As we show in Table 1, in 2003, 83% of workers earning 50% of the average private sector wage (defined as above) lived in nonpoor households. Thus, it is unclear even under these optimistic assumptions that a larger minimum-wage hike would have been more target efficient. But even more importantly, as the proposed minimum-wage hike grows, it is increasingly more difficult to argue that its behavioral effects can be ignored in such simulations.

APPENDIX TABLE A.1

Wage Distribution of All Workers by Income-to-Needs Ratio of Their Household in 1995

Income-to-Needs Ratio	Hourly Wage Categories[a]							Percent of All Workers	Percent of Workers Earning More than $3.99 and Less Than $5.15
	$0.01–$3.99	$4.00–$4.24	$4.25–$5.14	$5.15–$7.99	$8.00–$14.99	$15.00 and over	Total		
Less than 1.00	3.7	1.4	25.9	44.2	21.1	3.7	100.0	4.6	14.7
1.00–1.24	5.0	0.8	26.9	36.9	26.6	3.9	100.0	2.5	8.1
1.25–1.49	4.1	1.3	17.9	43.7	29.4	3.7	100.0	3.3	7.4
1.50–1.99	3.0	0.2	11.4	41.3	37.0	7.1	100.0	7.4	10.1
2.00–2.99	2.6	0.3	9.0	29.4	47.0	11.9	100.0	18.1	19.5
3.00 or above	1.1	0.3	5.1	15.1	39.4	39.0	100.0	64.1	40.2
Whole category share[b]	1.8	0.4	8.2	22.5	39.1	28.1	100.0	100.0	100.0

[a]Hourly wage rates are based on a direct question concerning earnings per hour on their current primary job. All income data used to calculate income-to-needs ratios come from retrospective information from the previous year because that is the period for which it is reported. Wages are in 1996 dollars.

[b]Share of all workers with wage earnings in each category.

Source: Estimated from the outgoing rotation group of the CPS, March 1996.

APPENDIX TABLE A.2

Wage Distribution of Working Single Mothers by Income-to-Needs Ratio of Their Household in 1995

Income-to-Needs Ratio	Hourly Wage Categories[a]							Percent of All Workers	Percent of Workers Earning More Than $3.99 and Less Than $5.15
	$0.01–$3.99	$4.00–$4.24	$4.25–$5.14	$5.15–$7.99	$8.00–$14.99	$15.00 and over	Total		
Less than 1.00	4.5	1.3	21.1	51.8	16.9	4.4	100.0	23.7	55.6
1.00–1.24	0.0	0.0	6.3	51.9	33.2	8.6	100.0	7.6	5.0
1.25–1.49	0.0	0.0	15.7	55.3	26.7	2.3	100.0	10.4	17.2
1.50–1.99	0.0	0.0	4.0	33.5	49.4	9.0	100.0	15.3	6.5
2.00–2.99	3.4	0.0	5.6	15.7	64.3	11.0	100.0	20.5	12.1
3.00 or above	0.2	0.0	1.5	9.4	46.5	42.4	100.0	22.5	3.6
Whole category share[b]	2.4	0.3	9.2	32.4	40.5	15.1	100.0	100.0	100.0

[a]Hourly wage rates are based on a direct question concerning earnings per hour on their current primary job. All income data used to calculate income-to-needs ratios come from retrospective information from the previous year because that is the period for which it is reported. Wages are in 1996 dollars.

[b]Share of all workers with wage earnings in each category.

Source: Estimated from the outgoing rotation group of the CPS, March 1996.

APPENDIX TABLE A.3

Wage Distribution of All Workers by Income-to-Needs Ratio of Their Household in 2003

Income-to-Needs Ratio	Hourly Wage Categories[a]							Percent of All Workers	Percent of Workers Earning More Than $4.99 and Less Than $7.25
	$0.01–$4.99	$5.00–$5.14	$5.15–$7.24	$7.25–$8.99	$9.00–$14.99	$15.00 and over	Total		
Less than 1.00	4.5	1.2	29.9	24.7	29.0	10.7	100.0	4.2	13.4
1.00–1.24	2.7	1.5	22.5	23.2	35.7	14.5	100.0	2.1	5.3
1.25–1.49	1.8	1.0	23.8	20.4	38.9	14.1	100.0	2.6	6.5
1.50–1.99	2.6	0.6	15.3	21.1	44.5	15.9	100.0	6.4	10.5
2.00–2.99	1.7	0.4	11.6	14.3	47.3	24.8	100.0	15.7	19.4
3.00 or above	1.3	0.3	6.0	6.6	28.0	57.8	100.0	69.1	44.8
Whole category share[b]	1.6	0.4	9.3	10.2	32.6	45.9	100.0	100.0	100.0

[a]Hourly wage rates are based on a direct question concerning earnings per hour on their current primary job. All income data used to calculate income-to-needs ratios come from retrospective information from the previous year because that is the period for which it is reported. Wages are in 2003 dollars.

[b]Share of all workers with wage earnings in each category.

Source: Estimated from the outgoing rotation group of the CPS, March 2003.

APPENDIX TABLE A.4

Wage Distribution of Working Single Mothers by Income-to-Needs Ratio of Their Household in 2003

Income-to-Needs Ratio	Hourly Wage Categories[a]							Percent of All Workers	Percent of Workers Earning More than $4.99 and Less Than $7.25
	$0.01–$4.99	$5.00–$5.14	$5.15–$7.24	$7.25–$8.99	$9.00–$14.99	$15.00 and over	Total		
Less than 1.00	4.4	1.3	36.5	29.0	23.3	5.5	100.0	18.5	53.4
1.00–1.24	0.5	1.9	26.9	28.7	36.6	5.5	100.0	6.8	15.0
1.25–1.49	2.9	0.0	24.8	22.1	39.4	10.9	100.0	6.5	12.2
1.50–1.99	3.6	0.0	3.2	17.4	64.1	11.8	100.0	14.3	3.4
2.00–2.99	1.8	0.0	6.2	6.9	59.2	25.8	100.0	22.9	10.9
3.00 or above	0.9	0.0	2.1	6.0	25.9	67.6	100.0	31.0	5.1
Whole category share[b]	2.2	0.4	12.8	14.7	40.1	29.9	100.0	100.0	100.0

[a]Hourly wage rates are based on a direct question concerning earnings per hour on their current primary job. All income data used to calculate income-to-needs ratios come from retrospective information from the previous year because that is the period for which it is reported. Wages are in 2003 dollars.

[b]Share of all workers with wage earnings in each category.

Source: Estimated from the outgoing rotation group of the CPS, March 2003.

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