

**PROGRESS TOWARD SELF-SUFFICIENCY
FOR LOW-WAGE WORKERS**

FINAL REPORT

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EXECUTIVE SUMMARY

Over the course of the 1990s, enormous strides were made in increasing work among groups that had traditionally low labor force participation, such as single mothers and welfare recipients. Many of these workers have joined the low-wage labor market, and some continue to rely on government benefits, such as food stamps, to make ends meet. These workers compete for jobs in the low-wage labor market with other groups of low-wage workers—from those seeking their first job out of high-school to middle-aged and older workers trying to support their families. For all these low-wage workers, particularly those in low-income families, it is of great interest to policymakers to better understand the factors that help low-wage workers attain higher wages and become independent from public assistance programs or self-sufficient. These factors include personal and family characteristics of low-wage workers as well as public programs that support work, such as child care and transportation assistance.

This study documents and analyzes the dynamics of the low-wage labor market and the role of work supports in helping low-wage workers in the early 2000s. We address these issues in four areas:

- a profile of low-wage workers' demographic and job characteristics;
- low-wage workers' wage progression;
- low-wage workers' progress toward self-sufficiency; and
- the role of work supports in low-wage workers' progress toward self-sufficiency.

Below we provide a discussion of our analytic approach, followed by a summary of our key findings in each area.

ANALYTIC APPROACH

The primary dataset used for this study is the 2001 panel of the Survey of Income and Program Participation (SIPP), a nationally representative sample of the noninstitutionalized population. The 2001 SIPP is a 36-month panel, with respondents interviewed every four months about the previous four months. The SIPP has a host of demographic and family characteristics and collects detailed information on income, employment and wages, job characteristics, and receipt of government benefits and work supports. We supplement these data with state-level economic data from the U.S. Census Bureau and the U.S. Department of Labor, as well as information on social support program rules and spending from multiple sources.

For this study, we define a low-wage worker as any individual age 16 to 64 who works for pay, is not a student, and whose hourly wage is less than what is required for a full-time, full-

year worker (i.e., 2,080 hours) to earn enough to keep a family of four out of poverty. Under this definition, a worker in 2001 (the first year of the 2001 SIPP) is considered a low-wage worker if his or her hourly wage rate is below \$8.63. This is equivalent to \$10.50 in 2008.

The first part of our study provides a descriptive analysis of the individual, family, and job characteristics of low-wage workers in January 2001. We also make comparisons to the characteristics of low-wage workers in January 2003. In addition to the full low-wage worker population, we include profiles of several key subgroups of low-wage workers that are of particular policy interest: unmarried mothers (living with their children under age 18), less-educated (high school degree or less) black men, and low-wage workers in low-income families (defined as less than 200 percent of the poverty threshold).¹

The second part of our study analyzes whether low-wage workers experience wage progression over time and the factors that influence wage progression. We include two measures of wage progression. First, we examine the percentage of workers in low-wage jobs in January 2001 who have transitioned to moderate- or higher-wage jobs or remain in low-wage jobs in January 2003. We define moderate wages as between one and two times the low-wage threshold and high wages as at least two times the low-wage threshold. Second, we analyze the percentage increase in the wage rates of low-wage workers between January 2001 and January 2003. For each measure, we use multivariate analyses to examine the relationship of low-wage workers' wage progression and their individual, family, and job characteristics. We also include separate descriptive analyses for the key subgroups mentioned above.

The third part of our study examines low-wage workers' progress toward self-sufficiency and the characteristics associated with higher levels of self-sufficiency. This component of the analysis focuses on low-wage workers who live in low-income families. This subpopulation is of particular interest because increases in these workers' wages can have a relatively large impact on family well-being and because these families are most likely eligible for government supports. We first examine the composition of low-wage workers' family incomes, assessing the relative roles of earnings and government benefits. We then report on a specific measure of self-sufficiency—the “self-sufficiency index”—which is defined as the ratio of family earned income to family needs, where needs are measured by the federal poverty threshold. Low-wage workers in families with a higher self-sufficiency index are more self-sufficient in that their earned

¹ In the report, we also include information for a fourth group, working unmarried mothers in low-income families. For clarity, this group is not included in the executive summary.

income covers a greater share of their needs. This measure captures how well-off low-wage workers' families are in the absence of any government support. Using multivariate analyses, we analyze the relationship between the level of self-sufficiency and individual and family characteristics. This part of the study also includes separate analyses for the subgroup of low-wage unmarried mothers in low-income families.

The final part of our study analyzes the role of work supports in helping low-wage workers achieve self-sufficiency. We examine three government-provided work supports: child care subsidies, transportation subsidies, and the earned income tax credit (EITC). Child care and transportation subsidies are categorized as work supports, as these benefits are targeted directly at low-wage workers' specific employment-related needs. The EITC more generally supplements low-wage workers' earnings, but it is considered a work support because the benefits are directly linked to workers' earnings and individuals without earnings cannot receive the credit. We estimate the relationship between the level of self-sufficiency (the earnings-to-needs ratio) and receipt of work supports. This estimation is complicated by the fact that persons who do and do not receive work supports can differ in systematic ways that make simple comparisons unreliable. We conduct two types of multivariate analysis modeling approaches designed to provide more reliable estimates.² Although these analyses have limitations, they help us better understand the role work supports play in helping families move toward self-sufficiency.

KEY FINDINGS

This study provides a portrait of low-wage workers, their wage growth, progress toward self-sufficiency, and the role of work supports in this progress. We summarize our key findings in each area here.

Profile of Low-Wage Workers

What share of workers is low-wage?

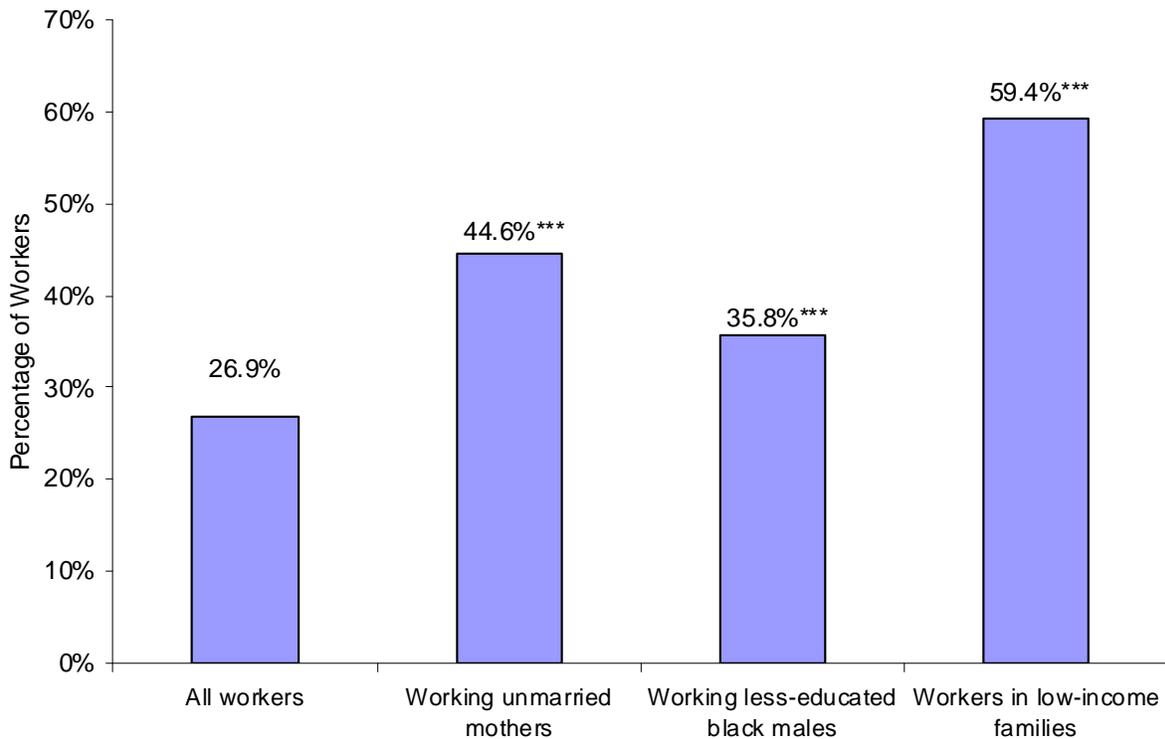
- More than a quarter of all workers in 2001—26.9 percent or over 28 million people—were low-wage workers, earning less than \$8.63 an hour.
- The percentage of workers that are low wage is fairly steady over time. Our most recent data shows that 24.4 percent of workers were low wage in 2003. A prior study using the

² Specifically, we estimate individual-level fixed effects models and instrumental variable (IV) models. For a fuller discussion of our modeling techniques and potential selection bias and endogeneity problems, please see the full report.

same definition found that 28 percent of workers in 1996 and 25 percent in 1999 were low wage (Schochet and Rangarajan 2004).

- Key subgroups of the population are disproportionately likely to be low-wage workers (exhibit ES-1). In 2001, 44.6 percent of all working unmarried mothers were low wage and 35.8 percent of working less-educated African American men were low wage. More than half of workers in low-income families, 59.4 percent, were low wage in 2001.

Exhibit ES-1: Percentage of Workers in Low-Wage Employment in January 2001, by Population Subgroup



Source: Authors' tabulations of the 2001 SIPP panel.

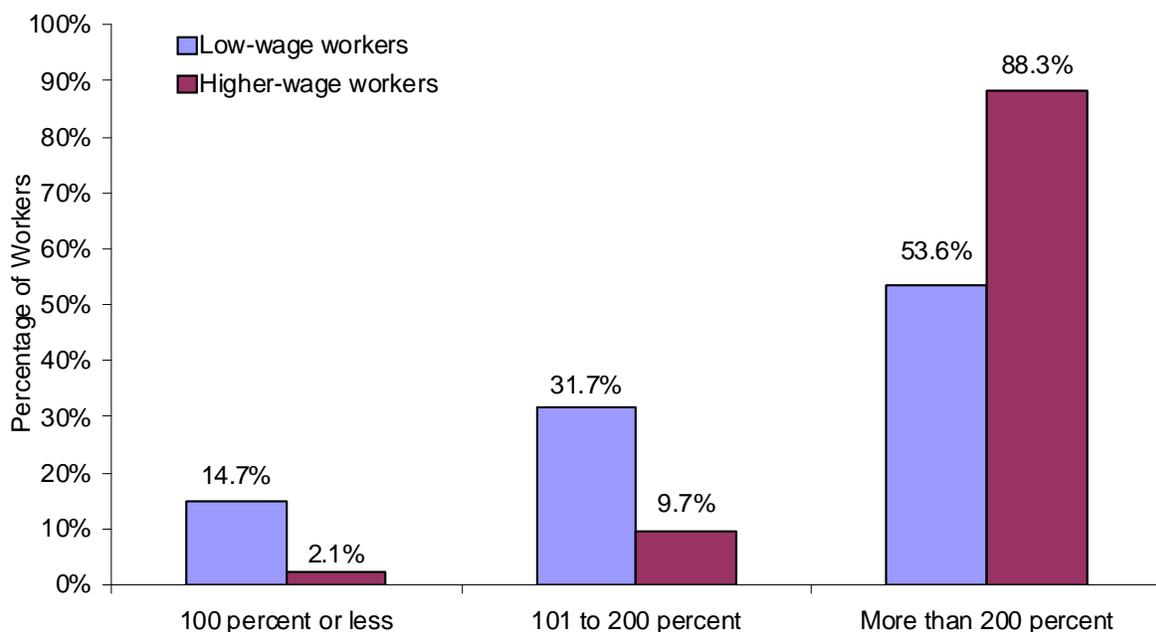
Note: *** indicates a statistically significant difference (at the $p < 0.01$ level) between the low-wage worker subgroup and all other low-wage workers.

What are the characteristics of low-wage workers?

- Low-wage workers differ from higher-wage workers (i.e., all workers who are not low wage) in important ways. They are disproportionately female, young, black, Hispanic, and unmarried. They are more likely to have a health-related work limitation and less likely to live in a metropolitan area.

- Low-wage workers have substantially less education than higher-wage workers. Twenty percent of low-wage workers have less than a high school degree, compared with only 6.2 percent of higher-wage workers. And only 11.0 percent of low-wage workers have a college degree or more, compared with 32.5 percent of all higher-wage workers.
- Low-wage workers live in different family structures than higher-wage workers, although family size and number and age of children are similar to higher-wage families. Low-wage workers are more likely to be single with children or cohabiting with children and are less likely to be married.
- Low-wage workers are as likely as higher-wage workers to have another employed adult in their family. Despite differences in marital status, roughly 55 percent of low-wage and higher-wage workers live in families where another adult is employed.
- Low-wage workers are disproportionately poor and living in public or subsidized housing compared with higher-wage workers. About 14.7 percent of low-wage workers live in families with income below the poverty threshold, compared with only 2.1 percent of higher-wage workers (exhibit ES-2).

Exhibit ES-2: Income as a Percentage of the Poverty Threshold for Workers in January 2001



Source: Authors' tabulations of the 2001 SIPP panel.

Note: The difference between low-wage workers and higher-wage workers is statistically significant at the $p < 0.01$ level.

Have the characteristics of low-wage workers changed over time?

- The individual and family characteristics of low-wage workers in 2001 are very similar to the characteristics of low-wage workers in 1996 reported in prior research (Schochet and Rangarajan 2004). In 1996, low-wage workers were disproportionately female, young, nonwhite, with a health-related work limitation, and with lower levels of education. They were also more likely to be unmarried and live in poor families. We find little evidence of any substantial change in the specific levels of these characteristics among low-wage workers between 1996 and 2001.
- Our analysis finds almost no substantial differences between the individual and family characteristics of low-wage workers in 2001 and 2003.

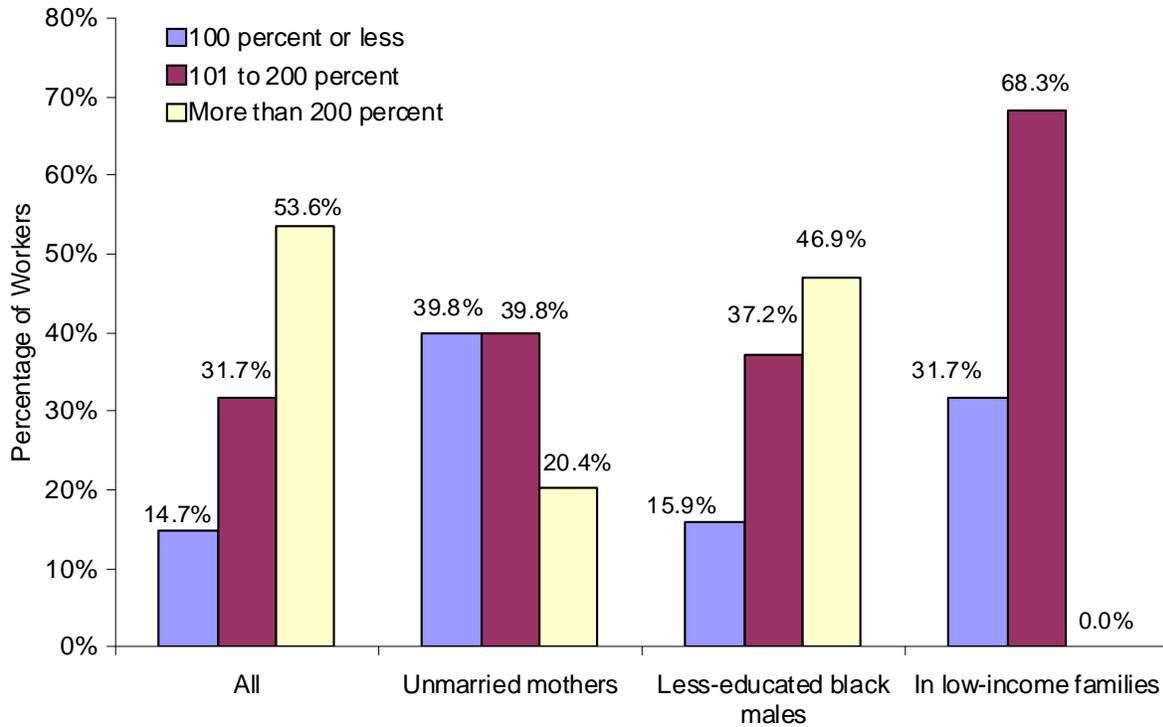
Do the characteristics of key subgroups of low-wage workers differ from all low-wage workers?

- The key subgroups we examine—unmarried mothers, less-educated black men, and low-wage workers in low-income families—have different individual and family characteristics than all low-wage workers. Low-wage workers in each of these subgroups are disproportionately younger and less-educated. Low-wage workers in low-income families and less-educated black men are disproportionately more likely to be unmarried with children than all low-wage workers.
- Compared with all low-wage workers, low-wage workers in these subgroups are more likely to be living in a poor family (exhibit ES-3). This is consistent with the finding that workers in these groups (except less-educated black men) are significantly less likely to have another employed adult in the family.

What are the characteristics of low-wage workers' jobs?

- By definition, low-wage workers in this study made less than \$8.63 in 2001. But many of these workers earned far less per hour than this cutoff. On average, workers falling into the low-wage category in 2001 earned \$6.56 an hour, and more than a third of all low-wage workers earned less than this an hour. This is compared with the average hourly wage of all higher-wage workers of \$17.65.
- The average low-wage worker works full-time hours (38 hours a week), but a substantial fraction work part time. Of all low-wage workers, 18.0 percent work between 20 and 34 hours a week, and 6.2 percent work less than 20 hours a week (exhibit ES-4). However, 10.9 percent of all low-wage workers report they are working part time involuntarily; that is, they were seeking but could not find full-time work. This is compared with only 3.4 percent of higher-wage workers.

Exhibit ES-3: Income as a Percentage of the Poverty Threshold for Low-Wage Workers in January 2001, by Population Subgroup

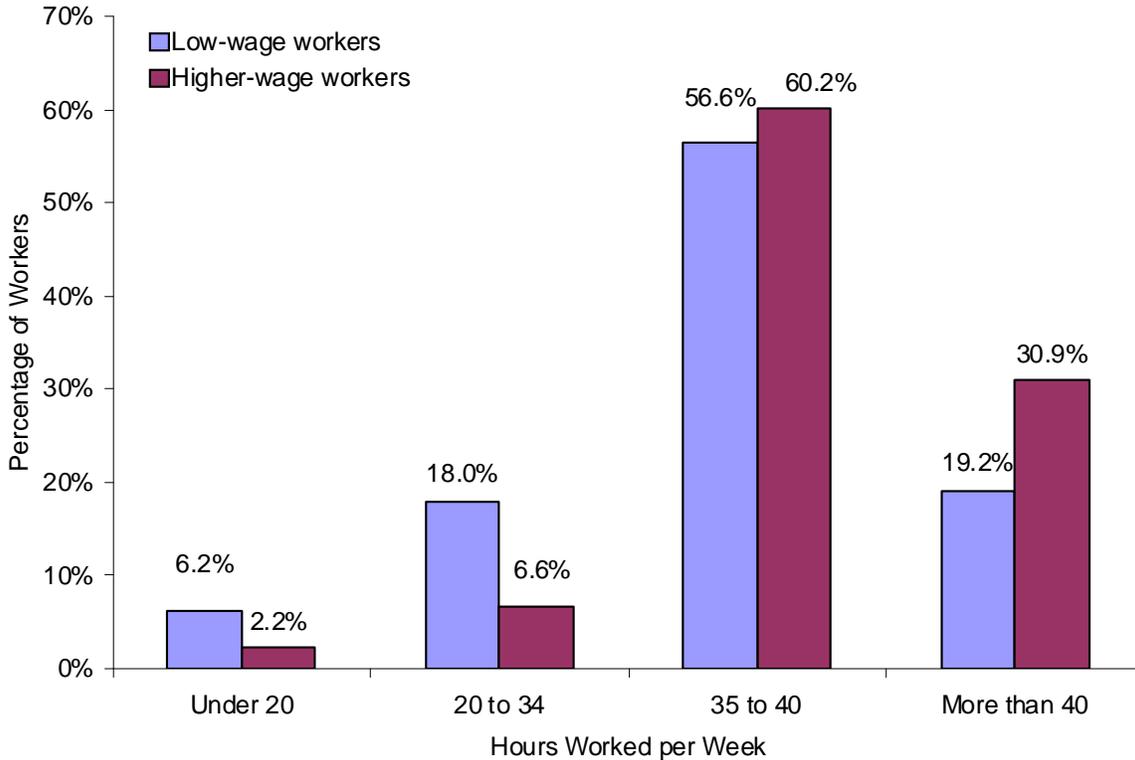


Source: Authors' tabulations of the 2001 SIPP panel.

Note: The difference between all low-wage workers and each low-wage worker subgroup is statistically significant at the $p < 0.01$ level.

- Low-wage workers are more likely than higher-wage workers to be working part time, in nonunionized jobs, and in small firms. These characteristics are part of the explanation for why these jobs are lower paying. Low-wage workers are also less likely to have employer-sponsored health insurance. Only 55.6 percent of low-wage workers have this type of coverage, compared with 87.8 percent of higher-wage workers.
- There are substantial differences in the occupations and industries of the jobs low-wage workers hold and those of higher-wage workers. Low-wage workers' jobs are more likely to be in service and sales occupations and are less likely to be in professional/technical occupations than higher-wage workers. Low-wage jobs are more likely to be in the wholesale/retail trade industries and less likely to be in manufacturing or public administration.

Exhibit ES-4: Usual Weekly Hours Worked for Workers in January 2001



Source: Authors' tabulations of the 2001 SIPP panel.

Note: The difference between low-wage workers and higher-wage workers is statistically significant at the $p < 0.01$ level.

Have the types of jobs held by low-wage workers changed over time?

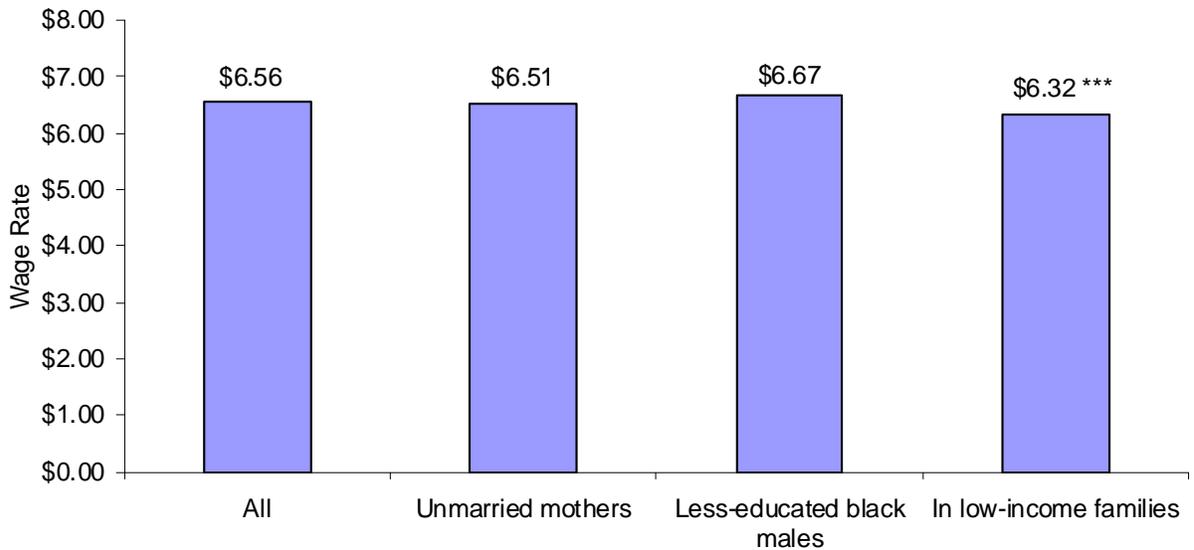
- At \$6.45, the average hourly wage of all low-wage workers in 2003 was slightly lower than the average hourly wage of low-wage workers of \$6.59 in 2001 (in 2001 dollars). Over the same period, average hourly wages of all non-low-wage workers increased from \$17.65 to \$18.13.
- The job characteristics of low-wage workers compared with higher-wage workers are largely unchanged between 2001 and 2003.
- Comparison to earlier research shows that low-wage workers in 1996 were also disproportionately more likely to work part time and work multiple jobs, and less likely to be in a union or have employer-provided health insurance, than higher-wage workers.
- However, there are some specific differences in the types of jobs held by low-wage workers in 1996 versus 2001. The share of low-wage workers working multiple jobs is somewhat higher in 2001 than in 1996, 11.1 percent compared with 8 percent. The share with employer-provided health insurance is also somewhat higher in 2001—55.6 percent

in 2001 compared with 50 percent in 1996. And although the distributions of occupation and industry are similar, a somewhat higher percentage of low-wage workers worked in service professions in 1996 than in 2001 (33 percent compared with 26.2 percent), with the difference made up by construction and professional/technical occupations in 2001.

Do key subgroups of low-wage workers hold different types of jobs?

- Average hourly wages of unmarried mothers, less-educated black men, and workers in low-income families differ only marginally from all low-wage workers. For example, low-wage workers in low-income families earn an average of \$6.32 an hour in 2001, compared with \$6.56 for all low-wage workers (exhibit ES-5).
- For the most part, the types of jobs held by low-wage workers in these key subgroups are similar to all low-wage workers. However, unmarried mothers and low-wage workers in low-income families are even less likely to have employer-provided health insurance than all low-wage workers.

Exhibit ES-5: Average Hourly Wage Rate of Low-Wage Workers in January 2001



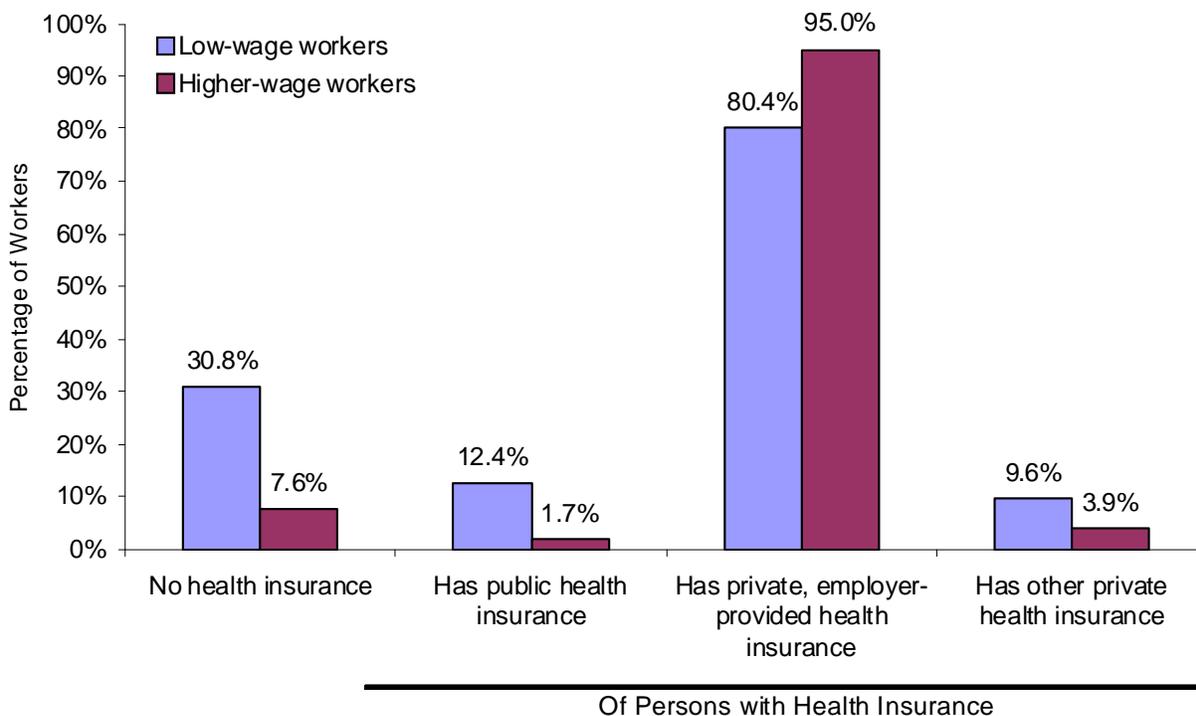
Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Statistical significance is calculated on the difference in average hourly wage between all low-wage workers and each other group in each year. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

What is the health insurance coverage of low-wage workers?

- Low-wage workers are much more likely to be without any health insurance coverage than higher-wage workers. In 2001, 30.8 percent of low-wage workers were without health insurance coverage, while only 7.6 percent of higher-wage workers lacked coverage (exhibit ES-6).

Exhibit ES-6: Health Insurance Status for Workers in January 2001



Source: Authors' tabulations of the 2001 SIPP panel.

Notes: 2.39 percent of low-wage workers and 0.58 percent of higher-wage workers in January 2001 have some combination of public and private health insurance coverage, and thus are double counted here. The difference between low-wage workers and higher-wage workers is statistically significant at the $p < 0.01$ level.

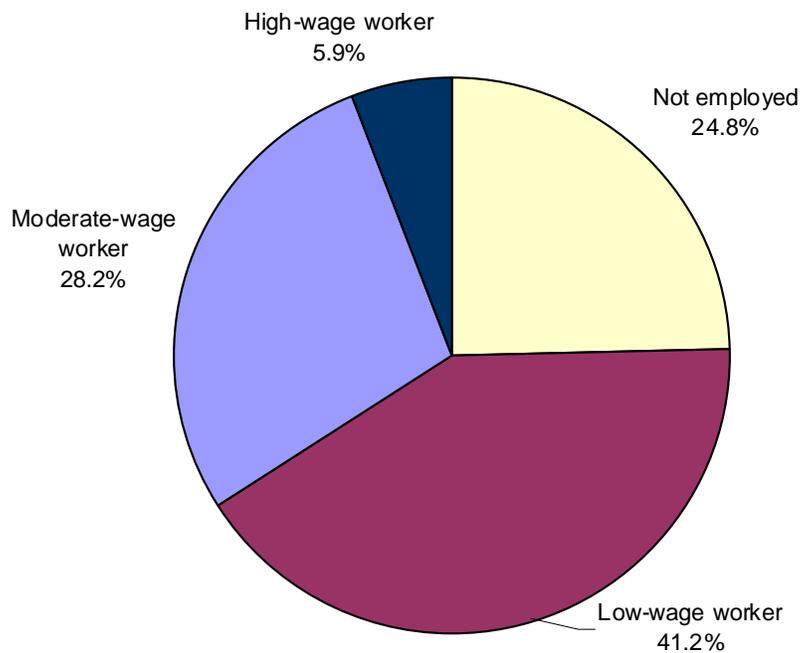
- For those who have coverage, employer-provided health insurance is by far the most common source for all workers. But even so, low-wage workers with health insurance are much less likely to have employer-provided health insurance than higher-wage workers.
- The same patterns are true in 2003, although the percentage of workers without health insurance coverage went up slightly for low-wage and higher-wage workers.

Low-Wage Workers' Wage Progression

How many low-wage workers move into higher-wage jobs over time?

- Over 40 percent of low-wage workers in January 2001 remained low-wage workers in January 2003, and 24.8 percent were not working at all (exhibit ES-7). About a third were working at higher-wage jobs in January 2003, with 28.2 percent working in moderate-wage jobs (wages between \$8.63 and \$17.26 an hour) and 5.9 percent working in high-wage jobs (over \$17.26 an hour).³
- The average low-wage worker spent 53.5 percent of the months between January 2001 and January 2003 in low-wage jobs, 23.8 percent of the months in moderate-wage jobs, 5.1 percent in high-wage jobs, and 17.5 percent of the months not working at all.

**Exhibit ES-7: Employment Status in January 2003
of Low-Wage Workers in January 2001**



Source: Authors' tabulations of the 2001 SIPP panel.

³ Dollar values are for 2001.

- Low-wage unmarried mothers and low-wage workers in low-income families showed slightly less progress than the average low-wage worker. About 47 percent of low-wage workers in these groups in January 2001 were also low-wage workers two years later, while less than 30 percent earned moderate or high wages. For less-educated African American men, progress is even worse. Over one-third of these low-wage men were not working in January 2003.

How much wage growth do low-wage workers experience?

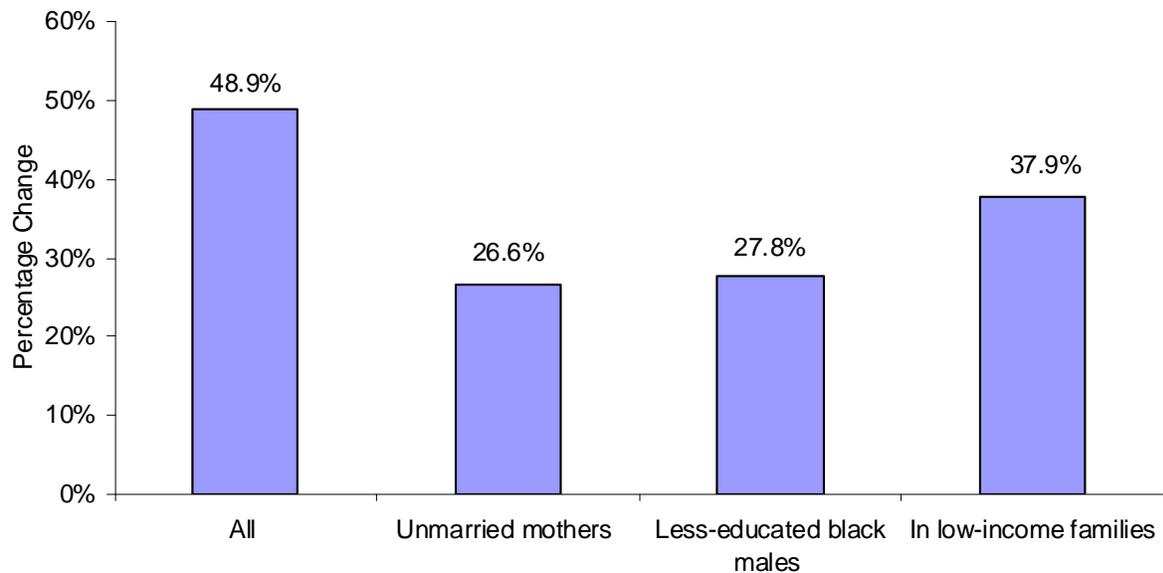
- On average, low-wage workers in 2001 who were also employed in 2003 earned \$6.59 in 2001. By 2003, this group of workers earned on average \$9.82 an hour. This is an increase of almost 50 percent. By definition, this excludes the quarter of low-wage workers in 2001 who were not working in 2003.
- Growth in average wages between 2001 and 2003 for key subgroups is substantially lower than for all low-wage workers (exhibit ES-8). The average wage growth was 26.6 percent for unmarried mothers, 27.8 percent for less-educated black men, and 37.9 percent for low-wage workers in low-income families. While wage growth was higher for low-wage workers in low-income families than the other subgroups, it was still lower than for all low-wage workers.

Who moves from low-wage to higher-wage employment?

- Based on the findings of multivariate analyses, low-wage workers who are male, white, living in metropolitan areas, working full time, or working in larger firms are significantly more likely to move to higher-wage employment (earning more than \$8.63 in 2001 dollars) than those who are not (exhibit ES-9).⁴ The likelihood that a male low-wage worker moves to a higher wage status between January 2001 and January 2003 is 8.8 percentage points higher than that of a woman. Black and Hispanic low-wage workers are 7.9 and 7.1 percentage points (respectively) less likely to move up than whites. By and large, family characteristics such as the number of adults and children present, the age of the youngest child, and marital status are not significantly related to advancement.

⁴ The results presented in this section on worker and job characteristics are drawn from model 1 in exhibit IV-7, while the results on experience and job change are drawn from model 3 in exhibit IV-7.

Exhibit ES-8: Change in Wage Rate among Low-Wage Workers in January 2001 Who Are Working in January 2003

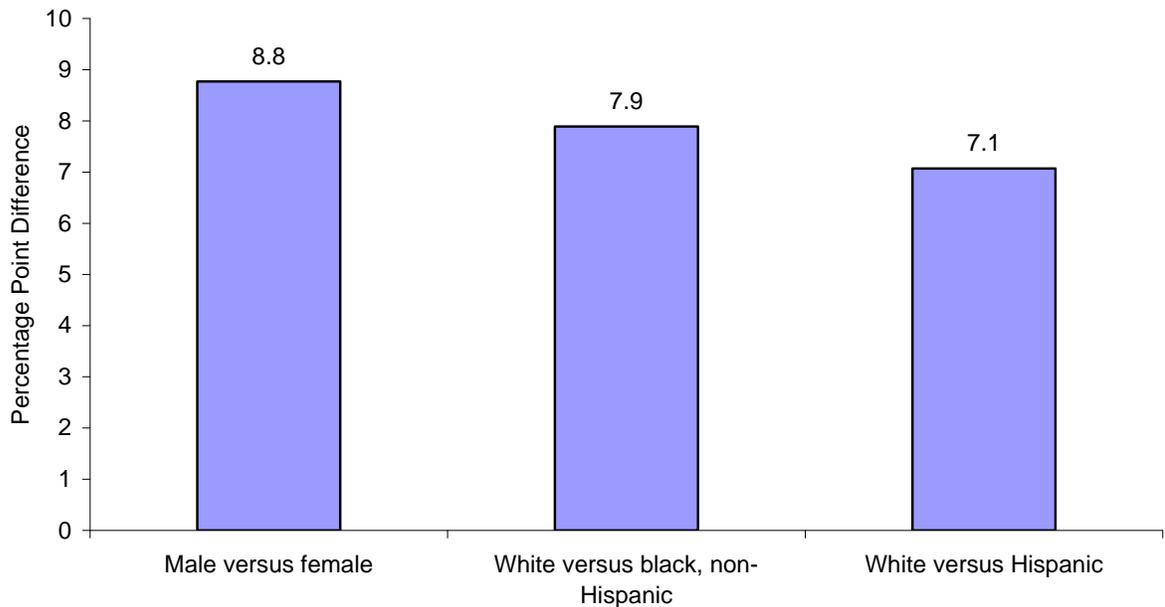


Source: Authors' tabulations of the 2001 SIPP panel.

Note: Each low-wage workers subgroup's wage rate in 2001 is statistically significantly different (at the $p < 0.01$ level) from its wage rate in January 2003.

- Low-wage workers' education is also related to their prospects for advancement. Compared with low-wage workers without high school degrees, those with high school educations (only) are 7.8 percentage points more likely to move to a higher wage status over the two-year study period. In turn, those with college degrees are 10.6 percentage points more likely to advance than those with only high school educations.
- Certain occupations offer more potential for advancement than others. For example, compared with sales occupations, those working as professionals are 8.8 percentage points more likely to move to a higher wage status in two years, while those in service occupations are 6.3 percentage points less likely to do so. A similar pattern emerges when we consider industry. Compared with those working in wholesale or retail trade, those working in construction are 12.1 percentage points more likely to advance.
- The stronger the job market, as measured by statewide unemployment rates, the more likely a low-wage worker will advance to a higher wage status. A one percentage point decrease in statewide unemployment rates is associated with a 2.4 percentage point

Exhibit ES-9: Predicted Percentage Point Difference in the Probability of Moving to Higher-Wage Employment



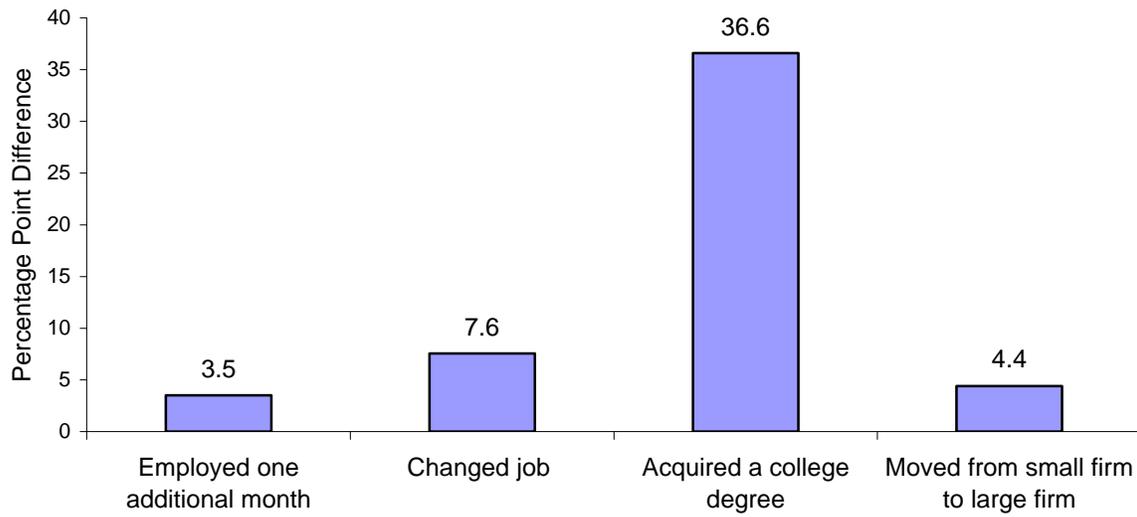
Source: The 2001 SIPP panel.

Notes: The sample is low-workers in January 2001 who are observed in the data in January 2003. The results are generated from a regression model; the dependent variable is 0 if the worker is not employed or is still low wage in January 2003 and 1 if the worker is a higher-wage worker in January 2003. Estimates are statistically significant at the $p < 0.01$ level and can be found in the report in exhibit IV-7, model 1.

increase in advancement. Each \$1,000 increase in annual state per capita income is associated with a 0.5 percentage point increase in the probability that a low-wage worker becomes a higher-wage worker in two years' time.

- Experience is an important indicator of advancement. Our multivariate models suggest that for each additional month of experience over the two-year period, the chance of advancing to a higher wage status rises by 3.5 percentage points. Given the distribution of work experience of low-wage workers in our sample, however, this large estimated effect likely reflects the vastly lower experience levels accrued by those who are no longer working in January 2003 compared with those still working at the end of the period, rather than true incremental benefit of working an additional month.
- Changing jobs is associated with movement to a higher wage status. Workers who change jobs are 7.6 percentage points more likely to move into a higher wage status than those who do not change jobs. Low-wage workers who change jobs are more likely to move up in status than those who do not even if their new jobs are in different industries and occupations than their previous jobs (exhibit ES-10).

Exhibit ES-10: Predicted Percentage Point Difference in the Probability of Moving to Higher-Wage Employment



Source: The 2001 SIPP panel.

Notes: The sample is low-workers in January 2001 who are present in the data in January 2003. The results are generated from regression models; the dependent variable is 0 if the worker is not employed or still low wage in January 2003 and 1 if the worker is a higher-wage worker in January 2003. Employed one additional month and changed jobs is taken from exhibit IV-7, model 3. Acquired a college degree is taken from exhibit IV-7, model 4. Estimates are statistically significant at the $p < 0.01$ level.

- Completing a college degree and becoming a full-time worker contribute to advancement. The probability of advancement is 36.6 percentage points higher for those acquiring a college degree than for those whose educational attainment does not change (exhibit ES-10). Experiencing an increase in employer size (from less than 25 to 100 or more), either through job change or because the employer expands, is also associated with advancement. Finally, the onset of a health-related work limitation reduces the prospects for advancement by 3.5 percentage points.

What factors are associated with wage growth?

- Many of the same factors associated with moving to higher wage status are also associated with wage growth generally. Low-wage workers who are male, white, have higher levels of education, and work full time are more likely to experience wage growth than those who are not. Wage growth is higher for those working in sales occupations than for those working in administrative, service, and craft occupations, but it is lower than for those in professional occupations. Compared with most every other industry, wage growth is consistently lower for those in wholesale and retail trade.

- Completing a college degree is strongly associated with wage growth. Other changes associated with wage growth include aging into one's 40s, becoming a full-time worker, and leaving a service occupation.
- Because our wage growth analysis is restricted to individuals who worked in both January 2001 and January 2003, there is less variation in the work experiences of individuals included in these analyses than in the wage status analyses that include individuals who are no longer working. As such, some factors correlated with changes in wage status, such as experience and changing jobs, are not significantly correlated with wage growth.

Low-Wage Workers' Progress toward Self-Sufficiency

The analysis in this section is limited to low-wage workers in low-income families, those who are most likely to receive government benefits. Here we examine families' total income and earnings, as well as their receipt of government benefits and work supports. We also examine their level of self-sufficiency using a "self-sufficiency index," defined as the ratio of family earnings to family needs, with family need determined by the federal poverty threshold.

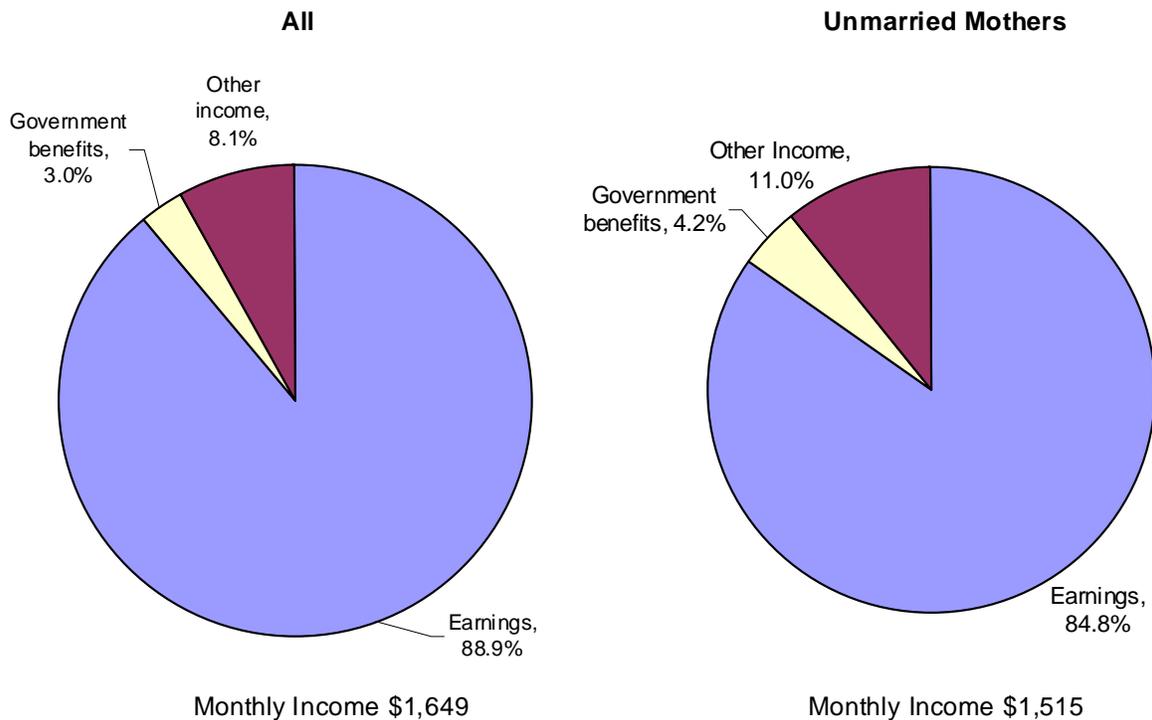
How much of low-wage workers' family income comes from earnings versus government benefits?

- Among low-wage workers in low-income families, the vast majority of family income is from earnings, and only small amounts are from other income, such as child support and interest income, or government benefits, such as Temporary Assistance for Needy Families (TANF) and Supplemental Security Income (SSI). Among low-wage workers in low-income families in January 2001, earnings accounted for 88.9 percent of income, while other income and government benefits accounted for 8.1 and 3.0 percent, respectively (exhibit ES-11). Even when the value of food stamps and the EITC is added to income to create an "enhanced income" measure, earnings still make up over 80 percent of income.
- Low-wage working unmarried mothers who were in low-income families in January 2001 have somewhat lower incomes and earnings than all low-wage workers in low-income families. But, even among this disadvantaged population, earnings make up 84.8 percent of income and 74.6 percent of enhanced income.

Have family income levels and the composition of income of low-wage workers in low-income families changed over time?

- Low-wage workers in low-income families experienced an increase in family income and earnings between January 2001 and January 2003. Consistent with the dominance of earnings in the composition of income, earnings are the major source of these income increases. The earnings of these families increased despite a slight decline in the average hourly wage rate between 2001 and 2003.

Exhibit ES-11: Low-Wage Workers' Family Incomes in January 2001



Source: Authors' tabulations of the 2001 SIPP panel.

Note: Sample includes low-wage workers in low-income families in January 2001 who are also observed in January 2003.

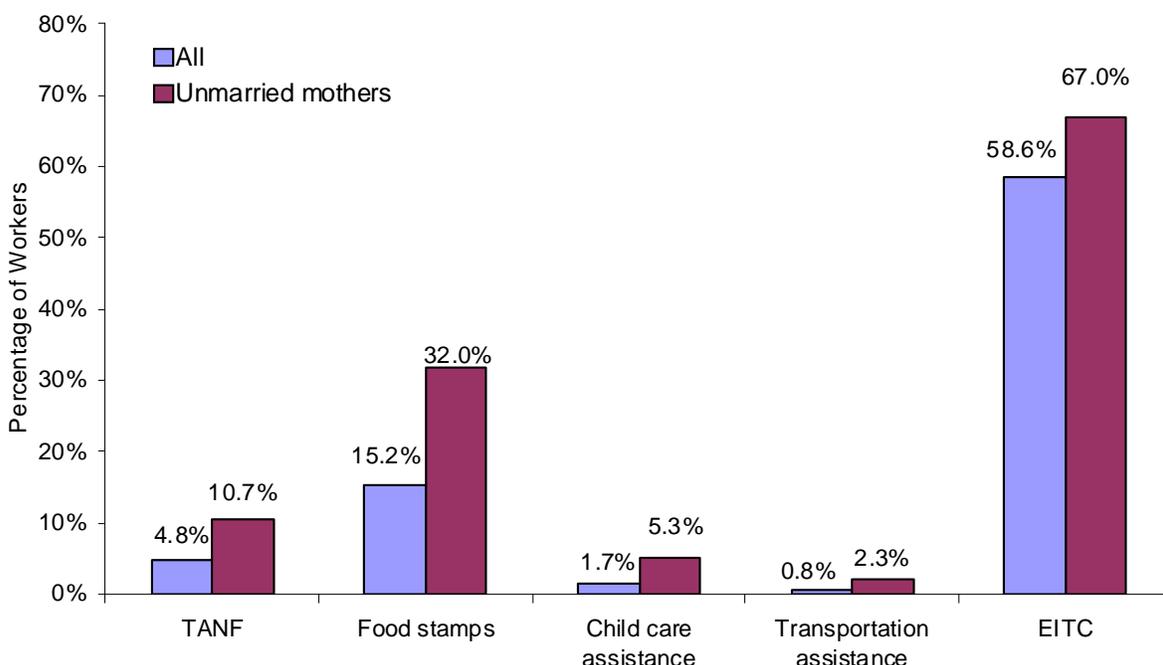
How many low-wage workers in low-income families receive government benefits or work supports?

- The vast majority of low-wage workers in low-income families does not receive government benefits or work supports (exhibit ES-12).⁵

⁵ The reported rates of receipt presented in exhibit ES-12 are likely lower than the true rates because SIPP respondents have been shown to underreport receipt of government benefits. Research on food stamp participation,

- In January 2001, less than 5 percent of low-income low-wage worker families received TANF. Low-wage working unmarried mothers in low-income families are more likely to receive TANF, although TANF recipients are still in the minority—only 10.7 percent received TANF.
- Families are more likely to receive food stamp benefits than TANF benefits.⁶ Fifteen percent of low-wage workers in low-income families received food stamp benefits in

**Exhibit ES-12: Receipt of Government Benefits and Work Supports
Low-Wage Workers in Low-Income Families in January 2001**



Source: Authors' tabulations of the 2001 SIPP panel.

Notes: The percentages reported in this exhibit are likely lower than the true percentages because SIPP respondents have been shown to underreport receipt of government benefits. The EITC value captures the percentage eligible to collect the EITC and is calculated using the National Bureau of Economic Research (NBER) TaxSim model and 2001 annual income.

for example, has found that the SIPP underreports food stamp receipt by 7 percent to 19 percent (Bitler, Currie, and Scholz 2002; Cody and Tuttle 2002). An analysis of SIPP child care data suggests that the underreporting of child care benefit receipt is substantially higher—over 40 percent (Besharov, Morrow, and Shi 2006). However, the benefit receipt rates would still be low (with the exception of food stamps) even if the true benefit receipt rates were twice as high as the rates reported below.

⁶ The 2008 Farm Bill renamed the Food Stamp Program (FSP) the Supplemental Nutrition Assistance Program (SNAP). Because our data are from before 2008, we refer to this program as the Food Stamp Program throughout this report.

January 2001, while 32.0 percent of low-wage unmarried mothers in low-income families received food stamps. The average monthly food stamp benefit among recipients was about \$230, lower than the average TANF benefit of roughly \$300.

- Child care and transportation work supports are received by just a tiny fraction of low-wage low-income workers.⁷ Among all low-wage workers in low-income families in January 2001, only 1.7 percent were in families that received child care assistance, and only 0.8 percent were in families that received transportation assistance. Receipt was also low among low-wage unmarried mothers in low-income families—5.3 percent and 2.3 percent, respectively.
- The majority of low-wage low-income workers were eligible to receive the EITC in 2001, with somewhat higher rates of eligibility among unmarried mothers. While 58.6 percent of all low-wage workers in low-income families were eligible for the EITC, 67.0 percent of low-wage unmarried mothers in low-income families were eligible.⁸ The higher rate of EITC eligibility among unmarried mothers is likely because unmarried mothers are in families with children, while many low-income families do not include children.

Do self-sufficiency levels differ across low-wage workers by characteristics?

- Low-wage unmarried mothers in low-income families have lower levels of self-sufficiency than the broader population of all low-wage workers in low-income families. The average self-sufficiency level in January 2001 was 0.88 for low-wage unmarried mothers, but 1.1 for all low-wage workers.
- Numerous individual and family characteristics are associated with higher levels of self-sufficiency among low-wage workers in low-income families. These include being white,

⁷ Although the percentage of low-wage workers in low-income families who report receiving child care assistance in the SIPP is quite low, spending on child care subsidies is not. In 2001, about \$11.1 billion was spent on child care subsidies through TANF, Social Service Block Grant (SSBG), and Child Care and Development Fund (CCDF) related programs (including federal and required state matching funds). As mentioned above, research suggests that the SIPP underreports the receipt of child care subsidies by more than 40 percent (Besharov, Morrow, and Shi 2006).

⁸ Families with multiple children can have incomes below 200 percent of the poverty threshold and be ineligible to receive the EITC. In 2001, for example, families with one adult and three children that had incomes above 190 percent of the poverty threshold were ineligible to receive the EITC. The same was true for families with two adults and two children. Also, some low-income families in our sample were ineligible for the EITC in 2001 because they experienced increases in income and earnings over calendar year 2001. Low-wage workers in low-income families are defined based on their wage rate and income in January 2001. EITC eligibility, however, is calculated based on families' calendar year 2001 income and earnings.

having higher education levels, living in a married-couple family, having more adults in the family, having fewer children in the family, having no one in the family with a health-related work limitation, and living in a metropolitan area.

Low-Wage Workers' Work Supports and Self-Sufficiency

Does self-sufficiency differ by receipt of work supports?

- Among low-wage workers in low-income families in January 2001, self-sufficiency was lower for persons receiving child care or transportation assistance than for persons not receiving these work supports. The self-sufficiency index (the ratio of family earnings to family needs) was 0.88 for those receiving a work support, while it was 1.11 for those not receiving a work support. This pattern arises because those who are most needy are more likely to be eligible for and take-up government supports. More sophisticated statistical models are needed to sort out the actual impact of work supports on self-sufficiency for those who are receiving them.
- The self-sufficiency index is similar for unmarried mothers in low-income families receiving and not receiving work supports—0.87 and 0.90, respectively.

Does use of work supports improve low-wage workers' self-sufficiency?

In this section, multivariate statistical models are used to examine whether work supports improve low-wage workers' self-sufficiency. We estimate two types of models that are designed to address the problems inherent in simple comparisons.⁹

- We find no evidence that the receipt of child care assistance increases self-sufficiency among all low-wage workers in low-income families. However, among low-wage unmarried mothers in low-income families, we find evidence that receipt of child care assistance increases self-sufficiency. Our results suggest that child care receipt is associated with an increase in self-sufficiency of 3.6 percent, or \$625 a year for a single-mother family living at the federal poverty threshold. Based on our estimation approach, these values are likely lower-bound estimates of the true effect of child care receipt on self-sufficiency.¹⁰

⁹ We estimate individual-level fixed effects models and instrumental variable (IV) models. These models and their limitations are discussed in more detail in section II of the report.

¹⁰ This result is from our individual-level fixed effects model.

- We find no evidence that transportation assistance increases families' self-sufficiency. Because of methodological challenges and limitations in our analysis, this is still an open question.
- We find no evidence that the EITC increases families' self-sufficiency. This finding may be because the data for this analysis are limited to the early 2000s, when there were only modest changes to the EITC. It is possible that analyses based on data from the 1990s (when large EITC expansions occurred) through the mid-2000s would find that the EITC increases self-sufficiency.

Taken together, the results of this study provide evidence that low-wage workers can progress in terms of wages and the self-sufficiency of their families. However, while some families progress, many families do not. Progress tends to be more limited for low-wage workers who are single mothers and less-educated black men, as well as those in low-income families. Our analysis of movement from a low-wage to a higher-wage status suggests that workers who are most likely to progress are those who spend the most time working. The importance of sustained employment for advancement is of particular concern as unemployment and joblessness in 2009 rise to levels not seen in decades. Importantly, we find some evidence that government-provided work supports, in particular child care assistance, improve the self-sufficiency of low-wage unmarried mothers in low-income families. Given the methodological challenges, it is encouraging that our analysis provides some evidence that work supports can improve the well-being of low-income families. Currently, very few low-wage workers in low-income families receive government-provided work supports, and increasing the receipt of supports could improve the lives of these families.

I. INTRODUCTION

People think of low-wage jobs in starkly different ways. For some, low-wage work connotes an image of unstable, “dead end” jobs filled by parents struggling to support their families while earning below-subsistence-level pay. In contrast, others view low-wage jobs as entry points to the labor market for new workers, an important first step toward better jobs and self-sufficiency. Such characterizations, however, obscure a far more complex reality facing low-wage workers. Low-wage workers include teenagers working summers as well as single mothers supporting a family; new entrants out of high school as well as middle-aged married men with families. Understanding the complexity of the low-wage labor market and the diversity of low-wage jobs and the workers that fill them is important to policymakers as they seek to find ways to help low-wage workers remain stably employed, attain higher wages, and become independent from public assistance programs.

A considerable body of research on low-wage workers has emerged in recent years. Although there is no single, standard definition of the term “low-wage worker,” various approaches produce qualitatively similar findings, about \$10 an hour in current dollars. Most studies establish a “low-wage” line, analogous to the federal poverty threshold. Consider a few representative examples. Acs and Nichols (2007) set their low-wage line at 150 percent of the minimum wage. When the minimum wage increases are fully phased in (in July 2009) the implied low-wage line will be just under \$11 an hour. Schochet and Rangarajan (2004) set the low-wage line by computing the hourly wage required for a full-time, full-year worker (2,080 hours in a year) to earn enough money to keep a family of four out of poverty. Today their low-wage line would be slightly over \$10 an hour. The Congressional Budget Office (CBO, 2006) sets its low-wage line using a relative rather than an absolute standard. CBO defines low wages as those that fall below the 20th percentile in the wage distribution. In 2005, the CBO approach resulted in a low-wage line of about \$9.00 an hour, or about \$10 today. This approach, however, does not allow the size of the low-wage workforce to vary over time; rather, it deems that 20 percent of the workforce is always low wage.

In addition to how the low-wage threshold is set, other differences across studies can affect findings about the low-wage workforce. For example, there are different views on who should be counted as a worker—anyone employed at a specific point in time? Those who work a minimum number of hours in the average week? Those who work a minimum number of hours during the course of a year? Studies also vary in the specific populations considered—for example, include workers of all ages or exclude students or retirees? And of course, different studies draw on different datasets.

Despite these potential differences, the size and composition of the low-wage work force is relatively similar across studies. By definition, the CBO (2006) study reports that 20 percent of workers are low wage. Acs and Nichols (2007) find that 23 percent of all workers are low wage, and Schochet and Rangarajan (2004) find that 28 percent of workers fit their low-wage definition. Both the Acs and Nichols and Schochet and Rangarajan studies find that more than seven in ten low-wage workers work full time, the majority are over age 30, less than one in five lack high school degrees, about seven in ten are white, non-Hispanic, and about one in seven are black, non-Hispanic.¹

Like other workers, low-wage workers experience wage growth as they gain experience. Schochet and Rangarajan (2004) find that the wages of low-wage workers grow by 8 percent a year, on average. Gladden and Taber (2000) assess wage growth among less-educated workers (who are disproportionately low wage) and report that wages of less-skilled workers rise from 4 to 6 percent for every additional year of experience they gain. French, Mazumder, and Taber (2006) reach a similar conclusion: they find that wage growth averaged about 4 percent per year from 1984 through 1995 regardless of education level. Despite this growth, broader research on economic mobility finds that those near the bottom of the income distribution (bottom quintile) seldom move up to become middle-income families or beyond (e.g., Acs and Zimmerman 2008).

These papers also consider the factors associated with wage growth and the transition to a better job (i.e., a job with better pay and benefits). Several consistent findings emerge. Low-wage workers that change jobs enjoy more wage growth and are more likely to escape low-wage status and bad jobs than those who remain with their current employer, although the differences between job stayers and job changers is fairly modest. In addition, those with more education are more likely to transition into higher-paying jobs.

¹ “Other” race/ethnicities such as Asians are included in the white, non-Hispanic category.

Beyond questions of wage growth and job advancement, policymakers are ultimately concerned with whether and how low-wage workers can become self-sufficient. These discussions, however, are hampered by the lack of any clear, commonly accepted definitions of self-sufficiency. One could consider a family self-sufficient if it receives no income or in-kind assistance from government entities (except for payments from programs into which family members have contributed, such as Social Security and Medicare). Of course, some families may have extremely low incomes yet choose not to participate in government programs; they may be “independent” of public support, but their resources may be insufficient to meet their needs.

It is important to note, however, that most low-wage workers live in families with incomes over 200 percent of the federal poverty threshold (about \$42,000 for a family of four in 2007) (Acs and Nichols 2007; CBO 2006; Schochet and Rangarajan 2004). Indeed, many low-wage workers are not the sole source of support for their families, and policymakers and analysts need to be mindful of this when considering policies aimed at low-wage workers as opposed to low-income families.

Not much research speaks directly to the questions of progress toward self-sufficiency by low-wage workers in low-income families. Research on women who had nonmarital births (Sandfort and Hill 1996) and former welfare recipients (Acs and Loprest 2004) shows that progress is, at best, slow for these groups.

Both the government and the private sector can theoretically play important roles in helping low-wage workers stay employed, earn higher pay, and progress toward self-sufficiency. Research on the effects of work supports generally focuses on employment, earnings, and income. By and large, programs that increase the financial incentives to work are associated with higher employment levels, more hours worked, and higher earnings and income as a result of higher levels of work effort (Blank, Card, and Robins 1999).

Work supports represent a broad range of policies and programs intended to help low-wage workers make ends meet and provide greater economic stability. In this study, we focus on three work supports: child care assistance, transportation assistance, and the earned income tax credit (EITC). Assessing the impact of work supports on self-sufficiency is challenging because people who are most needy are most likely to be eligible for and take up government supports. Individuals voluntarily access work supports, so low-wage workers who are on the “fast track” to self-sufficiency may eschew work supports because they do not need them, while those who are having the most trouble moving up the economic ladder may be more likely to access them. As

such, secondary data analysis may show that work supports are associated with slower wage growth and less progress toward self-sufficiency.

Social science experiments can also be used to examine the impact of work supports on families' well-being. A number of programs focused on helping low-wage workers, particularly individuals transitioning off welfare, access the range of publicly funded income supports available to them (e.g., the EITC and child care assistance) have been rigorously evaluated. These programs have generally produced limited effects on job retention and advancement, although there are important exceptions. A study of the New Hope program in Milwaukee, for example, has shown that delivering a package of supports that includes health insurance, child care subsidies, and a wage supplement can increase work effort, decrease poverty, and increase the well-being of young children (Miller et al. 2008).

This study uses data from the 2001 SIPP panel to document and analyze the dynamics of the low-wage labor market and the role of work supports in helping low-wage workers in the early 2000s. The next section describes the data, key definitions, study population, and analytic approach we use in the analyses. The subsequent four sections discuss the key areas addressed in this study:

- low-wage workers' demographic and job characteristics;
- low-wage workers' wage progression;
- low-wage workers' progress toward self-sufficiency; and
- the role of work supports in low-wage workers' progress toward self-sufficiency.

The report concludes with a summary and discussion of our major findings.

II. ANALYTIC APPROACH

Data

The primary dataset used for this study is the 2001 panel of the Survey of Income and Program Participation (SIPP), which contains a nationally representative (noninstitutional) sample of 35,100 households.² SIPP respondents are interviewed every four months about the previous four months, a period referred to as a “wave.” SIPP monthly data are collected as part of the core questionnaire, which is administered in each wave, and topical modules, which collect supplemental information on a variety of topics. The 2001 SIPP is a 36-month panel (nine waves), with the first interview occurring in February 2001.³ These monthly data are a key strength of the SIPP for this study. Also, the SIPP’s large sample and oversample of low-income households results in a sample that is large enough to examine subpopulations, such as low-wage workers in low-income families (below 200 percent of the poverty threshold), unmarried mothers, and less-educated black men.

The SIPP has a host of demographic and family characteristics including marital status, educational attainment, age, race and ethnicity, family structure and size, number and age of children, and state of residence.⁴ In addition, the survey collects detailed information on income, employment and wages, job characteristics, and health insurance.

The SIPP also gathers extensive information on the receipt of government benefits and work supports, including Temporary Assistance for Needy Families (TANF), food stamps,⁵ child care

² The 2001 SIPP panel is the latest full panel that was available when we began our analysis. The U.S. Census Bureau has begun releasing data from the 2004 SIPP panel, but only a limited number of months of data were available by mid-2008.

³ The SIPP response rates vary by wave and generally decrease as the panel progresses (i.e., there is sample attrition). The 2001 SIPP had an 87 percent response rate in the initial wave and a 68 percent response rate across the full panel. As such, there is some concern that the data become less representative of the population over time. We weight the data using SIPP weights to account for initial non-response, attrition, and the complex sample design.

⁴ Not all 50 states are individually identified in the 2001 SIPP panel (for confidentiality reasons). North Dakota, South Dakota, and Wyoming are grouped together, as are Maine and Vermont. In analyses that use state-level data, individuals in these five states are not included in the analysis.

⁵ The 2008 Farm Bill renamed the Food Stamp Program the Supplemental Nutrition Assistance Program (SNAP). Because our data are from before 2008, we refer to this program as the Food Stamp Program throughout this report.

subsidies, publicly subsidized housing, transportation subsidies, and Medicaid/SCHIP; these data are collected monthly in the core SIPP questionnaire. There is a concern that receipt of government benefits is underreported in the SIPP, as in other survey data. Research on food stamp participation, for example, has found that the SIPP underreports food stamp receipt by 7 percent to 19 percent, which is somewhat lower than the underreporting in the Current Population Survey (Bitler, Currie, and Scholz 2002; Cody and Tuttle 2002). An analysis of SIPP child care data suggests that the underreporting of child care benefit receipt is substantially higher—over 40 percent (Besharov, Morrow, and Shi 2006). Among other reasons, underreporting can occur when recipients do not understand the source of the benefit. Research has found, for example, that when respondents answer questions about government-provided child care assistance, they may not know the source of the financial assistance and provide incorrect responses (Adams, Giannarelli, Mulligan, and O’Connell 2006).⁶ Thus, the rates of government benefit receipt among our sample may be lower than the true rates of receipt.

Information on the receipt of the EITC is not available monthly, but only in the wave 4 and wave 7 topical modules. The EITC is generally received when individuals file their taxes (i.e., only once a year), so the infrequency of this information in the SIPP is not a significant drawback. However, the SIPP topical module does not do a good job of capturing EITC receipt.⁷ Consequently, the EITC amount that families are eligible to receive, based on each family’s income and composition, is calculated for this study using the National Bureau of Economic Research’s Taxsim model. Because we do not have accurate information on EITC filings, we assume that all families receive the full EITC for which they are eligible. While the analysis would ideally incorporate benefits actually received, estimates suggest that EITC participation is quite high—86.5 percent among families with qualifying children (Holtzblatt and McCubbin 2004).

We supplement the SIPP data with state-level economic data on the unemployment rate, per capita income, and employment-population ratio, as well as quarterly gross domestic product (GDP). These data are from the U.S. Census Bureau and the U.S. Department of Labor. Our analysis of government work supports also incorporates information on state and federal EITC

⁶ One option is to adjust the SIPP data to account for the underreporting, but this requires understanding the root cause(s) of the underreporting. Further, choosing the wrong adjustment strategy could lead to greater bias.

⁷ In the 1996 SIPP panel, for example, upwards of 50 percent of respondents either refused, didn’t know, or did not answer the question asking about whether the EITC was claimed and even fewer respondents knew the value of their credit (Mikelson and Lerman 2004).

amounts (from the Internal Revenue Service and Center on Budget and Policy Priorities) and state-level child care spending (from the Center for Law and Social Policy).

Key Definitions

Low-Wage Workers: As noted above, there is no single definition of what constitutes a low-wage rate, but many different approaches produce quite consistent results. For this study, we follow Schochet and Rangarajan's (2004) approach and set the low-wage threshold at the hourly wage required for a full-time, full-year worker (i.e., 2,080 hours) to earn enough to keep a family of four out of poverty. Under this definition, a worker in 2001 (the first year of the 2001 SIPP) is considered a low-wage worker if his or her hourly wage rate is below \$8.63. This is equivalent to \$10.50 in 2008.

Wage Progression: A focus of the analysis is measuring workers' wage growth and progression in the labor market. We take two approaches to measure wage progression. The first approach examines workers' transitions from low-wage jobs to higher-wage jobs. Such transitions can occur through wage growth in a given job, promotions to better-paying jobs, and job changes. A worker moves from being a low-wage worker to being a higher-wage worker when his or her wages exceed the low-wage threshold. For certain analyses, we divide workers in higher-wage jobs (i.e., non-low-wage jobs) into moderate-wage and high-wage workers. Consistent with Schochet and Rangarajan (2004), we define moderate-wage workers as those whose wages are between one and two times the low-wage threshold and high-wage workers as those whose wages are at least two times the low-wage threshold. Grouping wage levels allows us to make comparisons between the characteristics and labor market experiences of the average low-wage worker and the average higher-wage worker.

Our first measure of wage progression does not register improvements for workers who have experienced wage increases but are still below the low-wage threshold. Under this definition, for example, a worker whose wage increases from \$6 to \$8 would not be identified as progressing in the labor market. To address this, we also examine a second measure of progression: percentage increase in the wage rate.

Self-Sufficiency: In addition to examining wage progression, this study examines low-wage workers' level of self-sufficiency. We assess self-sufficiency in two ways: (1) we examine the composition of low-wage workers' family incomes, assessing the relative roles of earnings and government benefits. The government benefits considered include benefits received from the EITC, child care assistance, transportation assistance, TANF, and Food Stamp programs; and (2) we examine the ratio of family earned income to family needs (as measured by the federal

poverty threshold)—low-wage workers in families with higher earnings-to-needs ratios are more self-sufficient in that their earned income covers a greater share of their needs. This measure of self-sufficiency captures how well off low-wage workers' families are in the absence of any government support. A benefit of this second measure is that it uses family need, rather than receipt of government assistance, as the benchmark for self-sufficiency.

Work Supports: Our analysis of how work supports help low-wage workers progress toward self-sufficiency focuses on government-provided work supports. Specifically, we examine three government-provided work supports: child care subsidies, transportation subsidies, and the EITC. Child care and transportation subsidies are categorized as work supports, as these benefits are targeted directly at low-wage workers' specific employment-related needs. The EITC more generally supplements low-wage workers' earnings, but it is considered a work support because the benefits are directly linked to workers' earnings and individuals without earnings cannot receive the credit.

Study Population

The primary study population is all low-wage workers between the ages of 16 and 64 whose main activity is work; students are excluded. In addition to the full low-wage worker population, we include analyses of several key subgroups of low-wage workers that are of particular policy interest: unmarried mothers,⁸ less-educated (high school degree or less) black men, low-wage workers in low-income families (defined as less than 200 percent of the poverty threshold), and unmarried mothers in low-income families.⁹ Unmarried mothers, especially those in low-income families, are included because of their potential risk for welfare receipt and because of policy interest in supporting movement off welfare into work. Research shows that less-educated black men have disproportionately high rates of unemployment, and there is ongoing policy interest in how to improve their labor market experience (Edelman, Holzer, and Offner 2006). The subgroup of low-wage workers in low-income families is important because increases in these workers' wages can have a relatively large impact on family well-being and because these families are most likely eligible for government supports. Also, a low-wage worker in a high-income family may be a secondary earner with less attachment to the labor force and with substantially different labor market experiences than primary earners.

⁸ We use the term mother to mean women residing with their non-adult children.

⁹ We consider a low-wage worker's social family—a family concept that is a bit broader than a nuclear family. A social family comprises the household head and all individuals in the household related to that person as well as the household head's unmarried partner (if present) and all persons in the household related to that partner.

Our focal sample comprises workers in January 2001.¹⁰ An individual is considered a worker if he or she had any earnings in this month. The sample of low-wage workers in January 2001 is used in our analysis of the wage progression of low-wage workers. For our analysis of self-sufficiency, we examine the subset of low-wage workers in January 2001 who are also in low-income families. Defining the sample as of January 2001 allows for the longest follow-up period in our data to observe these workers' progress toward self-sufficiency: 32 to 35 months.

Descriptive Analyses

There are three broad components to our study: (1) a profile of low-wage workers, (2) an assessment of low-wage workers' wage progression, and (3) an assessment of low-wage workers' progress toward self-sufficiency. For each component, we provide basic descriptive information drawn from our SIPP data. All tabulations are weighted using individual weights.

Our profile of low-wage workers is entirely descriptive and begins by assessing what share of all workers is low wage in January 2001. We then focus on key population subgroups as described above: unmarried mothers, less-educated black men, low-wage workers in low-income families, and unmarried mothers in low-income families. After establishing the size of the low-wage workforce, we document the personal, family, and job characteristics of low-wage workers and compare these characteristics with those of higher-wage workers. We compare results for our key subgroups with all low-wage workers. We also compare our findings for low-wage workers in January 2001 with low-wage workers in January 2003,¹¹ as well as to findings for earlier cohorts of low-wage workers from Schochet and Rangarajan (2004).¹²

Our descriptive analysis of wage progression focuses on wage changes between January 2001 and January 2003, providing statistics on all low-wage workers and the four key subgroups of low-wage workers: unmarried mothers, less-educated black men, those in low-income families, and unmarried mothers in low-income families. Initially, we assess the status in January 2003 of individuals who were low-wage workers in January 2001. They may be jobless, remain low-wage workers, have moved up to moderate-wage status, or moved up to high-wage status. We then compare the personal, family, and job characteristics of those workers that moved up

¹⁰ The wave 1 interviews took place between February and May 2001 and gathered information about the prior four calendar months, so January 2001 is the first month for which data are available for the full sample.

¹¹ The 2001 SIPP provides data through calendar year 2003, but we compare January 2001 to January 2003 (rather than a later month) so our calculated differences over time are not influenced by seasonal effects.

¹² As we use the same definition as Schochet and Rangarajan (2004) and use a later panel of the SIPP, the studies are readily comparable.

with those that either remained low wage or became jobless. Lastly, we assess the amount of time between January 2001 and January 2003 that workers spent in each of the four wage/job status categories.

There are two main components to our descriptive analyses examining low-wage workers' progress toward self-sufficiency. As discussed above, these analyses focus on the subpopulation of low-wage workers in low-income families. First, we examine the composition of total monthly family income, reporting the amount of income from earnings compared with government benefits and other sources of income. We also examine changes in the composition of income over time. In addition to broadly looking at government benefit receipt, we present the share of families receiving assistance through specific government programs: TANF, food stamps, child care assistance, transportation assistance, and the EITC. Second, we assess the level and changes in low-wage workers' family self-sufficiency index (i.e., earnings-to-needs ratio). We present the self-sufficiency index over time by work support receipt and income level.

Multivariate Analyses

To better understand the factors that contribute to (or inhibit) wage progression and progress toward self-sufficiency, we estimate multivariate regression models. These models allow us to examine the relationships between low-wage workers' characteristics and their economic progress while holding other factors constant. First, we discuss our approach to assessing wage progression; then we describe our models for self-sufficiency.

Wage Progression

Consistent with the descriptive analysis presented above, we examine wage changes between January 2001 and January 2003. The multivariate results are not necessarily causal; rather, they show whether individuals with a certain individual or job characteristic are more or less likely to experience wage progression over our follow-up period, holding other characteristics constant. All regressions are estimated using weights to make the sample representative of low-wage workers in the United States.

In our initial set of models, we focus on "wage progression" and examine whether a low-wage worker in January 2001 is in a higher wage status by January 2003. The outcome variable takes on a value of 0 if a low-wage worker from 2001 is either still a low-wage worker or not working at all in 2003; it takes on a value of 1 if the worker is a moderate- or high-wage (collectively referred to as a higher-wage worker) in 2003. Because the outcome variable can

only take on values of 0 or 1, the models are estimated using a logit procedure. We estimate a total of four models.

The first model captures the relationship between a worker's personal, family, and job characteristics in January 2001 and his or her wage status two years later. The personal and family characteristics we consider include sex, age, race and ethnicity, number of children in family, whether there is a child under age 6 in the family, number of adults in family, educational attainment, health-related work limitation status, region and metropolitan status of residence, and marital status. Job characteristics include usual hours worked, firm size, occupation, and industry. We also consider how the labor market influences progress using measures of state per capita income, unemployment rate, and employment-to-population ratio.

Of course, changes that occur over the two-year period may also influence future wage status. To assess if *changes* in workers' circumstances influence wage progress, we estimate three additional models. In model 2, in addition to the above factors, we add a variable measuring the additional work experience a low-wage worker acquired over the two-year period. Specifically, the variable measures the percentage of months a low-wage worker worked between January 2001 and January 2003. In model 3, we add variables indicating if the worker was in a different job at the end of the period than at the beginning and if that job change involved a change in industry and occupation. Lastly, in model 4 we estimate whether changes in the factors enumerated above along with changes in work experience are associated with a worker's progress. Because this model examines changes over time, it cannot provide estimated coefficients on time-invariant characteristics (like sex, race, and ethnicity).

The models described above measure changes in status, but they may miss important components of wage growth for low-wage workers. For example, a low-wage worker whose earnings grow from \$7.50 to \$8.50 an hour experiences wage growth of 13.3 percent over two years but is still a low-wage worker. To capture this, we estimate a second series of wage growth models in which the outcome variable is the change in wages experienced by a worker between January 2001 and January 2003. Because this outcome is not restricted in its value (i.e., it is continuous), the wage change models are estimated using ordinary least squares regression. The four estimated regression models for wage growth mirror those described above. An important distinction between these wage growth models and the wage progression models described earlier is that wage growth is only examined among persons employed in both January 2001 and January 2003. As a result, findings from the wage progression and wage growth models are not directly comparable.

Progress toward Self-Sufficiency

We also use multivariate models to better understand the characteristics associated with higher levels of self-sufficiency for low-wage workers in low-income families, as well as how work supports affect self-sufficiency. As with the descriptive analyses on self-sufficiency, here we restrict our sample to low-wage workers in low-income families. Our measure of self-sufficiency is the low-wage worker's family's earnings-to-needs ratio.

We first analyze the relationship between low-wage workers' personal and family job characteristics with their levels of self-sufficiency. The specific factors included in this model are age, race and ethnicity, educational attainment, health-related work limitation status, metropolitan residence, family structure, the number of adults in the family, the number of children in the family, and whether there is a child under the age of 6 present, along with GDP and state-level per capita income, unemployment, and employment-to-population ratio. The model is estimated using ordinary least squares linear regression and uses population weights.

Since we are particularly interested in understanding how government-provided work supports influence low-wage workers' level of self-sufficiency, we next estimate the relationship between the level of self-sufficiency and receipt of work supports. This estimation is complicated by the fact that people who do and do not receive work supports can differ systematically. People who are most needy are most likely to be eligible for and take up government supports, so simple comparisons of outcomes for those who use work supports and those who do not use work supports would likely find better outcomes for those who do not use these supports. This problem is sometimes called selection bias. People who do and do not access work supports differ in unobservable ways (e.g., taste for social programs and distaste for work), so simply controlling for observed factors in a multivariate framework will not necessarily eliminate this problem. Another related potential problem (referred to as endogeneity) is the possibility that individuals whose economic circumstances are improving may lose work supports such as child care and/or transportation assistance because of rising earnings. If this occurs, those who stop receiving these work supports would have increasing self-sufficiency, and the model results could suggest receipt leads to (or is associated with) lower levels of self-sufficiency.

Our multivariate analysis considers two different modeling approaches designed to provide more reliable estimates of the effect of work supports on self-sufficiency by addressing selection bias and endogeneity. The first approach is to estimate individual-level fixed-effects models to eliminate time-invariant unobserved differences between low-wage workers. This model employs changes in use of work supports and changes in self-sufficiency to estimate the

relationship between work supports and self-sufficiency. This approach can address selection bias described above, but it does not eliminate the endogeneity problem. Our second approach uses instrumental variables methods to address differences in those who do and do not use work supports. This approach attempts to correct for selection bias and endogeneity. We next present these basic models, followed by a discussion of the two proposed approaches.

Basic Model Structure: The focal sample is low-wage workers in low-income families in January 2001. The model includes these individuals in each month they are observed in the SIPP. Thus, the unit of analysis is a person-month. The dependent variable, the ratio of earnings-to-needs or self-sufficiency index, is continuous. The basic model structure can be written:

$$Y_{ist} = f(WS_{ist}, EITC_{st}, X_{ist}, S_{st}, \eta_s, \tau_t)$$

In this specification, Y_{ist} is the self-sufficiency index of individual i in state s in month t . WS_{ist} is a vector of work supports that includes two indicator variables that identify whether person i living in state s received a child care subsidy or a transportation subsidy in month t , $EITC_{st}$ is the maximum value of the federal plus state EITC families with two children are eligible to receive in state s in month t ,¹³ X_{ist} measures individual and family characteristics (e.g., age, race/ethnicity, educational attainment, household structure, number and age of children), S_{st} represents the characteristics of individual i 's state of residence in month t (i.e., unemployment rate, per capita income, and employment-population ratio) and quarterly GDP, and η_s and τ_t represent the state and year fixed effects, respectively.¹⁴

Individual-Level Fixed-Effects Model: Our first approach to reduce potential biases in the basic model is an individual-level fixed-effects model to estimate the effect of work supports on self-sufficiency. Specifically, we estimate models that include a separate indicator variable for each individual in the sample (μ_i):

$$Y_{ist} = f(WS_{ist}, EITC_{st}, X_{ist}, S_{st}, \eta_s, \tau_t, \mu_i)$$

¹³ We considered including the maximum values of the EITC for a family with no children and a family with one child, but we found that the EITC values by family size are too highly correlated to be included in a single model (correlation coefficients are between 0.92 and 0.99). In preliminary specifications, we also examined models where the maximum EITC amounts were interacted with number of children in the family (no children, one child, and two or more children), but the estimated coefficients were imprecisely estimated.

¹⁴ The standard errors are adjusted for clustering by state.

The individual-level fixed effects capture the time-invariant unobserved differences between individuals that might make some low-wage workers both more likely to participate in work supports and less likely to move toward self-sufficiency. These unobserved differences could include familiarity with government support programs coupled with hard-to-observe barriers to work like undiagnosed physical, mental, and emotional problems. As such, the fixed-effects models eliminate this potential source of bias from the basic model. However, time-changing biases like the situation that arises when individuals who are doing better economically lose benefits are not addressed in this approach. In this case, the individual-level fixed-effects model would produce lower-bound estimates of the true effect of work supports on self-sufficiency.

Instrumental Variables Model: Our second approach to reduce or eliminate potential biases in the basic model measures the effect of work supports on self-sufficiency using an instrumental variables (IV) model. Our IV model consists of two equations: one equation relating self-sufficiency to work support receipt (e.g., child care assistance received) and a second equation describing work support receipt as a function of state-level program variables. Although our basic model considers three work supports (child care assistance, transportation assistance, and the EITC), our IV model only uses an instrumental variable for child care assistance. We do this for two reasons. First, because we measure the EITC using the maximum potential benefit for a family with two children rather than actual receipt, the EITC variable is not endogenous—its value does not reflect a choice made by the worker. Second, as we show later in this report, transportation assistance is not a commonly used work support (received by less than 1 percent of our sample in January 2001), making it difficult to obtain a strong exogenous predictor of transportation receipt that can serve as an instrument.¹⁵

Estimation of the instrumental variables model requires a variable(s) (i.e., instrument) that influences the use of work supports but does not *directly* influence low-wage workers' level of self-sufficiency. It is important that the instrument varies across states and over time. The instrument we use for receipt of child care assistance is state-level spending on child care per low-income family.

Our two approaches—individual-level fixed-effects models controlling for unobservable differences and the IV models accounting for endogeneity in the receipt of work supports and self-sufficiency—help us better understand the role work supports play in helping families move toward self-sufficiency, but they have their limitations. The individual-level fixed-effects

¹⁵ The instrumental variable model excludes transportation assistance, but it does include the EITC variable.

models, for example, do not control for the possibility that individuals whose economic circumstances are improving may lose work supports (i.e., endogeneity). Also, changes in the maximum EITC amounts were only modest over our study period (the largest EITC expansions occurred in the 1990s), which makes it more difficult to capture the effect of the EITC on families' self-sufficiency. Nevertheless, this analysis improves our ability to assess the extent to which work supports help low-wage workers move toward self-sufficiency and whether some work supports are more important than others in helping low-wage workers.

III. PROFILE OF LOW-WAGE WORKERS

What Share of Workers Is Low-Wage?

More than a quarter of all workers in 2001—26.9 percent or over 28 million people—were low-wage workers, earning less than \$8.63 an hour. This percentage of workers who were low wage is similar to estimates for earlier periods. A prior study using the same definitions used here found that 28 percent of workers in 1996 and 25 percent in 1999 were low wage (Schochet and Rangarajan 2004).¹⁶ Our most recent data show little change by 2003, when 24.4 percent of workers were low-wage.¹⁷

In addition to all low-wage workers, specific subgroups of low-wage workers may be of particular interest to policymakers because they are the beneficiaries of public safety net and work support programs or have traditionally had more difficulties in the labor market. These groups include unmarried mothers and black men with limited educations (at most a high school diploma or GED). Also, low-wage workers in low-income families (defined as those with income less than twice the poverty threshold) may warrant special focus because they not only earn low wages, but also have limited other sources of income to rely on. In contrast, low-wage workers in higher-income families may rely on other family members to be the primary contributors to family income.¹⁸

Each subgroup of low-wage workers accounts for only a minority of all low-wage workers. Exhibit III-1 shows the percentage of all low-wage workers in 2001 and 2003 in each group. In 2001, 10.8 percent of all low-wage workers were unmarried mothers and 3.6 percent were less-educated black men. Of all low-wage workers in January 2001, less than half (46.4 percent) lived in a low-income family. The number for 2003 is slightly smaller (44.0 percent). These numbers

¹⁶ Schochet and Rangarajan display only rounded statistics in their report.

¹⁷ The data in this section for 2001 and 2003 are based on separate samples of low-wage workers. Data for 2001 are based on low-wage workers in January 2001 while data for 2003 are based on low-wage workers in January 2003. Because the data for each year are drawn from the SIPP, individuals who were low-wage workers in both years appear in each year's sample.

¹⁸ These subgroups are not necessarily mutually exclusive. For example, a single mother may also be a low-wage worker in a low-income family.

suggest that policies aimed at all low-wage workers will include many low-wage workers who are not in low-income families. At the same time, narrowly targeted policies aimed at single mothers, for example, will exclude many other low-wage workers.

Exhibit III-1: Percentage of Low-Wage Workers in Population Subgroups

	Low-Wage Workers	
	January 2001 (%)	January 2003 (%)
Percentage of All Low-Wage Workers		
Unmarried mothers**	10.8	9.8
Less-educated black males	3.6	3.9
In low-income families***	46.4	44.0
Unmarried mothers in low-income families*	8.6	7.8
Sample Size	9,421	6,249

Source: Authors' tabulations of the 2001 SIPP panel.

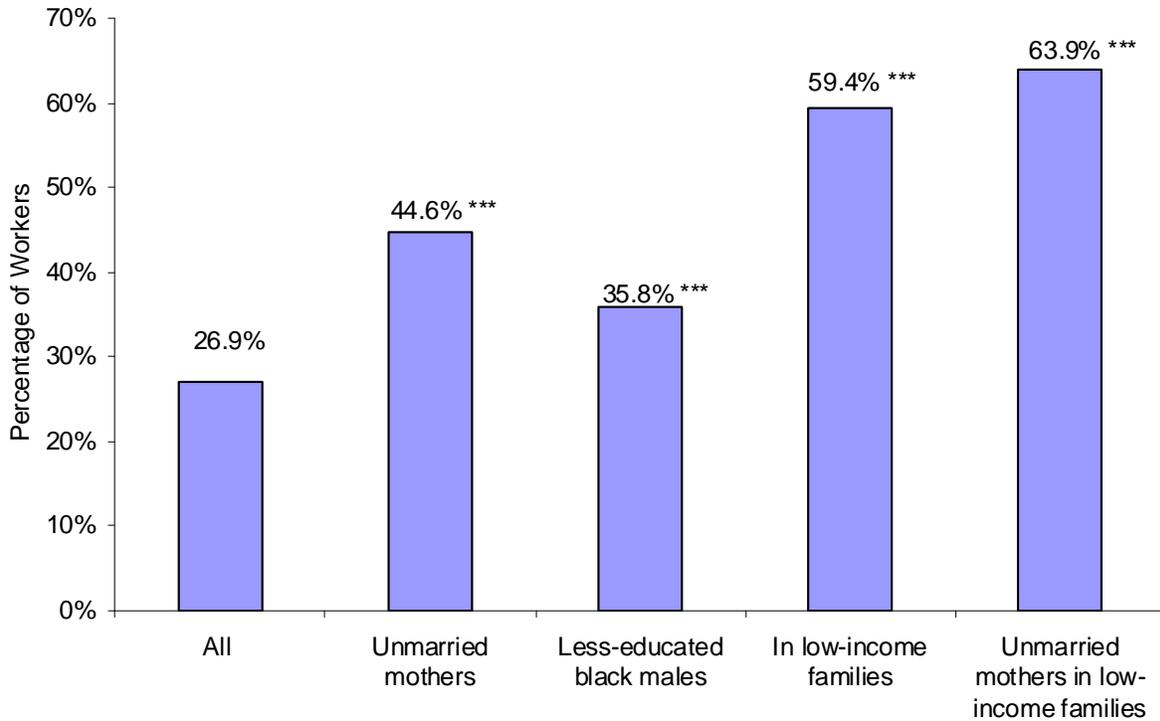
Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold.

The universe is all low-wage workers. Statistical significance is calculated over time for each subgroup.

* = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

Although a minority of all low-wage workers, members of these key subgroups are disproportionately likely to be low-wage workers (exhibit III-2). In 2001, 44.6 percent of all working unmarried mothers were low wage; among working less-educated black men, 35.8 percent were low wage. More than half of workers in low-income families and working unmarried mothers in low-income families were low-wage workers, 59.4 and 63.9 percent, respectively. So although a quarter of all workers are low wage, substantially higher shares of each of these subgroups of workers are low-wage.

Exhibit III-2: Percentage of Workers in Low-Wage Employment in January 2001, by Population Subgroup



Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Low-wage workers are those making less than \$8.63 in 2001 dollars. Low-income families are those with income less than two times the federal poverty threshold.

*** indicates a statistically significant difference (at the $p < 0.01$ level) between the low-wage worker subgroup and all other low-wage workers.

Demographic Characteristics of Low-Wage Workers

Low-wage workers are different in important ways from workers earning higher wages, both in individual and family characteristics. Exhibit III-3 compares individual characteristics across these groups for 2001 and 2003, and exhibit III-4 compares family characteristics across these groups. Because results are largely similar across these two years, we focus our discussion on the results for 2001, noting important differences for 2003 where appropriate. At the end of this discussion we compare our 2001 results with results for a 1996 cohort of low-wage workers from the previous study by Schochet and Rangarajan (2004).

**Exhibit III-3: Individual Characteristics of Low-Wage and Higher-Wage Workers
in January 2001 and January 2003**

	Percentage of Workers in 2001		Percentage of Workers in 2003	
	Low-wage workers	Higher-wage workers	Low-wage workers	Higher-wage workers
Gender ***,+**				
Male	40.1	56.6	41.6	43.9
Female	59.9	43.4	58.4	56.1
Age ***,+**				
Under 20	5.1	0.7	4.8	0.5
20 to 29	28.7	17.5	29.6	16.6
30 to 39	25.0	28.7	23.5	27.5
40 to 49	22.1	29.8	22.6	30.1
50 to 59	14.6	19.6	14.8	21.1
60 to 64	4.5	3.8	4.8	4.2
Race/Ethnicity ***,+**				
White, non-Hispanic	61.2	76.2	60.2	74.8
Black, non-Hispanic	14.6	9.9	15.2	9.7
Hispanic	20.0	9.2	20.2	10.8
Other	4.2	4.7	4.4	4.7
Educational Attainment ***,+**				
Less than HS	20.1	6.2	18.5	6.2
High school/GED	43.0	30.9	41.2	28.9
Some college	25.9	30.4	27.9	31.6
College or more	11.0	32.5	12.4	33.3
Has a Health-Related Work Limitation ***,+**				
Yes	8.9	4.3	5.8	2.7
No	91.1	95.7	94.2	97.3
Region of Residence ***,+**				
East	15.2	20.6	14.9	19.9
Central	21.6	25.3	21.3	24.7
Western and Pacific	21.2	21.7	21.3	22.6
Southern	41.9	32.5	42.5	32.7
Lives in Metropolitan Area ***,+**				
Yes	72.4	80.8	70.3	80.3
No	27.6	19.2	29.7	19.7
Marital Status ***,+**				
Married	48.5	64.0	49.6	63.2
Separated, divorced, widowed	18.0	16.0	15.9	16.6
Single, never married	33.6	20.0	34.5	20.2
Cohabiting ***				
	8.2	5.9	5.8	5.3
Sample Size	9,421	24,399	6,249	18,789

Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Those making more than \$8.63 in 2001 dollars are considered higher-wage workers. Statistical significance is calculated between low-wage worker and higher-wage worker subgroups, within each period. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$ for January 2001; + = $p < 0.1$, ++ = $p < 0.05$, +++ = $p < 0.01$ for January 2003. The differences between low-wage workers in 2001 and low-wage workers in 2003 are statistically significant at the $p < 0.01$ level for educational attainment, has health limitation, lives in metropolitan area, marital status, and cohabiting, and at the $p < 0.05$ level for gender. The differences between higher-wage workers in 2001 and higher-wage workers in 2003 are statistically significant at the $p < 0.01$ level for age, race/ethnicity, educational attainment, has health limitation, and cohabiting; at the $p < 0.05$ level for marital status; and at the $p < 0.1$ level for gender and lives in metropolitan area.

**Exhibit III-4: Family Characteristics of Low-Wage and Higher-Wage Workers
in January 2001 and January 2003**

	Percentage of Workers in 2001		Percentage of Workers in 2003	
	Low-wage workers	Higher-wage workers	Low-wage workers	Higher-wage workers
Family Structure ***, ***				
Single with children	10.7	5.8	10.8	6.0
Cohabiting with children	4.5	2.6	3.3	2.1
Married with children ^a	32.7	37.6	35.0	38.1
Married without children	26.1	30.5	27.0	29.6
Single without children	26.0	23.4	23.9	24.3
Family Size ***, ***				
1	15.8	15.9	14.9	16.9
2	26.8	29.7	24.6	27.8
3	21.7	20.9	21.6	19.9
4 or more	35.7	33.5	38.9	35.4
Number of Children in Family ***, ***				
0	52.1	54.0	50.9	53.9
1	20.5	19.5	21.1	19.4
2	16.0	17.6	17.1	17.5
3 or more	11.5	8.9	10.9	9.2
Age of Youngest Child in Family ***, ***				
no children	52.1	54.0	50.9	53.9
younger than 3	13.9	12.5	12.5	11.5
3 to 6	11.0	10.4	11.8	11.1
6 to 12	13.5	13.3	14.5	13.4
13 to 18	9.5	9.8	10.2	10.2
Other Employed Adult in Family				
Yes	55.4	55.9	55.7	54.5
No	44.6	44.1	44.3	45.5
In Public or Subsidized Housing ***, ***				
Yes	4.2	1.0	3.5	1.1
No	95.8	99.0	96.5	98.9
Family Income as a % of Poverty ***, ***				
100 percent or less	14.7	2.1	14.2	1.8
101 to 200 percent	31.7	9.7	29.8	9.8
More than 200 percent	53.6	88.3	56.0	88.4
Sample Size	9,421	24,399	6,249	18,789

Source: Authors' tabulations of the 2001 SIPP panel.

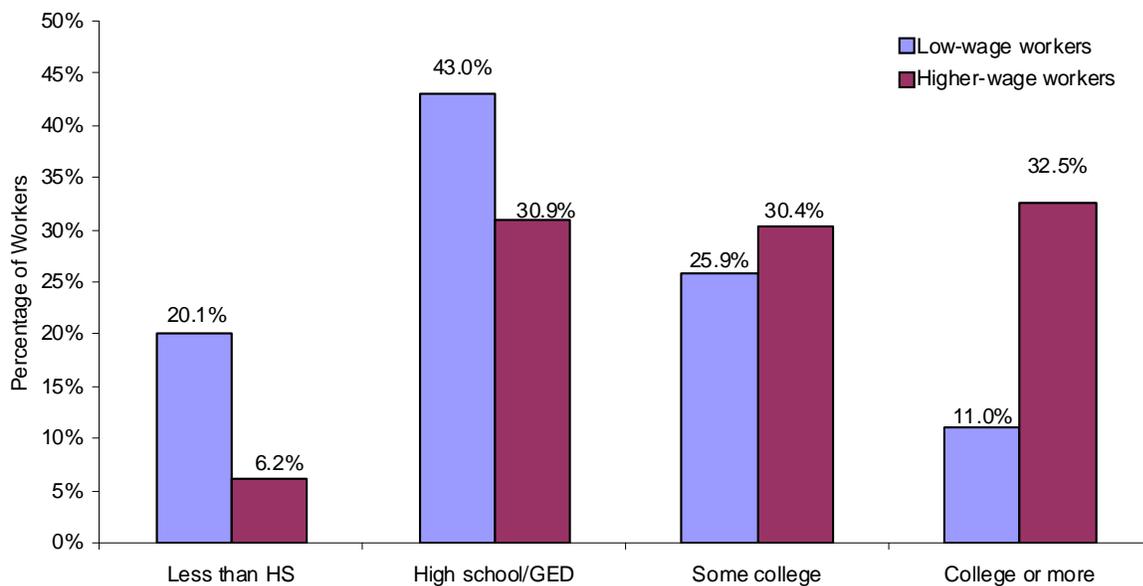
Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Those making more than \$8.63 in 2001 dollars are considered higher-wage workers. Statistical significance is calculated between low-wage worker and higher-wage worker subgroups within each period; * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$ for January 2001; + = $p < 0.1$, ++ = $p < 0.05$, +++ = $p < 0.01$ for January 2003. The differences between low-wage workers in 2001 and low-wage workers in 2003 are statistically significant at the $p < 0.01$ level for family structure, family size, and age of youngest child in family; at the $p < 0.05$ level for in public or subsidized housing; and at the $p < 0.1$ level for number of children in family. The differences between high-wage workers in 2001 and high-wage workers in 2003 are statistically significant at the $p < 0.01$ level for family structure, family size, and age of youngest child in family.

a. "Married with children" as a family structure means someone in the family is married and children are present. Thus, an unmarried mother can be living in a "married with children" family.

Individual Characteristics: Low-wage workers are more likely than higher-wage workers (i.e., all non-low-wage workers) to be female, young, black, or Hispanic. Almost 60 percent of all low-wage workers are female compared with only 43.4 percent of higher-wage workers. Among all low-wage workers, 5.1 percent are under age 20 (versus 0.7 percent for higher-wage workers) and another 28.7 percent are age 20 to 29 (versus 17.5 percent for higher-wage workers). However, not all workers move on to higher wages with age: over two-fifths of low-wage workers are 40 or older. Low-wage workers are more likely than higher-wage workers to be black or Hispanic. This could reflect average differences in the factors connected with low wages, such as skills, education and experience, as well as discrimination.

Low-wage workers have, on average, lower education levels than higher-wage workers (exhibit III-5). Over 20 percent of low-wage workers do not have a high school degree or GED, while only 6.2 percent of higher-wage workers have not completed high school. This difference may partly result from the age differences between the two groups. Nearly 26 percent of low-wage workers have some college, but only 11.0 percent have graduated from college. Almost one-third of higher-wage workers have a college education or more. Less education is one factor in the low wages of these workers.

Exhibit III-5: Educational Attainment Distribution of Workers in January 2001



Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Those making more than \$8.63 in 2001 dollars are considered higher-wage workers. The difference between low-wage workers and higher-wage workers is statistically significantly different at the $p < 0.01$ level.

Low-wage workers are also more likely than higher-wage workers to have a health-related work limitation—a self-report that a physical, mental or emotional condition limits one’s ability to work. This condition could be limiting the jobs available to these workers. In addition, low wages themselves may contribute to the presence and persistence of work-limiting conditions if low-wage jobs make it hard for low-wage workers to receive appropriate medical care (because of low incomes or a lack of health insurance) or expose workers to hazardous working conditions. The percentage of both low-wage and higher-wage workers reporting a limitation diminishes in 2003, and the difference between the two groups is also lower in 2003.

There are some differences in where low-wage workers live, both in region of the country and in urban versus nonurban areas. Larger percentages of low-wage workers than higher-wage workers live in the southern region of the country (41.9 percent compared with 32.5 percent) and outside metropolitan areas (27.6 percent compared with 19.2 percent).

Finally, low-wage workers are less likely to be married than higher-wage workers, 48.5 percent versus 64.0 percent. This may also be related to the younger ages of low-wage workers. Low-wage workers are also somewhat more likely to be cohabiting than higher-wage workers, although the rate of cohabitation for low-wage workers is lower in 2003 and the difference relative to higher-wage workers disappears.

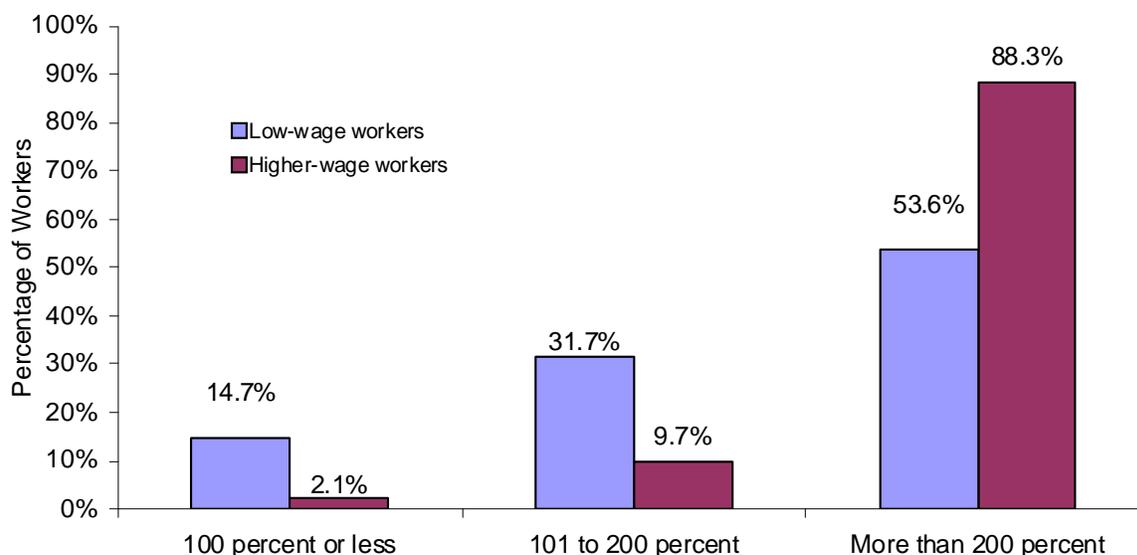
Family Characteristics: Exhibit III-4 shows that some family characteristics of low- and higher-wage workers also differ. Low-wage workers tend to live in different family structures than higher-wage workers. More low-wage workers live in single-headed families with children than higher-wage workers (10.7 percent versus 5.8 percent) or are cohabiting and have children (4.5 percent versus 2.6 percent). This is consistent with the differences in marital status noted above. However, family size, the number of children in families, and the age of the youngest child are not substantially different across low-wage and higher-wage workers.

It is important to note that despite differences in marital status and family structure, there is no statistically significant difference between low-wage and higher-wage workers in the percentage with another employed adult in the family. Over half, roughly 55 percent, of both groups have another employed adult in the family with which they live.

A larger percentage of low-wage workers lives in publicly subsidized housing than higher-wage workers, although this difference is small, 4.2 percent versus 1.0 percent. Low-wage workers are also more likely to be low income. Almost half of low-wage workers live in families with income less than 200 percent of the poverty threshold, compared with just over one-tenth of

higher-wage workers (exhibit III-6). About 15 percent of low-wage workers live in poverty compared with only 2.1 percent of higher-wage workers. These figures remain relatively stable between 2001 and 2003.

Exhibit III-6: Income as a Percentage of the Poverty Threshold for Workers in January 2001



Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Those making more than \$8.63 in 2001 dollars are considered higher-wage workers. The difference between low-wage worker and higher-wage worker subgroups is statistically significantly different at the $p < 0.01$ level.

Characteristics of Low-Wage Workers in 2001 versus 1996: The individual and family characteristics of low-wage workers in 2001 are very similar to the characteristics of low-wage workers in 1996. As noted above, we use the same definition of low-wage workers and a more recent sample of the same data source as Schochet and Rangarajan (2004), so we can fairly easily compare the distribution of characteristics of our findings to their findings for 1996.¹⁹

¹⁹ One difference in definition is the prior study analyzed characteristics for the household, while we use a somewhat more restricted social family concept. While in many cases these are the same, if a family lives with individuals that are not related by blood or marriage to the household head (excluding a cohabiting partner), then they are not included in our definition of family, but they would be in the earlier report's definition of household. This affects the size of the unit being analyzed. While we find 15.8 percent of low-wage workers live in one-person families and 35.7 percent in families with four or more people, Schochet and Rangarajan find 8 percent of low-wage workers live in one-person households and 41 percent in households of four or more. In general, we expect differences in results

Many individual characteristics of low-wage workers in 2001 are similar to those in 1996. In 1996, low-wage workers were more likely to be female, younger, nonwhite, unmarried, have a health-related work limitation, and have lower levels of education than all workers. The main differences between 1996 and 2001 are in the specific distribution of low-wage workers by race/ethnicity and education. The 1996 cohort had a smaller percentage of low-wage workers who were Hispanic, 14 percent versus 20.0 percent in 2001. This in part could reflect growth in the share of Hispanics in the larger population. Also, a much larger percentage of low-wage workers had a college degree or more in 1996, 20 percent versus 11.0 percent in 2001. The difference is also reflected in those with some college education, but the percentage with high school degrees or less is basically the same in 1996 and 2001.

Low-wage workers' families in 1996 were also disproportionately poor and living in public housing, although the levels differ somewhat from 2001. The percentage in public housing in 2001 was 4.2, compared with 2 percent in 1996, and the percentage with income less than the poverty threshold was 14.7 percent compared with 13 percent in 1996. In both 1996 and 2001, there was almost no difference in the percentage of low-wage workers versus other workers with another employed adult in the family. However, the actual percentage in each year differs substantially: in 1996, 70 percent of low-wage workers had another employed adult in the household, while in 2001 only 55.4 percent of low-wage workers had another employed family member. This could result from differences in how the two studies define which coresidents to include in the low-wage workers' family or household.

Demographic Characteristics of Low-Wage Workers: All Low-Wage versus Subgroups

In addition to differences between low-wage and higher-wage workers, we are interested in whether any of our key subgroups (defined above) have characteristics that are substantially different than all low-wage workers. Exhibit III-7 shows both individual and family characteristics for these four subgroups.²⁰ These results show that the key subgroups we have identified have substantially different individual and family characteristics from all low-wage workers.

due to this definition would be small, but it could account for some of the differences in family/household characteristics. It does not affect comparison of individual characteristics.

²⁰ Only a subset of the characteristics shown in exhibits III-3 and III-4 are shown in this exhibit. Most other factors are of limited interest because one or more subsample is defined using the characteristic, for example gender.

**Exhibit III-7: Individual and Family Characteristics
of Low-Wage Workers in January 2001, by Subgroup**

	In Low-Income Families				
	All (%)	Unmarried mothers (%)	Less-educated black males (%)	All (%)	Unmarried mothers (%)
Age					
Under 20	5.1	4.0 ***	7.1 ***	5.4 ***	3.9 ***
20 to 29	28.7	36.2	29.9	31.5	35.7
30 to 39	25.0	37.1	26.6	28.5	39.1
40 to 49	22.1	19.5	20.5	21.4	18.6
50 to 59	14.6	3.1	12.3	10.5	2.7
60 to 64	4.5	0.1	3.6	2.8	0.0
Educational Attainment					
Less than HS	20.1	21.3 ***	26.8 ***	28.8 ***	22.7 ***
High school/GED	43.0	46.0	73.2	42.9	46.8
Some college	25.9	28.0	0.0	22.1	27.0
College or more	11.0	4.8	0.0	6.2	3.6
Has a Health-Related Work Limitation					
Yes	8.9	6.9 ***	11.4	9.4	7.5
No	91.1	93.1	88.6	90.6	92.5
Region of Residence					
East	15.2	14.1 ***	16.2 ***	13.9 ***	14.8 ***
Central	21.6	20.2	15.1	18.5	18.7
Western and Pacific	21.2	21.4	6.5	22.9	21.2
Southern	41.9	44.4	62.2	44.6	45.3
Family Structure					
Single with children	10.7	71.2 ***	9.7 ***	18.2 ***	75.6 ***
Cohabiting with children	4.5	19.6	9.9	7.9	19.5
Married with children ^a	32.7	9.2	24.7	32.0	4.9
Married without children	26.1	0.0	18.6	10.9	0.0
Adult without children	26.0	0.0	37.1	31.1	0.0
Other Employed Adult in Family					
Yes	55.4	31.2 ***	56.0	37.3 ***	23.5 ***
No	44.6	68.8	44.0	62.7	76.5
In Public or Subsidized Housing					
Yes	4.2	16.5 ***	6.5 ***	7.6 ***	19.9 ***
No	95.8	83.5	93.5	92.4	80.1
Family Income as a % of Poverty					
100 percent or less	14.7	39.8 ***	15.9 ***	31.7 ***	50.0 ***
101 to 200 percent	31.7	39.8	37.2	68.3	50.0
More than 200 percent	53.6	20.4	46.9	0.0	0.0
Sample Size	9,421	1,109	349	4,585	902

Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold.

Statistical significance is calculated between all low-wage workers and each low-wage worker subgroup. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

a. "Married with children" as a family structure means someone in the family is married and children are present. Thus, an unmarried mother can be living in a "married with children" family.

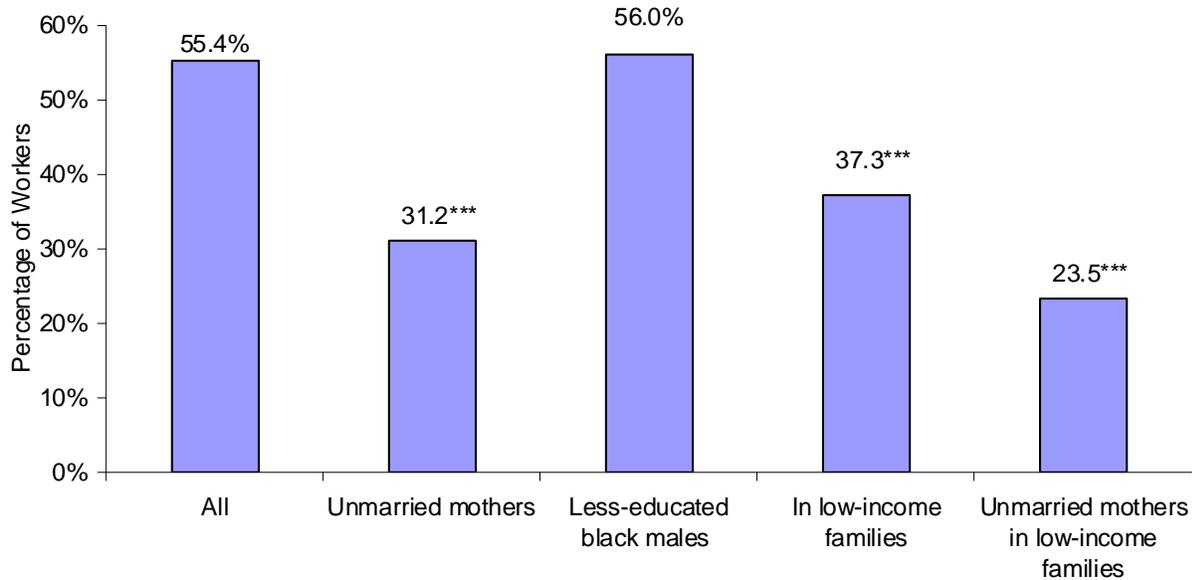
Low-wage working unmarried mothers are more likely to be in the middle age groups than all low-wage workers. Fewer of them are under 20, and fewer of them are over 40. This is also true for the subset of these unmarried mothers living in low-income families. Less-educated black males and low-wage workers in low-income families tend to be younger than all low-wage workers. For all the key subgroups, educational attainment is lower than for all low-wage workers. For example, a smaller percentage of each subgroup has a college education and a larger percentage has less than a high school degree compared with all low-wage workers.

There is little difference in the likelihood of having a health-related work limitation, although unmarried mothers have a slightly lower rate than all low-wage workers (6.9 percent versus 8.9 percent). There are only relatively small differences in the distribution of these subgroups of low-wage workers across the country with the exception of less-educated black males. Compared with all low-wage workers, less-educated black male low-wage workers are substantially more likely to live in the southern region (62.2 percent versus 41.9 percent) and less likely to live in the western and Pacific region (6.5 percent versus 21.2 percent).

Family structure is also different. The distribution for unmarried mothers differs by definition—they are all living with children. However, low-wage workers in low-income families also have different family structures than all low-wage workers. They are more likely to be single or cohabiting with children than all low-wage workers, more likely to be single without children, and less likely to be married without children. These results make sense in that low-wage single adults (with or without children) are more likely to be low-income because they do not have another adult's earnings to rely on. Less-educated black males are also more likely to be in a single family without children than all low-wage workers (37.1 percent versus 26.0 percent).

Although all low-wage workers as a group are no less likely to have another employed adult in the family than higher-wage workers, this is not true for most subgroups (exhibit III-8). Low-wage unmarried mothers and low-income low-wage workers are substantially less likely to live in a family with another employed adult (31.2 and 37.3 percent compared with 55.4 percent). This lack of another source of income is in part what makes family income low for low-wage workers. These results are also reflected in the higher use of public or subsidized housing and higher rates of poverty for each of these subgroups compared with low-wage workers generally. For example, 14.7 percent of all low-wage workers are in families with incomes below the poverty threshold, while 39.8 percent of low-wage unmarried mothers have income below this level.

**Exhibit III-8: Percentage of Low-Wage Workers with
an Additional Employed Adult in the Family in January 2001**



Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with incomes less than two times the federal poverty threshold.

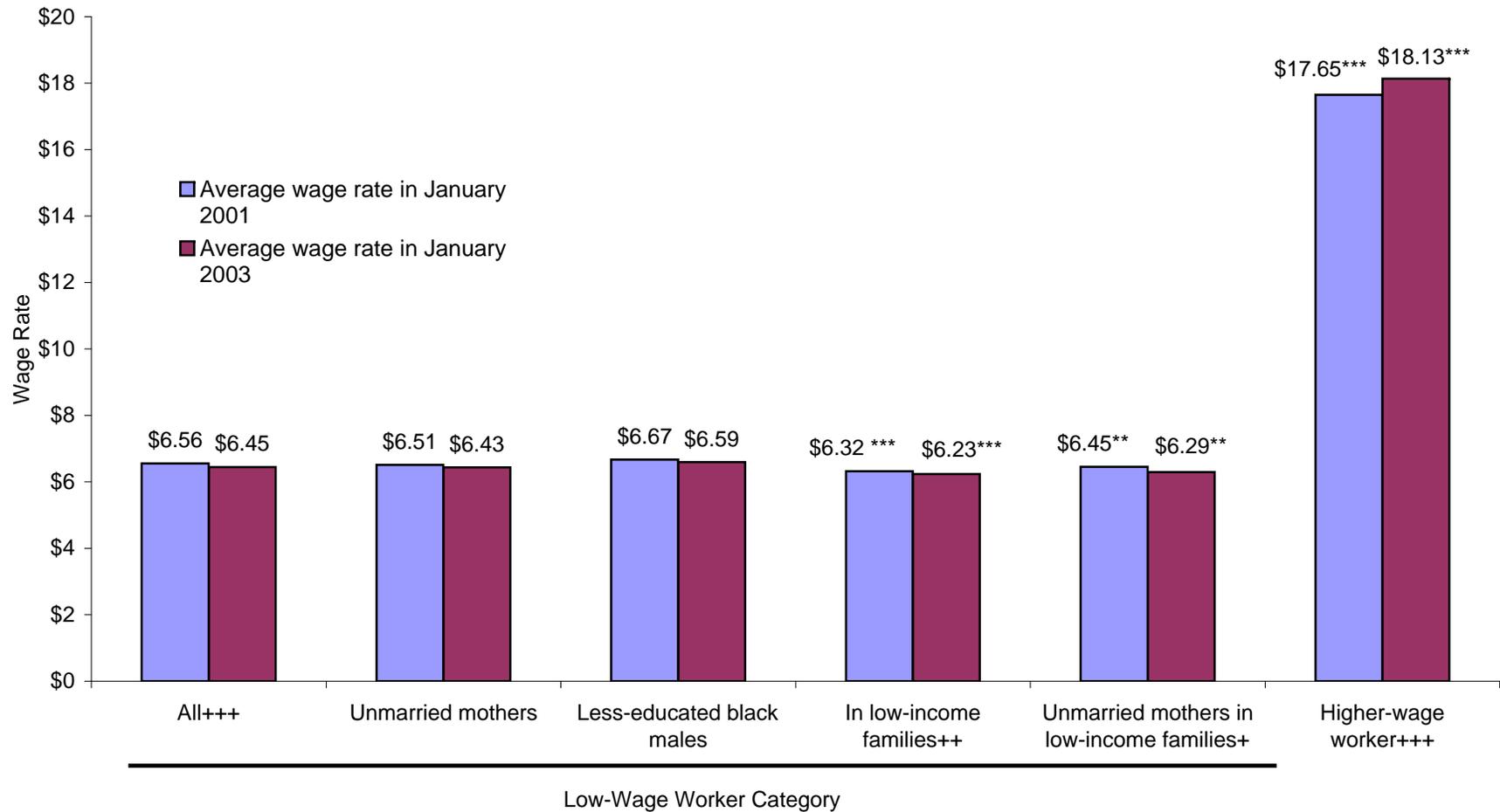
Statistical significance is calculated between all low-wage workers and each low-wage worker subgroup. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

The picture for less-educated black males is somewhat different. Although they are more likely to be single and without children than all low-wage workers, they are about as likely to have another employed adult in the family and only slightly more likely to have income below the poverty threshold. However, low-wage less-educated black males are more likely to be low income (less than 200 percent of the poverty threshold) than all low-wage workers.

Job and Employment Characteristics of Low-Wage Workers

By definition, low-wage workers in this study make less than \$8.63 in 2001. But many of these workers earned far less an hour than this cutoff. On average, workers falling into the low-wage category in 2001 earned \$6.56 an hour, and more than a third of all low-wage workers earned less than this an hour (exhibit III-9). This is compared with an average hourly wage of all higher-wage workers of \$17.65.

Exhibit III-9: Average Hourly Wage Rate of Workers



Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold. Statistical significance is calculated on the difference in average hourly wage between the group of all low-wage workers and each other group in each year. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$. Statistical significance is also calculated within each group over time; + = $p < 0.1$, ++ = $p < 0.05$, +++ = $p < 0.01$.

Average hourly wages of the target subgroups outlined above differ only marginally from each other and from all low-wage workers. For example, low-wage workers in low-income families earned on average \$6.32 per hour in 2001. While some differences in the average wage rate are statistically significant, the absolute differences are less than \$0.25 an hour.

Although the average wage of higher-wage workers went up between 2001 and 2003 (from \$17.65 to \$18.13), the average hourly wage of low-wage workers declined slightly (from \$6.59 to \$6.45). Slight declines in average wages were recorded for several key subgroups as well.

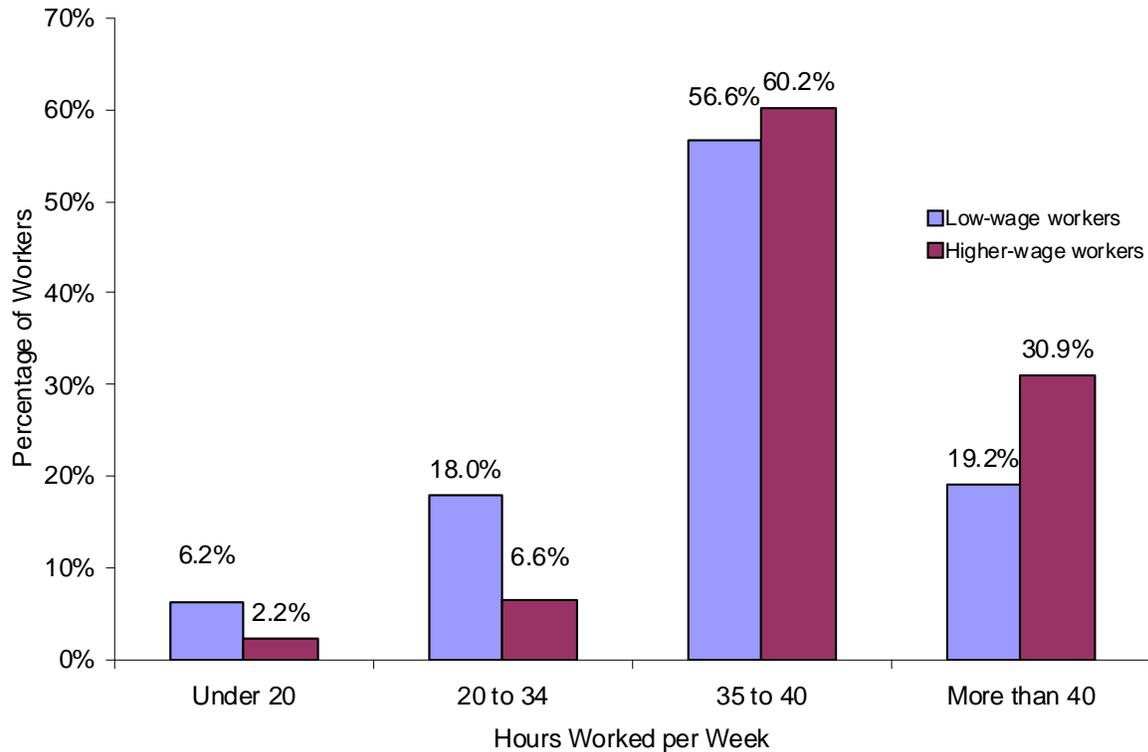
The jobs low-wage workers hold differ from higher-wage jobs not only in wages but also in other characteristics. Low-wage workers are more likely to be working part time, in nonunionized jobs, and in small firms. These characteristics are part of the explanation for why these jobs are lower paying.

The average low-wage worker works full-time hours (38 hours a week), but a substantial fraction work part time (exhibit III-10). Among all low-wage workers, 18.0 percent work between 20 and 34 hours a week, and 6.2 percent work less than 20 hours a week. Far fewer higher-wage workers than low-wage workers work less than full time: 6.6 percent work 20 to 34 hours a week, and 2.2 percent work less than 20 hours. Low hours and low wages together lead to lower earnings, especially for those who are primary earners. Some part-time low-wage workers may be choosing to work fewer hours. However, 10.9 percent of low-wage workers (almost half of part-time low-wage workers) report they are working part-time involuntarily; that is, they were seeking but could not find full-time work (exhibit III-11). This is compared with only 3.4 percent of higher-wage workers. A similar small percentage of low- and higher-wage workers is self-employed (about 2 percent), but more low-wage workers work multiple jobs, 11.1 percent versus 7.2 percent.

Low-wage workers are less likely to be in unionized jobs than higher-wage workers (6.1 percent versus 18.2 percent). Low-wage workers are also more likely to work in small firms. Almost half of low-wage workers (45.5 percent) work in firms with less than 25 employees, compared with over a quarter (28.5 percent) of higher-wage workers. The opposite is true for working in firms with over 100 employees. Both unionization and larger firm sizes are typically related to higher wages.

Low-wage workers are also less likely to have employer-provided health insurance. Only 55.6 percent of low-wage workers have this type of coverage, compared with 87.8 percent of

Exhibit III-10: Usual Weekly Hours Worked for Workers in January 2001



Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Those making more than \$8.63 in 2001 dollars are considered higher-wage workers. The difference between low-wage workers and higher-wage workers is statistically significant at the $p < 0.01$ level.

higher-wage workers. (We discuss health insurance coverage in greater depth in the next section.) This is in part related to firm size and part-time status, since larger firms and full-time jobs are more likely to have employer-provided health insurance.

Finally, there are substantial significant differences in the occupations and industries of the jobs low-wage workers hold versus higher-wage workers. Low-wage workers' jobs are more likely to be in service and sales occupations and less likely to be in the professional/technical occupations than higher-wage workers. Further, low-wage workers' jobs are more likely to be in the wholesale/retail trade industries and less likely to be in manufacturing or public administration. For all these job characteristics, there is almost no substantive change for low-wage workers in 2003 versus 2001.

**Exhibit III-11: Job Characteristics of Low-Wage and Higher-Wage Workers
in January 2001 and January 2003**

	Percentage of Workers in 2001		Percentage of Workers in 2003	
	Low-wage workers	Higher-wage workers	Low-wage workers	Higher-wage workers
Usual Hours Worked a Week ****+*				
Under 20	6.2	2.2	7.3	2.9
20 to 34	18.0	6.6	20.4	7.6
35 to 40	56.6	60.2	57.1	65.8
More than 40	19.2	30.9	15.2	23.8
Average hours worked ****+*	38.2	41.8	36.9	40.6
Involuntary Part Time ****+*	10.9	3.4	11.6	3.5
Self-employed ***	1.7	1.8	2.3	2.9
Working Multiple Jobs ****+*	11.1	7.2	9.9	7.9
Union Member ****+*	6.1	18.2	4.7	16.5
Firm Size ****+*				
Less than 25	45.5	28.5	48.0	29.7
25 to 99	26.2	24.1	24.4	24.9
100 or more	28.4	47.4	27.6	45.4
Has Employer-Provided Health Insurance ****+*				
Yes	55.6	87.8	55.0	86.7
No	44.4	12.2	45.0	13.3
Occupation ****+*				
Professional/technical	16.9	40.6	16.7	40.6
Sales/retail	14.8	8.6	13.8	8.6
Administrative support/clerical	13.9	14.9	13.4	15.2
Service professions	26.2	8.4	28.3	9.3
Machine/construction/production/ transportation	25.0	26.6	24.0	25.2
Farm/agricultural and other	3.2	0.9	3.8	1.0
Industry ****+*				
Construction	4.4	7.2	4.3	6.9
Manufacturing	11.5	18.6	9.8	16.8
Transportation/communications/ utilities	4.6	8.9	4.4	8.0
Wholesale/retail trade	31.8	13.9	32.4	14.4
Financial/Insurance/Real Estate	4.4	6.9	3.6	7.0
Services	37.2	35.5	38.4	37.6
Public administration	2.8	7.5	3.3	7.5
Agriculture and others	3.3	1.6	3.8	1.8
Sample Size	9,421	24,399	6,249	18,789

Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Those making more than \$8.63 in 2001 dollars are considered higher-wage workers. Statistical significance is calculated between low-wage worker and higher-wage worker subgroups, within each period. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$ for January 2001; + = $p < 0.1$, ++ = $p < 0.05$, +++ = $p < 0.01$ for January 2003. The differences between low-wage workers in 2001 and low-wage workers in 2003 are statistically significant at the $p < 0.01$ level for usual hours worked a week, average hours worked, union member, firm size, and industry, and at the $p < 0.05$ level for self-employed, working multiple jobs, and occupation. The differences between higher-wage workers in 2001 and higher-wage workers in 2003 are statistically significant at the $p < 0.01$ level for usual hours worked, average hours worked, self-employed, has employer-provided health insurance, union member, working multiple jobs, firm size, occupation, and industry.

Job Characteristics of Low-Wage Workers in 2001 versus 1996: As we did earlier, we compare job characteristics for low-wage workers in 2001 with those in 1996, as reported in Schochet and Rangarajan (2004). The job characteristics of low-wage workers in both years are largely the same. Low-wage workers in 1996 were also disproportionately more likely to work part time and work multiple jobs, and less likely to be in a union or have employer-provided health insurance. Both groups worked on average 38 hours, with a similar distribution of part-time and full-time work. The percentage working multiple jobs is somewhat higher in 2001, 11.1 percent, compared with 8 percent in 1996. The percentage with employer-provided health insurance is also somewhat higher in 2001 than in 1996, 55.6 percent compared with 50 percent. And although the distributions of occupation and industry are similar, a somewhat higher percentage of low-wage workers in 1996 worked in service professions than in 2001 (33 percent compared with 26.2 percent), with the difference made up by construction and professional/technical occupations in 2001.

Job Characteristics: All Low-Wage versus Subgroups

In addition to differences in job characteristics between low-wage workers and higher-wage workers, there are some differences between the subgroups of low-wage workers we identified earlier. Exhibit III-12 presents the job characteristics of all low-wage workers compared with low-wage working unmarried mothers, less-educated black males, workers in low-income families, and working unmarried mothers in low-income families.

For each subgroup, average hours worked a week are over 35, although the distribution of hours differs from all low-wage workers for three of the subgroups. For these subgroups, hours tend to be more concentrated in the 20- to 35-hour range than for all low-wage workers, with fewer people working less than 20 hours or more than 40 hours. Each subgroup also has a relatively high percentage of workers reporting they are involuntarily working part-time hours, either 14 or 15 percent (exhibit III-13).

Each of these subgroups has a lower percent of workers with employer-provided health insurance than the group of all low-wage workers. For example, while 55.6 percent of all low-wage workers have employer-provided health insurance, only 39.1 percent of low-wage workers in low-income families have this coverage. The most common occupation and industries are generally similar to that for all low-wage workers, although a higher percentage of low-wage workers in these subgroups work in services and fewer work in professional/technical occupations.

**Exhibit III-12: Job Characteristics of Low-Wage Workers
in January 2001, by Subgroup**

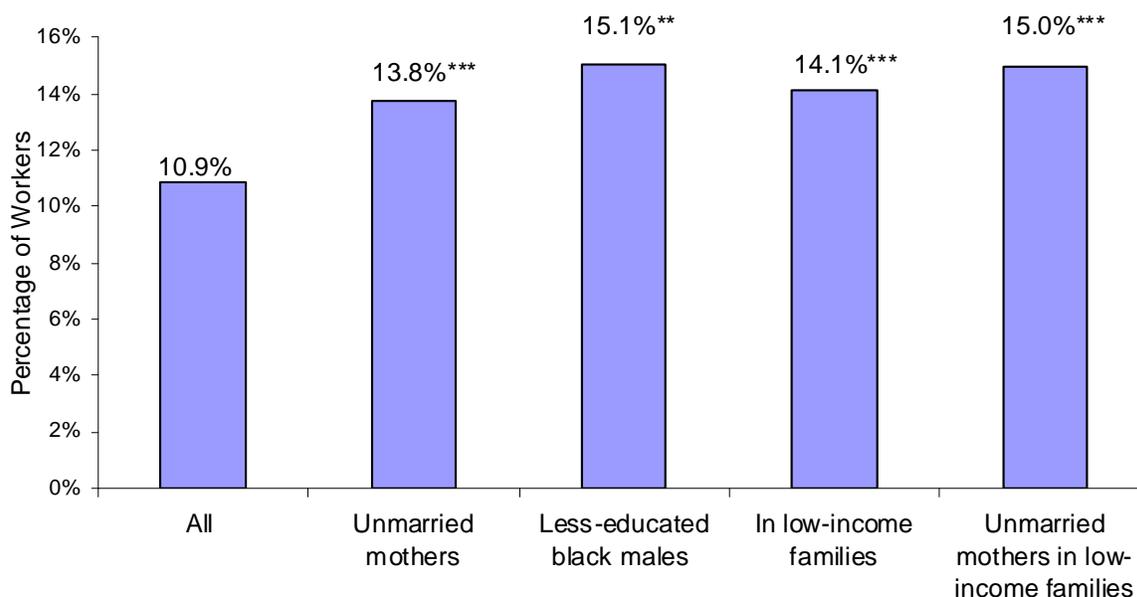
	In Low-Income Families				
	All (%)	Unmarried mothers (%)	Less-educated black males (%)	All (%)	Unmarried mothers (%)
Usual Hours Worked a Week					
Less than 20	6.2	4.9 ***	4.5 ***	6.5 ***	5.7 ***
20 to 34	18.0	23.3	13.9	19.1	24.2
35 to 40	56.6	61.6	66.9	60.2	62.0
More than 40	19.2	10.2	14.8	14.2	8.0
Average hours worked	38.2	36.2 ***	38.6	36.9 ***	35.5 ***
Involuntary Part Time	10.9	13.8 ***	15.1 **	14.1 ***	15.0 ***
Self-employed	1.7	1.1 *	0.7 **	1.1 ***	1.1 *
Working Multiple Jobs	11.1	12.7 *	7.3 **	10.3 **	11.9
Union Member	6.1	5.1	4.5	4.9 ***	5.8
Firm Size					
Less than 25	45.5	43.7	38.0 **	48.1 ***	44.6
25 to 99	26.2	27.8	27.8	25.4	28.2
100 or more	28.4	28.5	34.2	26.5	27.3
Has Employer-Provided Health Insurance					
Yes	55.6	36.7 ***	48.0 ***	39.1 ***	33.5 ***
No	44.4	63.3	52.0	60.9	66.5
Occupation					
Professional/technical	16.9	12.2 ***	4.8 ***	11.5 ***	10.1 ***
Sales/retail	14.8	19.3	7.4	13.7	19.6
Administrative support/clerical	13.9	18.5	8.0	10.6	16.9
Service professions	26.2	33.3	31.5	30.9	35.8
Machine/construction/production/transportation	25.0	15.4	44.6	28.8	16.3
Farm/agricultural and other	3.2	1.2	3.7	4.5	1.2
Industry					
Construction	4.4	0.8 ***	5.7 ***	5.1 ***	0.7 ***
Manufacturing	11.5	9.4	14.2	12.7	9.2
Transportation/communications/utilities	4.6	3.4	9.4	4.0	3.0
Wholesale/retail trade	31.8	35.5	34.0	32.9	35.1
Financial/insurance/real estate	4.4	5.3	2.3	3.2	4.8
Services	37.2	42.5	28.8	35.3	44.1
Public administration	2.8	1.7	2.7	2.3	1.7
Agriculture and others	3.3	1.4	3.0	4.5	1.5
Sample Size	9,421	1,109	349	4,585	902

Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold.

Statistical significance is calculated between low-wage worker subgroups and the rest of the low-wage worker population. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

**Exhibit III-13: Percentage of Low-Wage Workers
Involuntarily Working Part Time in January 2001**



Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold.

Statistical significance is calculated between low-wage worker subgroups and the rest of the low-wage worker population.

* = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

Across the subgroups, low-wage less-educated black males stand out as having somewhat different employment circumstances than unmarried mothers and all low-wage workers in low-income families. Low-wage less-educated black males are somewhat more likely to work in large firms and to have employer-provided health insurance and less likely to work multiple jobs. They are the least likely of these subgroups to work in professional/technical or sales and retail occupations, with higher rates of employment in machine/construction/production/transportation jobs. This difference may in part be related to the difference in gender makeup across the subgroups as well as the difference in education levels.

Health Insurance Status and Change Over Time

Because most Americans receive their health insurance through an employer, the low rate of employer-provided health insurance coverage for low-wage workers is a concern. Exhibit III-14 shows that, in fact, low-wage workers are much more likely to be without health insurance coverage than higher-wage workers. In 2001, 30.8 percent of low-wage workers were without health insurance coverage, while only 7.6 percent of higher-wage workers lacked coverage (exhibit III-15). For those who have coverage, employer-provided health insurance is by far the

most common source for all workers. But even so, low-wage workers with health insurance are much less likely to have employer-provided health insurance than higher-wage workers. The same pattern is true in 2003, although the percentage of workers without health insurance coverage went up slightly for low-wage and higher-wage workers.

Exhibit III-14: Health Insurance Coverage of Workers in January 2001 and January 2003

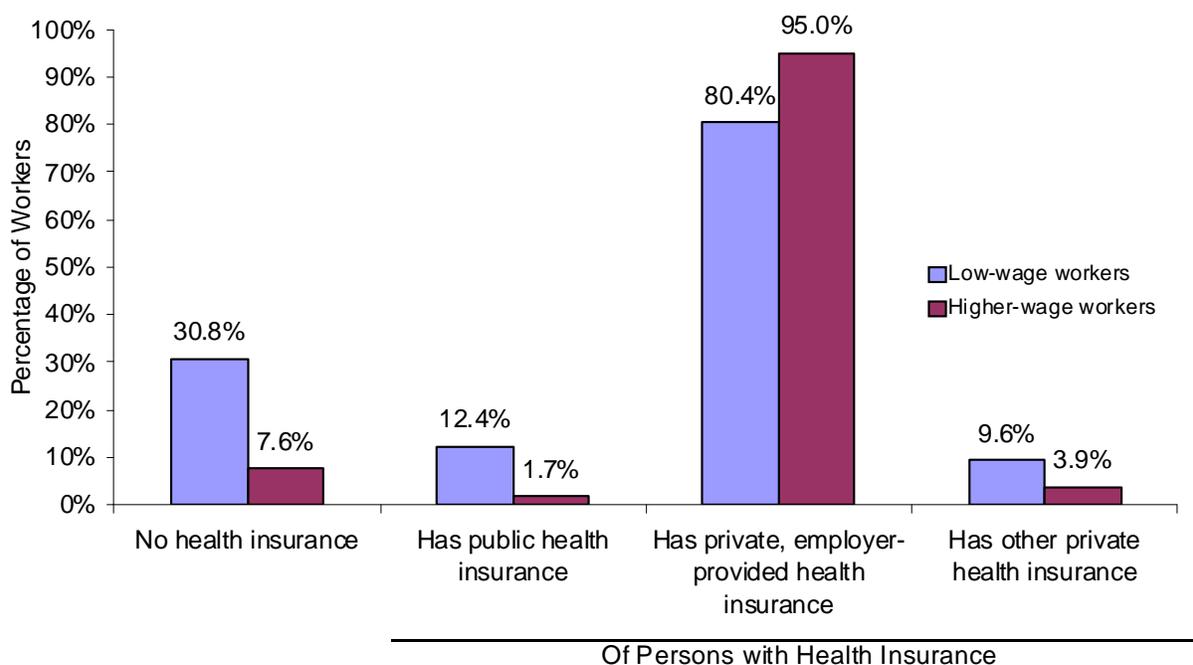
	Percentage of Workers in 2001		Percentage of Workers in 2003	
	Low-wage workers	Higher-wage workers	Low-wage workers	Higher-wage workers
Worker's Health Insurance (HI) Coverage ***+++				
Percent without HI	30.8	7.6	32.3	8.7
Percent with HI	69.2	92.4	67.7	91.3
Public HI ^a	12.4	1.7	12.9	1.9
Private, employer HI	80.4	95.0	81.2	95.0
Private, other HI*	9.6	3.9	7.9	3.7
Reason No HI (if no HI) ***				
Too expensive, cannot afford	33.7	31.2	45.3	43.5
HI not offered by employer	34.1	33.7	32.8	32.5
Not at job long enough to qualify	12.1	13.9	6.5	8.7
Job layoff, loss, unemployment	2.0	2.8	2.4	2.1
Not eligible, part-time or temp job	5.0	4.3	4.1	3.2
Other	13.2	14.1	8.9	10.0
Worker's Family's HI Coverage ***+++				
No one has HI	15.0	3.8	13.4	3.9
All have HI	58.1	85.2	57.0	82.8
Some have HI	27.0	10.9	29.6	13.3
Percent in family with HI	73.1	91.7	73.4	90.6
Type of HI (for families where all members have HI) ***+++				
All public HI	7.9	0.8	7.7	0.9
All private HI	85.1	95.9	83.0	95.1
Mix of public and private HI	7.0	3.4	9.3	4.0
Sample Size	9,421	24,399	6,249	18,789

Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Those making more than \$8.63 in 2001 dollars are considered higher-wage workers. Statistical significance is calculated between low-wage worker and higher-wage worker subgroups within each period. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$ for January 2001; + = $p < 0.1$, ++ = $p < 0.05$, +++ = $p < 0.01$ for January 2003. The differences between low-wage workers in 2001 and low-wage workers in 2003 are statistically significant at the $p < 0.01$ level for type of insurance for those with coverage (public HI, private-employer HI, private-other HI), reason for no health insurance, and worker's family's coverage (no one has HI, all have HI, some have HI), and at the $p < 0.05$ level for percent without HI and type of HI for families where all members have HI. The differences between higher-wage workers in 2001 and higher-wage workers in 2003 are statistically significant at the $p < 0.01$ level for percent without HI, reason no HI, worker's family's HI coverage, percent in family with HI, and type of HI for families where all members have HI.

a. 2.39 percent of low-wage workers in January 2001, 0.58 percent of higher-wage workers in January 2001, 2.03 percent of low-wage workers in January 2003, and 0.59 percent of higher-wage workers in January 2003 have some combination of public and private health insurance coverage, and thus are double-counted here.

Exhibit III-15: Health Insurance Status for Workers in January 2001



Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Those making more than \$8.63 in 2001 dollars are considered higher-wage workers. 2.39 percent of low-wage workers and 0.58 percent of higher-wage workers have some combination of public and private health insurance coverage, and thus are double-counted here. The difference between low-wage worker and higher-wage worker subgroups is statistically significant at the $p < 0.01$ level.

The reasons workers give for not having health insurance coverage are remarkably similar for low-wage and higher-wage workers. About one-third report they cannot afford the coverage. Roughly another third say that health insurance was not offered by their employer. An additional 12 to 14 percent report not being at their current job long enough to qualify for coverage. Other reasons for lack of coverage include job loss or unemployment and being ineligible because the job is part time or temporary work. In 2003, a larger percentage of both low and higher-wage workers reported an inability to afford coverage and a smaller percentage reported they lacked coverage because they were not at the job long enough to qualify.

For 15.0 percent of low-wage workers, no one in the family has health insurance coverage. This is roughly half of low-wage workers who have no health insurance. Only 3.8 percent of higher-wage workers have no family member with health insurance. On the other hand, when a low-wage worker has coverage, this does not mean the entire family has coverage. A smaller percentage of low-wage workers, 58.1 percent, has all members of the family covered by health insurance than have health insurance themselves. And some families where everyone is covered (7.9 percent) are totally reliant on public health insurance.

IV. LOW-WAGE WORKERS' WAGE PROGRESSION

Descriptive Analyses

Do Low-Wage Workers Move Out of Low-Wage Employment?

Over our two-year study period, low-wage workers made very limited progress. As exhibit IV-1 shows, about two-fifths of low-wage workers from January 2001 remained low-wage workers in January 2003, and one-quarter were not working at all.²¹ This is similar to the results of Schochet and Rangarajan (2004), who find that 43 percent of low-wage workers in 1996 are still low-wage workers in 1999 and that 23 percent are not working at all.²² About one-third of our sample were working at higher-wage jobs in January 2003, with 28.2 percent working in moderate-wage jobs (wages between \$8.63 and \$17.26 an hour) and 5.9 percent working in high wage jobs (over \$17.26 an hour).²³

**Exhibit IV-1: Employment and Wage Rate Status in January 2003
of Low-Wage Workers in January 2001**

	All (%)	Unmarried mothers (%)	Less-educated black males (%)	In Low-Income Families	
				All (%)	Unmarried mothers (%)
Percent in Worker Category					
Not employed	24.8	25.4	34.5 ***	24.8	26.7
Low-wage worker	41.2	47.0 ***	38.4	47.7 ***	49.8 ***
Moderate-wage worker	28.2	25.4 *	24.5	23.9 ***	21.3 ***
High-wage worker	5.9	2.2 ***	2.6 **	3.6 ***	2.2 ***
Sample Size	6,220	751	217	2,921	605

Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold.

Statistical significance is calculated between low-wage worker subgroups and the rest of the low-wage worker population.

* = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

²¹ In this section, our sample is based on low-wage workers in January 2001 who are also observed in the SIPP in January 2003. For certain analyses, we further restrict our sample to low-wage workers in January 2001 who are also working in January 2003.

²² These percentages are based on authors' tabulations from data in table V.1 (page 97) of Schochet and Rangarajan (2004).

²³ Findings from Schochet and Rangarajan (2004) suggest that among low-wage workers in 1996, 32 and 2 percent, respectively, were in moderate- and high-wage jobs in 1999.

Low-wage workers who are unmarried mothers as well as those who live in low-income families show slightly less progress than the average low-wage worker. About 47.0 percent of low-wage workers in these groups in January 2001 were also low-wage workers two years later, while less than 30 percent earned moderate or high wages. For less-educated black men, progress is even worse. Over a third of these low-wage men were not working in January 2003.

Focusing on two points in time, January 2001 and January 2003, potentially misses important transitions into and out of low-wage employment that may occur over the two-year period. For example, a low-wage worker in 2001 who was also working in a low-wage job in 2003 may have spent much of the time between the two observations in a higher-wage job; alternatively, the worker may have experienced a considerable period of joblessness.

The findings on the percentage of time low-wage workers spend in different wage status categories over the two-year period, however, largely echo those discussed above. The average low-wage worker in 2001 spent more than half the time between 2001 and 2003 in low-wage jobs (exhibit IV-2), one-quarter of the time in moderate-wage jobs, one-twentieth of the time in high-wage jobs, and less than one-fifth of the time not working at all.²⁴ The findings are similar across key population subgroups such as unmarried mothers, less-educated black men, and low-wage workers in low-income families, with each group spending slightly more time in low-wage employment and not working than the average low-wage worker.

**Exhibit IV-2: Percentage of Months Spent in Each Wage Category
from January 2001 to January 2003
Low-Wage Workers in January 2001**

	All (%)	Unmarried mothers (%)	Less-educated black males (%)	In Low-Income Families	
				All (%)	Unmarried mothers (%)
Mean					
Not working	17.5	20.5 ***	22.2 **	17.8 **	20.7 ***
Low-wage	53.5	59.3 ***	55.0	59.2 ***	62.0 ***
Moderate-wage	23.8	18.3 ***	19.9 ***	19.6 ***	15.7 ***
High-wage	5.1	1.9 ***	2.9 ***	3.4 ***	1.5 ***
Sample Size	6,220	751	217	2,921	605

Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold.

Statistical significance is calculated between low-wage worker subgroups and the rest of the low-wage worker population. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

²⁴ This is broadly similar to the findings from Schochet and Rangarajan (Figure IV.6, page 65) for the 1996 to 1999 period.

Who Moves Out of Low-Wage to Higher-Wage Employment?

In exhibit IV-3, we consider the characteristics of low-wage workers and their jobs that are associated with attaining higher wage status (i.e., working in a moderate- or high-wage job) by January 2003. For our sample of low-wage workers in January 2001, the exhibit shows, by characteristic, the percentage of workers that were in a higher-wage job in January 2003. A higher percentage of men than women moved to higher wage jobs between 2001 and 2003 (39.4 percent versus 31.2 percent). Prime-age workers were more likely to be in higher-wage jobs in 2003 than very young workers and older workers. Nearly 40 percent of white low-wage workers were working in higher-wage jobs in January 2003, a notably higher share than black and Hispanic workers (27.9 percent and 28.9 percent, respectively). Education is strongly associated with progression to higher wage status. Over half of the low-wage workers with college degrees in January 2001 were working in higher-wage jobs by January 2003. In contrast, only 23.2 percent of those without high school degrees in 2001 and 31.6 percent of those with high school degrees but no further schooling achieved higher wage status over the two-year period. Not surprisingly, low-wage workers reporting a health-related work limitation were also less likely than low-wage workers who do not report a limitation to achieve higher wage status in 2003. These results are consistent with research on low-wage workers wage progression in the late 1990s that finds that males, older workers, whites, and those without health limitations are somewhat more likely to experience wage growth than their respective counterparts (Schochet and Rangarajan 2004, 103).

Upward mobility in wage status also varies by area of residence. Low-wage workers in the east were more likely to be working in higher-wage jobs in January 2003 than those in other regions, while workers in the south were less likely to move to a higher wage. Those living in metropolitan areas were also more likely to hold higher-wage jobs in 2003 than those in other areas.

Whether a low-wage worker lives with children or with other adults makes little difference to their future wage status. Even those living with a child under age 6 were not appreciably less likely to be higher-wage workers in January 2003 than the average low-wage worker.

**Exhibit IV-3: Probability a Low-Wage Worker in January 2001
Becomes a Moderate- or High-Wage Worker in January 2003, by
Worker and Job Characteristics**

	Moderate- or high-wage worker in 2003
Worker Characteristics	
Gender	
Male	39.4 ***
Female	31.2 ***
Age	
Under 20	24.2 ***
20 to 29	32.4 *
30 to 39	35.9
40 to 49	39.3 ***
50 to 59	35.8
60 to 64	17.4 ***
Race/Ethnicity	
White, non-Hispanic	37.2 ***
Black, non-Hispanic	27.9 ***
Hispanic	28.9 ***
Other	33.9
Educational Attainment	
Less than HS	23.2 ***
High school/GED	31.6 ***
Some college	39.0 ***
College or more	51.4 ***
Has a Health-Related Work Limitation	
Yes	22.1 ***
No	35.5 ***
Region of Residence	
East	39.5 ***
Central	35.5
Western and Pacific	34.0
Southern	32.0 ***
Lives in Metropolitan Area	
Yes	36.8 ***
No	28.3 ***
Married	
Yes	36.4 ***
No	32.1 ***
Youngest Child under 6 Years Old	
Yes	32.4 *
No	34.9 *

Continued on next page

**Exhibit IV-3: Probability a Low-Wage Worker in January 2001
becomes a Moderate- or High-Wage Worker in January 2003, by
Worker and Job Characteristics, continued**

	Moderate- or high-wage worker in 2003
Job Characteristics	
<i>Usual Hours Worked a Week</i>	
Under 20	21.6 ***
20 to 34	23.6 ***
35 to 40	35.4 *
More than 40	45.2 ***
<i>Firm Size</i>	
Less than 25	31.2 ***
25 to 99	34.0
100 or more	39.4 ***
<i>Occupation</i>	
Professional/technical	48.3 ***
Sales/retail	31.2 **
Administrative support/clerical	40.0 ***
Service professions	23.7 ***
Machine/construction/production /transportation	34.6
Farm/agricultural and other	25.8 ***
<i>Industry</i>	
Construction	43.2 **
Manufacturing	37.0
Transportation/communications /utilities	45.6 ***
Wholesale/retail trade	29.3 ***
Financial/insurance/real estate	44.9 ***
Services	33.1
Public administration	49.1 ***
Agriculture and others	29.4
Sample Size	6,220

Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Those making more than \$8.63 in 2001 dollars are considered moderate- and high-wage workers.

Statistical significance is calculated between those with each characteristics and everyone else (e.g., those with a high school degree versus those with all other education levels).

* = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

The characteristics of a low-wage worker's job also influence their future wage status (exhibit IV-3). For example, 45.2 percent of low-wage workers working more than 40 hours a week and 35.4 percent of those working 35 to 40 hours a week in 2001 were in higher-wage jobs in 2003, compared with 23.6 percent of those working between 20 and 34 hours a week. Those employed by larger firms (100 or more workers) were also more likely than those in smaller firms to hold a higher-wage job in 2003. A worker's occupation and industry in January 2001 is also associated with wage status in January 2003. Those working in administrative or professional occupations were more likely to be in a higher-wage job in January 2003 than those working in service occupations (40.0–48.3 percent versus 23.7 percent). Similarly, more than 40 percent of those working in the construction, transportation, finance, and public administration industries were in higher-wage jobs in 2003, compared with less than 30 percent of those working in agriculture and retail/wholesale trade industries.²⁵

In addition to more static factors, it is possible that changes in workers' circumstances influence their future wage status. For ease of exposition, here we compare workers who experienced a specific change with the average low-wage worker. Exhibit IV-4 shows how changes in educational attainment and work limitation status are related to wage progression. Low-wage workers who started attending college between 2001 and 2003 are less likely to work in higher-wage jobs in 2003 than the average low-wage worker (26.7 percent versus 34.1 percent). This almost certainly is due to workers leaving the workforce to attend college, along with workers retaining low-wage, low-hour jobs to balance work and school. In contrast, 65.3 percent of low-wage workers who completed college between 2001 and 2003 held higher-wage jobs in 2003. The exhibit also shows that low-wage workers that experienced the onset of a health-related work limitation were far less likely to be in a higher-wage job in 2003 than the average low-wage worker (12.8 percent versus 34.1 percent). Meanwhile, low-wage workers who had a health-related work limitation in 2001 but not in 2003 were not significantly less likely than the average low-wage worker to hold down higher-wage jobs in 2003 (30.5 percent versus 34.1 percent).

²⁵ Similar to our findings, Schochet and Rangarajan (2004, 103–04) report that full-time work status and working in professional, clerical, and administrative positions are associated with movement into higher-paying jobs for the 1996 to 1999 period. Unlike our analysis, they find no differences across industries.

Exhibit IV-4: Probability of Becoming a Moderate- or High-Wage Worker, by Change in Worker Characteristics

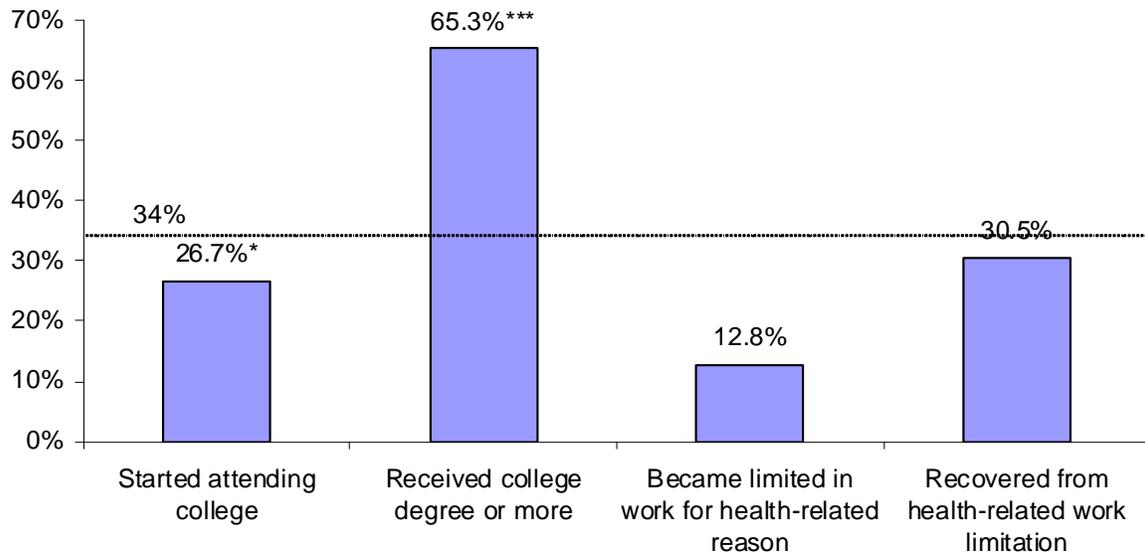
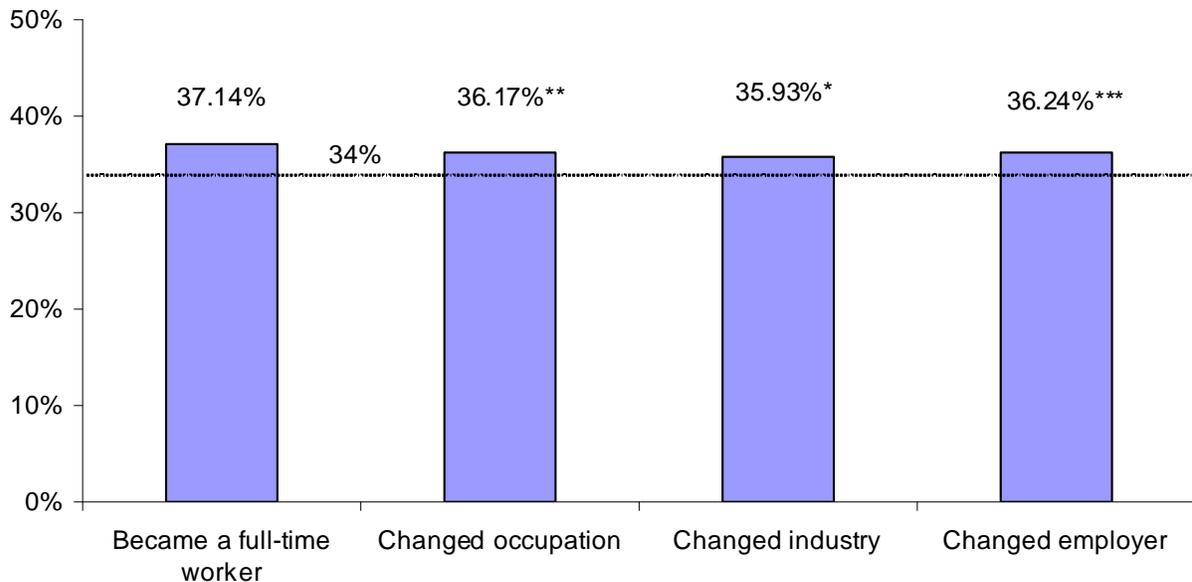


Exhibit IV-5: Probability of Becoming a Moderate- or High-Wage Worker, by Change in Job Characteristics



Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Those making more than \$8.63 in 2001 dollars are considered moderate- and high-wage workers. 34 percent of all low-wage workers in January 2001 are moderate- or high-wage workers in January 2003.

Statistical significance is calculated on the difference between those with each characteristics and everyone else (e.g., those who received a college degree versus those who did not). * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

Exhibit IV-5 shows the association between changes in low-wage workers' job characteristics and their wage status. Low-wage workers who moved from part-time to full-time work between 2001 and 2003 were slightly more likely to be in higher-wage jobs in 2003 than the average low-wage worker (37.1 percent versus 34.1 percent), although the difference is not statistically significant. Those who changed employers were slightly but significantly more likely than the average low-wage worker to hold higher-wage jobs in 2003 (36.2 percent versus 34.1 percent). This holds true even if the workers changed occupations and industries.

How Much Do Wages Grow Over Time?

It is important to remember that even if a low-wage worker in 2001 remained a low-wage worker in 2003, that worker may have experienced substantial wage growth; conversely, even if a low-wage worker crosses the threshold to higher-wage employment, his or her actual wage growth may not have been particularly large. In exhibit IV-6, we consider the growth in wage of low-wage workers who were employed in both January 2001 and January 2003.

**Exhibit IV-6: Change in Wage Rate among Low-Wage Workers in January 2001
Who Are Working in January 2003**

	January 2001 (\$)	January 2003 (\$)	Change 2003 to 2001 (\$)	Percent Change 2003 to 2001 (%)	Sample Size
All	6.59	9.82	3.22	48.9	4,661
Unmarried mothers	6.64	8.40 ***	1.77	26.6	557
Less-educated black males	6.80	8.69 ***	1.89	27.8	144
In low-income families	6.32 ***	8.71 ***	2.39	37.9	2,170
Unmarried mothers in low-income families	6.58	8.17 ***	1.59	24.2	445

Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold.

Each subgroup of low-wage workers' wage rate in 2001 is statistically significantly different (at the $p < 0.01$ level) from their wage rate in January 2003. In the January 2001 and January 2003 columns, statistical significance markers indicate whether the wage rate for that subgroup in that month is statistically significantly different from the wage rate of the rest of low-wage workers in the sample in that month. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

On average, low-wage workers in 2001 who were also employed in 2003 earned \$6.59 in 2001.²⁶ By 2003, this group of workers earned on average \$9.82 an hour. This is an increase of almost 50 percent. By definition, this excludes the quarter of low-wage workers in 2001 who are not working in 2003.²⁷

Although the average hourly wages of key subgroups of low-wage workers in 2001 were similar, growth in average wages between 2001 and 2003 for these key subgroups was substantially lower than for all low-wage workers. Average wages in 2001 for those working in 2003 were similar across subgroups, although less-educated black men had a somewhat higher average wage (\$6.80) and workers in low-income families had a somewhat lower average wage (\$6.32). Among low-wage unmarried mothers, average wages for those working in 2003 reached \$8.40, 26.6 percent growth. For less-educated black men, average wages in 2003 for those who were low wage in 2001 reached \$8.69, 27.8 percent growth. The wages of low-wage workers in low-income families reached \$8.71, a higher growth rate of 37.9 percent, but still lower than for all low-wage workers.

Multivariate Analyses

Multivariate analyses allow us to separate out the relationship between workers' individual and job characteristics and their wage progression. Consistent with the descriptive analysis, we examine two outcomes: changes in low-wage status and changes in wage rates between January 2001 and January 2003.

Who Moves Out of Low-Wage to Higher-Wage Employment?

Our first set of regression models focuses on changes in wage status and is estimated as logits. If a low-wage worker in January 2001 is a higher-wage worker in January 2003, then the outcome variable equals 1—the worker attained higher wage status. If the worker is not working or is a low-wage worker in January 2003, then the outcome variable equals 0. To better interpret the

²⁶ This wage rate is very similar to the wage rate of \$6.56 for our full sample of low-wage workers in January 2001.

²⁷ Schochet and Rangarajan (2004) report wage growth based on average wages for six-month periods following the start of a low-wage job and report findings separately by gender. In contrast, we report wage growth for all low-wage workers in a specific month (January 2001). As such, it is difficult to directly compare the two reports. In the six months during which a worker is defined to be low-wage in Schochet and Rangarajan (2004), the average wage for men is \$6.31 (in 2001 dollars)—roughly comparable to the \$6.59 we find for low-wage workers in January 2001; two years later, the average wage for employed men is \$9.42 (in 2001 dollars)—comparable to our average wage rate of \$9.82. As such, both studies find wage growth of about 50 percent over a period of about two years for those employed at both points in time.

percentage point increases presented in this section, it is helpful to keep in mind that 34.1 percent of low-wage workers in January 2001 were higher-wage workers in January 2003.

As described in section II, four models are estimated. Model 1 includes workers' personal, family, and job characteristics in January 2001. Model 2 adds a measure of the change in worker's work experience between January 2001 and January 2003. Specifically, the experience measure is the percentage of months spent working over the two-year period. No distinction is made between full-time and part-time work. Model 3 adds variables indicating whether the worker was in a different job in 2003 than in 2001 and whether that new job was in a new occupation or industry. Model 4 considers how changes in low-wage workers' circumstances influence their wage status. Marginal effects calculated from the regressions appear in exhibit IV-7.²⁸

As shown in model 1, we find significant differences in the likelihood that a low-wage worker moves up to be a higher-wage worker depending on their demographic and job characteristics. The likelihood that a male low-wage worker moves to a higher-wage status over a two-year period is 8.8 percentage points higher than that of a woman. Workers between the ages of 20 and 49 are more likely to move up than workers age 50 and older. There are also significant racial and ethnic differences: black and Hispanic low-wage workers are 7.9 and 7.1 percentage points (respectively) less likely to move up than whites.

A low-wage worker's education also affects prospects for advancement. Compared with low-wage workers without high school degrees, those with only high school educations are 7.8 percentage points more likely to move to higher wage status over the two-year study period. In turn, those with college degrees are 10.6 percentage points more likely to advance than those with only high school educations.

By and large, family characteristics like marital status, the number of adults and children present, and presence of a young child are not significantly related to advancement. On the other hand, a worker's health does influence prospects. Those with a health-related work limitation are 10.6 percentage points less likely to be higher-wage workers in 2003 than those without such limitations.

²⁸ The procedure for translating logit coefficients to marginal effects shown as percentage point changes involves generating the predicted probability of becoming a higher-wage worker for each individual in the sample using all their actual characteristics except for the variable of interest. The predicted probabilities are then averaged and compared to the predicted probability of an income drop actually observed in the sample. Actual logit coefficients and standard errors appear in Appendix Exhibit A-1.

**Exhibit IV-7: Estimated Relationship between Change in Wage Status
and Worker and Job Characteristics
Marginal Effects from Logit Models**

	Model 1	Model 2	Model 3	Model 4 ^a
Female	-8.77 [1.55] ***	-7.02 [1.54] ***	-6.79 [1.38] ***	
Age				
Under 20	-4.78 [3.81]	4.70 [4.59]	2.57 [4.34]	-6.29 [6.56]
20 to 29	0.304 [2.17]	4.64 [2.22] **	1.86 [2.19]	-14.1 [5.26] ***
30 to 39	3.48 [2.18]	4.63 [2.15] **	3.09 [2.13]	-10.7 [4.11] ***
40 to 49	7.32 [2.14] ***	7.20 [2.12] ***	5.33 [2.07] **	-6.95 [2.94] **
50 to 64 (omitted category)				
Race/Ethnicity				
Black, non-Hispanic	-7.89 [1.87] ***	-5.61 [1.87] ***	-6.69 [1.8] ***	
Hispanic	-7.07 [1.94] ***	-7.94 [1.88] ***	-8.90 [1.82] ***	
White and other (omitted category)				
Educational Attainment				
Less than high school	-7.82 [1.90] ***	-6.83 [1.90] ***	-7.91 [1.81] ***	-6.79 [7.65]
High school/GED (omitted category)				
Some college	3.91 [1.66] **	5.13 [1.68] ***	7.40 [1.67] ***	6.86 [5.17]
College or more	10.6 [2.51] ***	13.3 [2.62] ***	18.8 [2.49] ***	43.5 [9.84] ***
Married	2.43 [1.50]	1.99 [1.47]	3.79 [1.46] ***	-2.91 [2.47]
Family Characteristics				
Number of children	0.376 [0.667]	0.463 [0.656]	0.396 [0.653]	-0.978 [1.09]
Number of adults	0.547 [0.718]	0.823 [0.728]	0.764 [0.725]	-1.13 [0.931]
Youngest child is under 6 years old	0.106 [1.93]	0.589 [1.91]	0.392 [1.92]	3.41 [2.13]
Has a Health-Related Work Limitation	-10.6 [2.16] ***	-7.04 [2.26] ***	-7.54 [2.21] ***	-3.54 [2.12] *

Continued on next page

**Exhibit IV-7: Estimated Relationship between Change in Wage Status
and Worker and Job Characteristics**

Marginal Effects from Logit Models, continued

	Model 1	Model 2	Model 3	Model 4 ^a
Region of Residence				
East	0.245 [2.65]	0.575 [2.65]	0.182 [2.59]	-0.038 [10.3]
Central	0.245 [2.52]	1.72 [2.55]	1.20 [2.54]	-3.38 [7.79]
West	2.16 [2.17]	4.88 [2.2] **	3.35 [2.16]	-3.65 [8.24]
South (omitted category)				
Lives in Metropolitan Area	7.38 [1.52] ***	8.29 [1.47] ***	8.08 [1.45] ***	0.269 [3.79]
Usual Hours Worked a Week				
Less than 20 (omitted category)				
20 to 34	4.95 [3.66]	2.93 [3.65]	1.69 [3.53]	15.4 [2.35] ***
35 and more	14.3 [2.75] ***	9.91 [2.86] ***	11.4 [2.71] ***	19.5 [2.33] ***
Firm Size				
Less than 25 (omitted category)				
25 to 99	2.64 [1.67]	2.27 [1.66]	2.40 [1.64]	4.20 [1.45] ***
100 or more	6.09 [1.69] ***	4.65 [1.68] ***	6.16 [1.63] ***	4.40 [1.55] ***
Experience and Job Change				
Changed job			7.55 [1.79] ***	
Changed job * changed industry			0.933 [2.01]	
Changed jobs * changed occupations			-0.182 [1.99]	
Experience ^b		3.46 [0.171] ***	3.53 [0.176] ***	2.44 [0.177] ***
Occupation				
Professional/technical	8.82 [2.75] ***	6.89 [2.76] **		12.2 [2.83] ***
Administrative support/clerical	5.52 [2.79] **	2.22 [2.69]		8.26 [2.80] ***
Service professions	-6.32 [2.32] ***	-8.26 [2.23] ***		5.28 [2.63] **
Machine/construction/production/transportation	-1.33 [2.62]	-2.95 [2.53]		12.1 [2.74] ***
Farm/agricultural/forestry and other	-6.89 [6.2]	-7.67 [5.69]		-2.94 [6.78]
Sales/retail (omitted category)				

Continued on next page

**Exhibit IV-7: Estimated Relationship between Change in Wage Status
and Worker and Job Characteristics**

Marginal Effects from Logit Models, continued

	Model 1	Model 2	Model 3	Model 4 ^a
Industry				
Construction	12.1 [4.19] ***	13.3 [4.48] ***		13.6 [4.50] ***
Manufacturing	4.38 [2.80]	6.42 [2.84] **		7.53 [2.97] **
Transportation/communications/utilities	8.12 [3.71] **	12.9 [3.93] ***		3.72 [3.88]
Financial/insurance/real estate	6.68 [3.54] *	8.68 [3.64] **		9.88 [4.09] **
Services	0.509 [1.93]	1.94 [1.93]		6.70 [2.00] ***
Public administration	11.3 [4.28] ***	12.6 [4.31] ***		16.5 [4.74] ***
Agriculture and others	6.66 [6.88]	6.72 [6.93]		14.5 [6.37] **
Wholesale/retail trade (omitted category)				
Economic Characteristics				
Per capita income	0.528 [0.255] **	0.625 [0.251] **	0.033 [0.012] ***	3.04 [1.71] *
Unemployment rate	-2.40 [1.23] *	-2.98 [1.2] **	-0.14 [0.057] **	5.46 [1.47] ***
Employment-to-population ratio	56.5 [49.4]	15.6 [48.7]	0.479 [2.329]	0.362 [114.4]
Observations	6,142	6,142	6,142	6,142

Source: The 2001 SIPP panel.

Notes: The sample consists of low-workers in January 2001 who are also observed in January 2003. A low-wage worker is defined as a worker making less than \$8.63 in 2001 dollars. The dependent variable equals 0 if the worker is not employed or still low-wage in January 2003 and 1 if the worker is a higher-wage worker in January 2003 (wage is above \$8.63 in 2001 dollars). Robust standard errors in brackets. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

a. For models 1 through 3, all demographic, job, and economic variables are as of January 2001. For model 4, all demographic, job, and economic variables are defined as the change in that variable between January 2001 and January 2003. For example, health-related work limitation = 1 if the person did not have a health-related work limitation in 2001 but did in 2003, 0 if the person's health-related work limitation status did not change between 2001 and 2003, and -1 if the person had a health-related work limitation in 2001

b. Experience is measured as the ratio of the number of months worked to the number of months observed in the data between January 2001 and January 2003. The marginal effect shown in the table is the estimated impact of working one additional month.

There is no significant variation in wage advancement across regions of the country; however, low-wage workers who live in metropolitan areas are 7.4 percentage points more likely to advance over a two-year period than those living in nonmetropolitan areas.

Employment circumstances also influence advancement among low-wage workers. Compared with those working less than 20 hours a week, those who usually work 35 or more hours a week are 14.3 percentage points more likely to work in higher-wage jobs after two years. Those in firms employing 100 or more workers are 6.1 percentage points more likely to move up to a higher wage status than those working in firms with fewer than 25 employees. Certain

occupations offer more potential for advancement than others. For example, compared with sales occupations, those working as professionals are 8.8 percentage points more likely to move to a higher wage status in two years, while those in service occupations are 6.3 percentage points less likely to do so. A similar pattern emerges when we consider industry. Compared with those working in wholesale/retail trade, those working in construction are 12.1 percentage points more likely to advance; there is no substantive or significant difference in advancement between those in wholesale/retail trade and those in the service industry.

The stronger the job market, as measured by statewide unemployment rates, the more likely it is for a low-wage worker to advance. A 1 percentage point difference in statewide unemployment rates is associated with a 2.4 percentage point difference in advancement. Higher employment-to-population ratios are not significantly related to advancement. Finally, low-wage workers living in states with higher per capita incomes are more likely to move up to higher wages than those in lower-income states. Each \$1,000 increase in annual state per capita income is associated with 0.5 percentage point increase in the probability that a low-wage worker becomes a higher-wage worker in two years.²⁹

Model 2 adds to the first model a measure of the percentage of time a low-wage worker was employed between January 2001 and January 2003; this provides information on how experience influences advancement. Adding this measure does not substantially affect the estimated relationship between wage advancement and workers' personal, family, and job characteristics described already. Experience is, however, an important indicator of advancement. Our multivariate models suggest that for each additional month of experience over the 24-month period, the chance of advancing to higher wage status rises by 3.5 percentage points.³⁰

Further analyses of low-wage workers' experience show that most of the variation in experience in the sample arises between those who are and are not working in January 2003. For example, among all those working in January 2003, 75 percent worked in at least 23 months of the two-year period regardless of whether they were low-wage or higher-wage workers by the

²⁹ Schochet and Rangarajan (2004) also consider how education, location, race, and hours work influence wage progression in multivariate models and they reach similar conclusions to ours about these factors despite other differences in our models (e.g., we pool by gender while they run separate models for men and women). Unlike us, Schochet and Rangarajan find no significant differences in wage progression by industry of employment.

³⁰ Because marginal effects are computed for one-unit changes in the explanatory variables and experience is measured as a fraction of time ranging from 0 to 1, we approximate the impact of working an additional month by dividing the marginal effect by 24 (for the 24 months in the two-year period).

end of the period.³¹ In sensitivity analyses not shown here, we reestimated model 2 restricting the sample to only those who worked in both January 2001 and January 2003. Results from this model show no statistically significant relationship between work experience and moving into a higher-wage job. Findings from the sensitivity analyses suggest that the estimated effect of work experience presented above (based on the full sample) derives from the relationship between experience and sustained employment: thus, the estimated effect of work experience likely reflects the vastly lower levels of experience accrued by those who are no longer working in January 2003 compared with those still working at the end of the period rather than true incremental benefit of working an additional month.

In model 3, we add variables to see if movement up to a higher wage status is associated with changing jobs. We find that those who change jobs are 7.6 percentage points more likely to move into a higher wage status than those who do not change jobs. Workers benefit from changing jobs even if the new job is in a different occupation or industry, suggesting that the skills acquired on a low-wage job may be easily transferable to other workplace settings and that workers that “get ahead” are more likely to do so by changing jobs than by working their way up the ladder with a given employer. Note also that the estimated effects of the worker’s personal and family characteristics are not greatly influenced by adding the job change variables to the model.³²

In our final model, model 4, we examine whether *changes* in a low-wage worker’s circumstances influence his/her wage progression. As mentioned in section II, factors that do not change over time (e.g., race and gender) are omitted from this model. Another feature of this approach is that it allows us to eliminate any unobserved factors that are correlated with workers’ characteristics as well as changes in wage status. Results from this model show that the key factor associated with advancement to higher-wage job status remains work experience. Again, we find that the more months a low-wage worker spends at work, the greater the likelihood of moving to a higher wage status. Each additional month a worker was employed between January

³¹ There are differences in the lower tails of the experience distributions between those working at low- and higher-wage jobs in January 2003, with higher-wage workers having accumulated more experience. Among those still in low-wage jobs, the bottom 10 percent work less than 70 percent of the months while the bottom 10 percent of those who do move up work over 75 percent of the months.

³² We also estimate models that include indicators of family income: below the poverty threshold, between 100 and 200 percent of the poverty threshold, and above 200 percent of the poverty threshold (omitted category). Compared with low-wage workers in families above 200 percent of the poverty threshold, low-wage workers in poor families are 11.2 percentage points less likely to move to higher-wage jobs and those in families between 100 and 200 percent of the poverty threshold are 8.4 percentage points less likely to move to higher-wage jobs (not shown). The other estimated coefficients in the model are qualitatively similar to those shown in exhibit IV.7.

2001 and January 2003 increases the chances of moving to higher wage status by 2.4 percentage points. That the estimated relationship between experience and wage progression is lower in this change model than in models 2 and 3 likely reflects the importance of unobserved traits that make certain workers both more likely to move up the wage distribution and to work more steadily than other low-wage workers.

Other changes also are associated with advancement. As workers age into their 30s and 40s, the chance of moving into a higher-wage job increases; as they age into their 50s, however, their chance of moving into a higher-wage job falls.³³ Completing a college degree and becoming a full-time worker also contribute to advancement. The probability of advancement is 36.6 percentage points higher for those acquiring college degrees than for those whose educational attainment did not change and 4.1 percentage points higher for those moving from part-time to full-time work than for those whose hours did not change. Experiencing an increase in employer size either through job change or because the employer expands is also associated with advancement. Finally, the onset of a health-related work limitation reduces the prospects for advancement.

Who Experiences Growth in Wages Over Time?

The second set of regressions shows the factors associated with wage growth for low-wage workers, moving beyond a change in status to a higher-wage worker. So a change in the wage rate can be calculated, the sample is limited to low-wage workers in January 2001 who were also employed in January 2003. The models are virtually identical to those examining changes in wage status except the dependent variable is the difference in the natural logs of the hourly wage rates in 2003 and 2001;³⁴ the model is estimated using ordinary least squares. When comparing findings from the wage status regressions and the wage growth regressions it is important to keep in mind that (1) any given absolute change in wage rates will translate into a higher percentage change for those with lower starting wages than for those with higher starting wages and (2) low-wage workers with the highest starting wages are the most likely to change to higher wage status. For example, a worker earning \$6 an hour who moves up to \$7 an hour enjoys a 16.7 percent

³³ These are net effects estimated by combining effects across age categories. For example, to compute the net effect of moving from the 20s to the 30s, one exits the 20s (-1) and enters the 30s (+1). As such the net effect is:

$$(-1)*(-14.1)+(-10.7)=3.4.$$

³⁴ The difference in the natural log of wage rates, $\ln W_{2003} - \ln W_{2001}$, is mathematically equivalent to the natural log of the ratio of wage rates (i.e., wage rate in January 2003 divided by the wage in January 2001)— $\ln(W_{2003}/W_{2001})$. As such, the estimated coefficients approximately show the effects of the variables in terms of the percentage change in wage rates.

wage gain but remains a low-wage worker; a worker earning \$8.50 an hour who moves up to \$9.60 an hour received a larger nominal wage increase (\$1.10 versus \$1) and changed wage status (move out of low-wage), but the wage gain is only 12.9 percent. As such, our wage change regression models tend to emphasize factors that contribute to wage growth among the lowest wage-earners.

Model 1 shows that wage growth varies by personal and job characteristics. Exhibit IV-8 shows that women experience less wage growth than men (12.8 percent) and that blacks and Hispanics experience less growth than whites (8.7 and 11.5 percent, respectively). Although workers between the ages of 40 and 49 experience more growth than those over age 50, there is very little significant difference in wage growth by age.

Education is strongly correlated with wage growth. Compared with workers with high school degrees but no additional schooling, those without high school degrees experience 5.1 percent less wage growth, while those with some college and those with college degrees experience 9.2 percent and 24.1 percent higher wage growth, respectively.

Similarly, low-wage workers who are married experience 3.1 percent higher wage growth than those who are unmarried in 2001. In contrast, family size and the presence of young children do not account for much variation in wage growth. Low-wage workers with a health-related work limitation experience wage growth that is 4.6 percent lower than other low-wage workers, but this difference falls just short of statistical significance.

Workers who live in metropolitan areas have higher wage growth than those in nonmetropolitan areas (7.7 percent), and there are differences across regions as well. For example, wage growth is lower for those in the east than for those in the south. This may be due to the fact that low-wage workers in the south have lower wages than those in the other regions.

Employment circumstances are also correlated with wage growth. Wage growth is 7.1 percent higher for those working full time versus those working fewer than 20 hours a week. Occupation and industry matter for wage growth as well. Wage growth is higher for those working in sales occupations than for those working in administrative, service, and clerical occupations but lower than for those in professional occupations. Compared with most every other industry, wage growth is consistently lower for those in wholesale and retail trade (not shown).

Statewide economic conditions are not strongly correlated with wage growth. Low-wage workers living in states with higher per capita incomes have slightly higher wage growth than

those in states with lower per capita incomes. Variation in the unemployment rate is not significantly associated with wage growth. Surprisingly, higher employment-to-population ratios are associated with slightly lower levels of wage growth.

Exhibit IV-8: Estimated Relationship between Wage Growth and Worker Characteristics

OLS Models

	Model 1	Model 2	Model 3	Model 4 ^a
Female	-0.128 [0.018] ***	-0.129 [0.018] ***	-0.129 [0.016] ***	
Age				
Under 20	-0.052 [0.036]	-0.058 [0.036]	-0.062 [0.036] *	-0.036 [0.079]
20 to 29	-0.003 [0.024]	-0.005 [0.024]	-0.02 [0.025]	-0.197 [0.071] ***
30 to 39	0.036 [0.024]	0.035 [0.024]	0.026 [0.025]	-0.211 [0.062] ***
40 to 49	0.076 [0.024] ***	0.076 [0.024] ***	0.066 [0.025] ***	-0.136 [0.049] ***
50 to 64 (omitted category)				
Race/Ethnicity				
Black, non-Hispanic	-0.087 [0.021] ***	-0.088 [0.021] ***	-0.103 [0.021] ***	
Hispanic	-0.115 [0.021] ***	-0.115 [0.021] ***	-0.128 [0.021] ***	
White and other (omitted category)				
Educational Attainment				
Less than HS	-0.051 [0.019] ***	-0.051 [0.019] ***	-0.063 [0.018] ***	0.069 [0.107]
High school/GED (omitted category)				
Some college	0.092 [0.019] ***	0.092 [0.019] ***	0.118 [0.019] ***	0.086 [0.066]
College or more	0.241 [0.033] ***	0.24 [0.033] ***	0.316 [0.032] ***	0.565 [0.134] ***
Married	0.031 [0.017] *	0.031 [0.017] *	0.046 [0.017] ***	-0.023 [0.030]
Family Characteristics				
Number of children	-0.007 [0.007]	-0.007 [0.007]	-0.008 [0.007]	-0.006 [0.012]
Number of adults	-0.001 [0.007]	-0.001 [0.007]	-0.003 [0.007]	-0.01 [0.010]
Youngest child is under 6 years old	-0.006 [0.021]	-0.006 [0.021]	-0.006 [0.021]	0.042 [0.024] *
Has a Health-Related Work Limitation	-0.046 [0.029]	-0.047 [0.029]	-0.058 [0.029] **	-0.005 [0.026]

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Exhibit IV-8: Estimated Relationship between Wage Growth and Worker Characteristics
OLS Models, continued

	Model 1	Model 2	Model 3	Model 4 ^a
Region of Residence				
East	-0.058 [0.030] *	-0.058 [0.030] *	-0.066 [0.031] **	0.161 [0.144]
Central	0.002 [0.029]	0.002 [0.029]	-0.008 [0.029]	0.189 [0.114] *
West	-0.013 [0.023]	-0.014 [0.023]	-0.029 [0.023]	0.166 [0.116]
South (omitted category)				
Lives in Metropolitan Area				
	0.077 [0.017] ***	0.077 [0.017] ***	0.08 [0.017] ***	0.017 [0.044]
Usual Hours Worked a Week				
Less than 20 (omitted category)				
20 to 34	0.036 [0.036]	0.036 [0.036]	0.03 [0.035]	-0.072 [0.034] **
35 and more	0.071 [0.033] **	0.073 [0.033] **	0.087 [0.033] ***	-0.048 [0.035]
Firm Size				
Less than 25 (omitted category)				
25 to 99	0.007 [0.018]	0.007 [0.018]	0.004 [0.018]	0.031 [0.017] *
100 or more	0.027 [0.018]	0.027 [0.018]	0.033 [0.018] *	0.047 [0.018] ***
Experience and Job Change				
Changed job			0.029 [0.021]	
Changed job * changed industry			0.013 [0.022]	
Changed jobs * changed occupations			-0.001 [0.022]	
Experience ^b		-0.046 [0.054]	-0.016 [0.056]	0.024 [0.054]
Occupation				
Professional/technical	0.092 [0.033] ***	0.092 [0.033] ***		0.043 [0.038]
Administrative support/clerical	-0.067 [0.031] **	-0.066 [0.031] **		0.046 [0.031]
Service professions	-0.073 [0.027] ***	-0.072 [0.027] ***		-0.082 [0.032] ***
Machine/construction/production/transportation	-0.091 [0.032] ***	-0.091 [0.032] ***		0.021 [0.034]
Farm/agricultural/forestry and other	-0.088 [0.076]	-0.089 [0.076]		-0.075 [0.078]
Sales/retail (omitted category)				

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Exhibit IV-8: Estimated Relationship between Wage Growth and Worker Characteristics
OLS Models, continued

	Model 1	Model 2	Model 3	Model 4 ^a
Industry				
Construction	0.153 [0.053] ***	0.152 [0.053] ***		0.073 [0.069]
Manufacturing	0.052 [0.031] *	0.052 [0.031] *		0.088 [0.034] ***
Transportation/communications/utilities	0.154 [0.045] ***	0.153 [0.045] ***		0.04 [0.046]
Financial/insurance/real estate	0.083 [0.049] *	0.083 [0.049] *		0.046 [0.053]
Services	0.021 [0.020]	0.02 [0.020]		0.042 [0.024] *
Public administration	0.146 [0.051] ***	0.147 [0.051] ***		0.112 [0.064] *
Agriculture and other	0.064 [0.072]	0.065 [0.072]		0.124 [0.064] *
Wholesale/retail trade (omitted category)				
Economic Characteristics				
Per capita income	0.01 [0.003] ***	0.01 [0.003] ***	0.011 [0.003] ***	-0.014 [0.021]
Unemployment rate	-0.016 [0.014]	-0.015 [0.014]	-0.013 [0.014]	0.021 [0.018]
Employment-to-population ratio	-1.166 [0.571] **	-1.153 [0.571] **	-1.231 [0.578] **	-1.601 [1.416]
Constant	0.544 [0.295] *	0.583 [0.300] *	0.521 [0.303] *	0.206 [0.062] ***
Observations	4,678	4,678	4,678	4,678
R-squared	0.13	0.13	0.11	0.03

Source: The 2001 SIPP panel.

Notes: The sample consists of low-workers in January 2001 who are also working in January 2003. Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. The dependent variable is the natural log of the wage rate in January 2003 divided by the wage rate in January 2001 [$\ln(W_{2003} / W_{2001})$]. Robust standard errors in brackets. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

a. For models 1 through 3, all demographic, job, and economic variables are as of January 2001. For model 4, all demographic, job, and economic variables are defined as the change in that variable between January 2001 and January 2003. For example, health-related work limitation = 1 if the person did not have a health-related work limitation in 2001 but did in 2003, 0 if the person's health-related work limitation status did not change between 2001 and 2003, and -1 if the person had a health-related work limitation in 2001 but not in

b. Experience is measured as the ratio of the number of months worked to the number of months observed in the data between January 2001 and January 2003.

Model 2 includes a measure of work experience gained between January 2001 and January 2003. Results from this model suggest that work experience is not an important factor in explaining wage growth. This model, which only includes individuals who are working in both January 2001 and January 2003, produces findings consistent with the change in wage status models estimated on this same population. As noted above, there is only limited variation in the work experience among low-wage workers in January 2001 who are also working in January 2003, particularly compared with the full sample of low-wage workers in January 2001 (working

or not working in January 2003). Roughly 75 percent of the sample for this analysis works in virtually every month over the two-year period, so there is not enough variation in experience levels to detect significant effects. Including experience in the model has little impact on the estimated relationship between other factors and wage growth.

Model 3 also includes measures of job change. Just as the case with experience, the relationship between job change and wage growth overall is not significant, even though job change is positively significantly correlated with changes in wage status. Again, this is likely because of differences in the study samples.³⁵

Finally, we estimate a model (model 4) that considers how changes in a low-wage worker's circumstances influence wage growth. Our key finding is that completing a college degree is strongly associated with wage growth. Experience remains insignificant. Other changes associated with wage growth include aging into one's 40s, moving into the central region, becoming a full-time worker, and leaving a service occupation. Certain industries are also associated with wage growth, but the effect varies by starting industry.

³⁵ As with the wage progression models, we estimate additional models that include indicators of family income: below the poverty threshold, between 100 and 200 percent of the poverty threshold, and above 200 percent of the poverty threshold (omitted category). We find no statistically significant relationship between family income and wage growth (not shown). The other estimated coefficients in the model are qualitatively similar to those shown in exhibit IV.8.

V. LOW-WAGE WORKERS' PROGRESS TOWARD SELF-SUFFICIENCY

Wage growth is the key determinant of workers' progress and is an important indicator of their ability to move up the economic ladder. However, wages and wage growth alone do not provide the full story. They do not tell us about economic well-being and the ability of families to support themselves without assistance from the government. To gain a broader understanding of families' economic well-being, this section examines their earnings (a combination of wages and hours worked), income, government benefit receipt, and self-sufficiency.

As the key goal is to understand families' progress toward self-sufficiency, we focus on low-wage workers who live in low-income families. This subpopulation is of particular interest because increases in these workers' wages can have a relatively large impact on family well-being and because these families are most likely eligible for government supports. Low-wage workers in a high-income family may be secondary earners with less attachment to the labor force and with substantially different labor market experiences than primary earners. As discussed above, less than half (46.4 percent) of low-wage workers are in families with incomes below 200 percent of the poverty threshold. Thus, the total low-wage group includes a large number of low-wage workers in higher-income families. In addition to examining all low-wage workers in low-income families, we examine unmarried mothers who are low-wage workers in low-income families. As a group, these families face greater challenges and are more likely to rely on government assistance than married-couple families.

We define these populations based on characteristics in January 2001. We examine changes in their economic outcomes between January 2001 and January 2003, as well as monthly patterns from January 2001 through January 2003. These monthly data show how low-wage worker families' economic circumstances evolve over a two-year period.

Family Income, Earnings, and Changes Over Time

Among low-wage workers in low-income families, average total family income was \$1,649 in January 2001 (exhibit V-1). This monthly income translates into an annualized income of \$19,788, although most of these families do not have steady income across all months of the year. On average, the vast majority of family income is from earnings, and only small amounts

are from government benefits (e.g., TANF and SSI) and other income (e.g., child support and interest income). Specifically, earnings account for 88.9 percent of income (\$1,466), while government benefits and other income account for 3.0 percent (\$50) and 8.1 percent (\$133), respectively. These data show that low-wage workers in low-income families are receiving very little in government benefits and are primarily getting by and supporting themselves with their earnings. Even when the value of food stamps and the EITC is added to income to create an “enhanced income” measure, earnings still make up over 82 percent of income.

**Exhibit V-1: Family Income and Earnings Over Time
Low-Wage Workers in Low-Income Families in January 2001**

	All		Unmarried Mothers	
	January 2001	January 2003	January 2001	January 2003
Worker's Family Income				
<i>Total Income</i>	\$1,649	\$2,445 ***	\$1,515	\$1,885 ***
Earnings	\$1,466	\$2,147 ***	\$1,285	\$1,580 ***
Government benefits	\$50	\$47	\$64	\$68
Other income	\$133	\$252 ***	\$166	\$237 ***
<i>Total enhanced income^a</i>	\$1,786	\$2,573 ***	\$1,723	\$2,081 ***
<i>Income-to-needs ratio</i>	1.23	1.89 ***	1.04	1.33 ***
<i>Earnings-to-needs ratio</i>	1.10	1.65 ***	0.88	1.12 ***
Sample size	2,921		605	

Source: Authors' tabulations of the 2001 SIPP panel.

Notes: Sample consists of low-wage workers in low-income families in January 2001 who are also observed in January 2003. Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold. Statistical significance is calculated between January 2001 and January 2003, within population subgroups. Significance markers on the 2003 value indicates it is statistically significantly different from the 2001 value. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

a. Total enhanced income includes total income plus the value of food stamps and the earned income tax credit.

Unmarried mothers who are low-wage workers in low-income families in January 2001 have somewhat lower incomes and earnings than our broader sample of workers. Their average total family income in January 2001 was \$1,515, which translates into annualized income of \$18,180. This is about 8 percent lower than the annualized income for all low-wage workers in low-income families. In general, the composition of income is similar for this unmarried mother subgroup, with the majority (84.8 percent, or \$1,285) of income coming from earnings. A

comparison of earnings to “enhanced income” shows that working low-wage unmarried mothers in low-income families are somewhat more reliant on government resources than our broader population of low-wage workers in low-income families. Earnings make up 82.1 percent of enhanced income for all low-wage workers in low-income families and 74.6 percent of enhanced income for low-wage, unmarried mothers in low-income families.

Low-wage workers in low-income families in January 2001 experienced an increase in family income and earnings between January 2001 and January 2003. Larger increases occurred among all low-wage workers in low-income families than among the single mother subset. Over the two-year period, the average monthly family income increased by \$796 (from \$1,649 to \$2,445) for all low-wage workers in low-income families and by \$370 (from \$1,515 to \$1,885) for low-wage unmarried mothers in low-income families. Consistent with the dominance of earnings in the composition of income, earnings is the major source of these income increases. The earnings of these low-income families increased despite a slight decline in the average hourly wage rate between 2001 and 2003 (see exhibit III-9). The smaller increase in earnings among low-wage unmarried mothers in low-income families (compared with all low-wage workers in low-income families) may result from having fewer adults in the family who can increase their labor supply and contribute to an increase in earnings.

In addition to family members increasing their hours, changes in family earnings over time could result from changes in family composition—adult workers entering or exiting families. At the same time, the number of children in these families, and thus family needs, may also be changing. To account for changes in family size, we examine families’ income and earnings relative to family need, as determined by the poverty thresholds.³⁶ We refer to these two ratios as the income-to-needs ratio and earnings-to-needs ratio. By and large, the income-to-needs ratio and earnings-to-needs ratio show the same patterns as income and earnings. Low-wage workers in low-income families have an income-to-needs ratio in 2001 of 1.2, while unmarried working mothers in low-income families have a ratio of 1.0. Since earnings are only a percentage of income, earnings-to-needs ratios are lower (1.1 and 0.9, respectively), but their similarity reflects the large percentage of income that comes from earnings. The improvement in income and earnings between 2001 and 2003 for both groups translates into increases in the income and earnings ratios, even taking into account changes in family composition. For low-wage workers in low-income families, the income-to-needs ratio increases from 1.2 in 2001 to 1.9 in 2003.

³⁶ Because we examine monthly income, we divide the poverty threshold by 12. The annual poverty threshold for a family of four with two adults and two children, for example, was \$17,960 in 2001 (and \$21,834 in 2008).

We also examine trends in the composition of income over time using the monthly data from January 2001 through January 2003. Exhibit V-2 shows that family income closely follows family earnings, while family government benefits and other family income are flat across the two-year period. For both populations, earnings and income increase quite steadily between January 2001 and August 2001, then flatten out. An analysis of family income-to-needs and earnings-to-needs ratios shows a similar pattern over time (exhibit V-3).

This rise in family earnings in the first half of 2001 is not explained by a strengthening economy, as the United States experienced a recession from March 2001 to November 2001 (National Bureau of Economic Research 2009). However, the selection of our study population could lead to these descriptive patterns. Defining the study population as low-wage workers in low-income families in January 2001 has the potential to capture some workers and families who are experiencing a temporary downturn in earnings and income. If this is the case, the observed earnings increases between January 2001 and August 2001 could reflect families returning to their more steady-state level of earnings.

Additional data analyses suggest that these initial increases in earnings are, in large part, the result of families returning to their prior and more steady-state level of earnings. While the 2001 SIPP panel does not provide the data to analyze trends in family earnings before January 2001, we define a population of low-wage workers in low-income families in *January 2002* and examine their earnings and income in the prior and subsequent 12 months. Exhibit V-4 shows that the earnings-to-needs ratio dips in the months before January 2002 and rises in subsequent months. This pattern suggests that some of the improvements over time are families rebounding to an earlier income level. This fact alone is important, as it shows that families that hit rough patches are recovering.

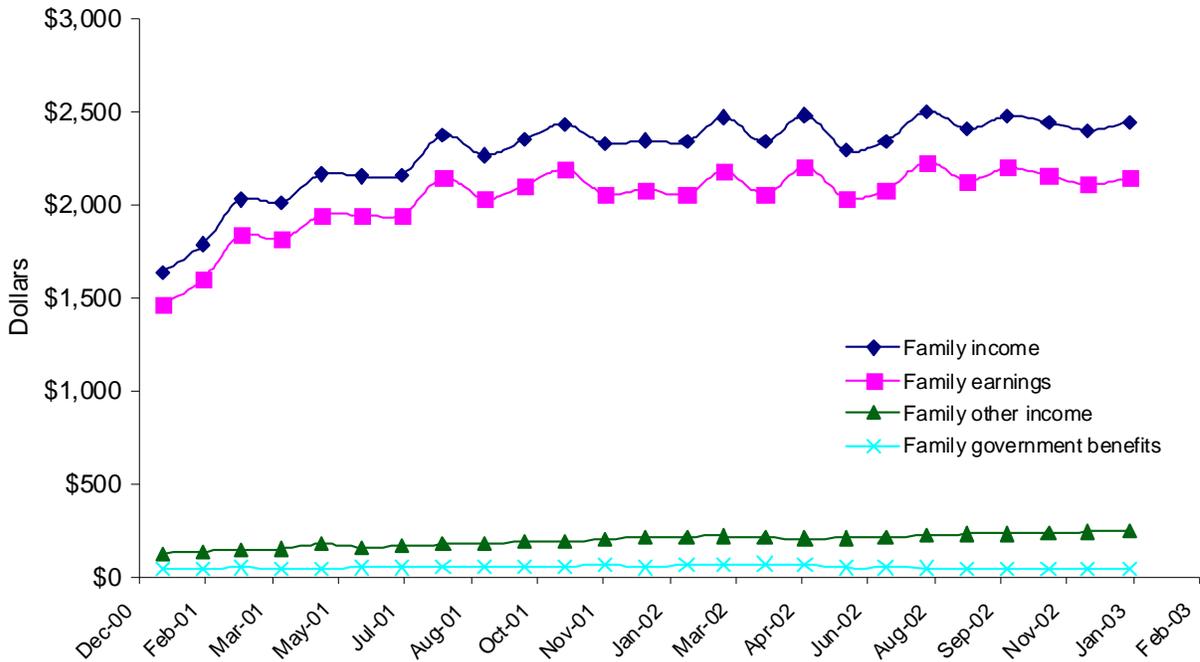
Family Receipt of Government Support and Change Over Time

The vast majority of low-wage workers in low-income families do not receive government benefits or work supports.³⁷ In January 2001, only 4.8 percent of low-wage workers in low-income families received TANF, and the average monthly benefit (among recipient families) was relatively modest at \$308 (exhibit V-5). Not surprisingly, low-wage unmarried mothers in low-income families are more likely to receive TANF, although TANF recipients are still in the

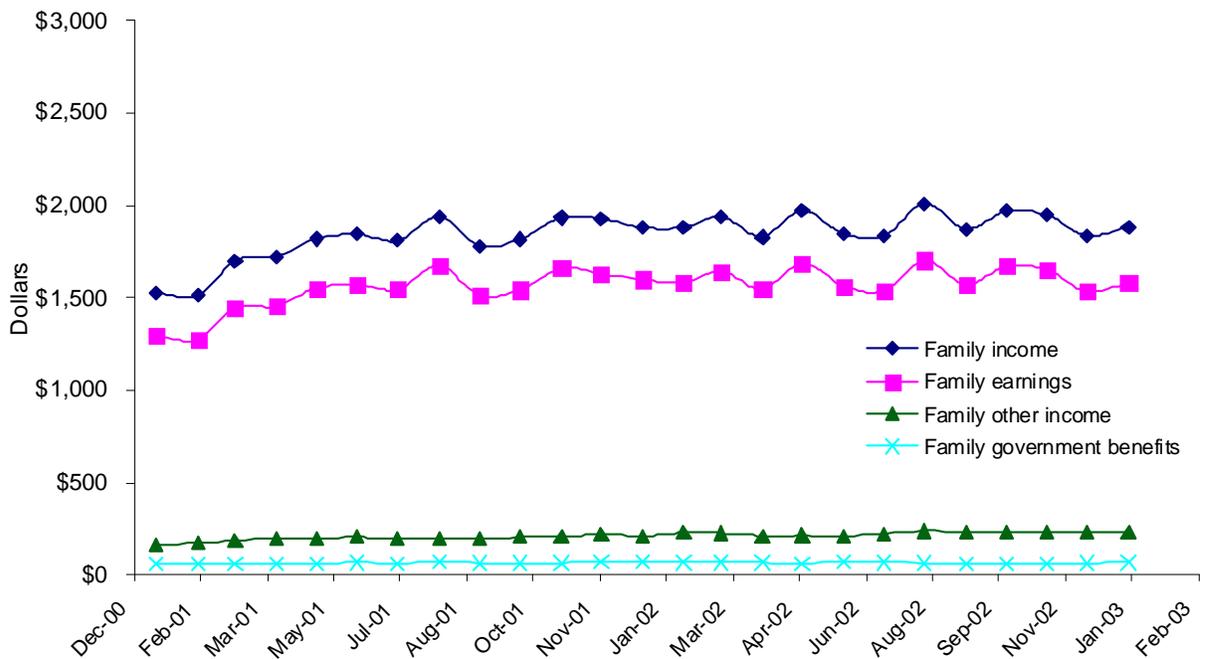
³⁷ As discussed in the data section, reported rates of government benefit receipt may be below the true rates because SIPP respondents may underreport their receipt of government benefits. However, benefit receipt rates would still be low (with the exception of food stamps) even if the true benefit receipt rates were twice as high as the reported rates.

Exhibit V-2: Family Income, Earnings, and Government Benefits Over Time

Low-Wage Workers in Low-Income Families in January 2001



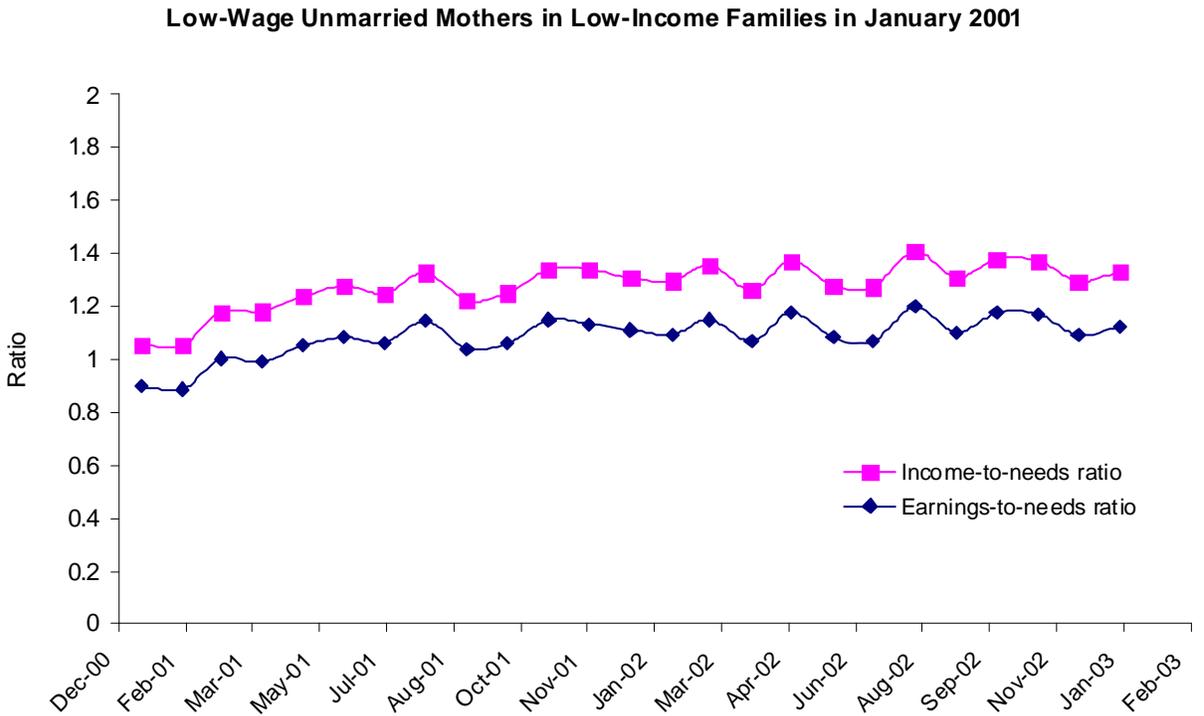
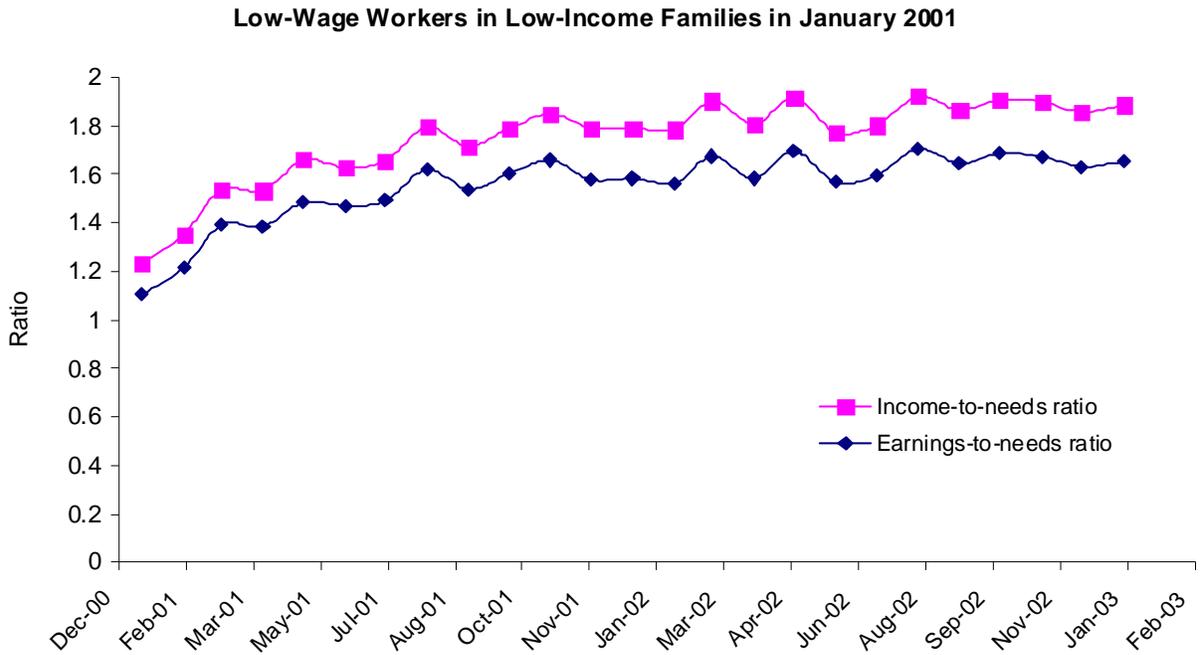
Low-Wage Unmarried Mothers in Low-Income Families in January 2001



Source: Authors' tabulations of the 2001 SIPP panel.

Note: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold.

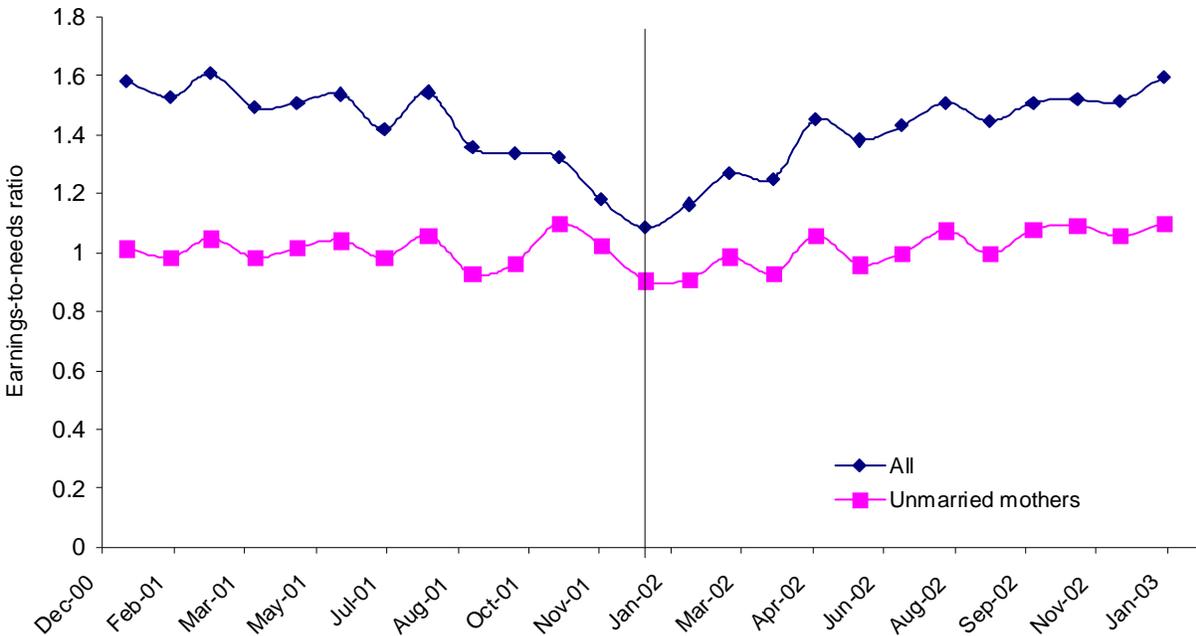
Exhibit V-3: Earnings-to-Needs and Income-to-Needs Ratios Over Time



Source: Authors' tabulations of the 2001 SIPP panel.

Note: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold.

Exhibit V-4: Earnings-to-Needs Ratio Over Time
Low-Wage Workers in Low-Income Families in January 2002



Source: Authors' tabulations of the 2001 SIPP panel.

Note: Workers in 2002 making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold.

minority—only 10.7 percent receive TANF, and the average monthly benefit is \$312. An even smaller percentage of both populations received TANF in January 2003.

Families are substantially more likely to receive food stamp benefits than TANF benefits. Fifteen percent of low-wage workers in low-income families received food stamp benefits in January 2001, while 32.0 percent of low-wage unmarried mothers in low-income families received food stamps (exhibit V-5). The average monthly food stamp benefit among recipients was about \$230 for both groups, lower than the average TANF benefit (of roughly \$300). Unlike TANF receipt, families experienced a slight increase in food stamp receipt between January 2001 and January 2003, although the increase is not statistically significant for the unmarried mother subgroup.

Child care and transportation work supports are received by just a tiny fraction of low-wage low-income workers.³⁸ Among all low-wage workers in low-income families in January 2001, only 1.7 percent were in families that received child care assistance and only 0.8 percent were in families that received transportation assistance. While the subpopulation of low-wage unmarried mothers in low-income families had higher rates of receipt, the absolute rates were quite low. In January 2001, child care and transportation assistance were received by 5.3 percent and 2.3 percent, respectively, of these unmarried mothers. Further, both groups of workers experienced

**Exhibit V-5: Receipt of Government Benefits and Work Supports Over Time
Low-Wage Workers in Low-Income Families in January 2001**

	All		Unmarried Mothers	
	January 2001	January 2003	January 2001	January 2003
<u>TANF Receipt</u>				
Percent receiving benefit	4.8	3.2 ***	10.7	7.0 **
Value of benefit if receiving	\$308	\$319	\$312	\$368
<u>Food Stamp Receipt</u>				
Percent receiving benefit	15.2	17.4 **	32.0	33.7
Value of benefit if receiving	\$229	\$227	\$235	\$256
<u>Child Care Assistance</u>				
Percent receiving benefit	1.7	0.7 ***	5.3	2.5 **
<u>Transportation Assistance</u>				
Percent receiving benefit	0.8	0.6	2.3	1.3
<u>Earned Income Tax Credit</u>				
Percent eligible to receive	58.6	49.2 ***	67.0	55.7 ***
Value of benefit if eligible ^a	\$175	\$180	\$198	\$198
Sample Size	2,921		605	

Source: Authors' tabulations of the 2001 SIPP panel.

Notes: The percentages reported in this exhibit are likely lower than the true percentages because SIPP respondents have been shown to underreport receipt of government benefits. Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold. The sample consists of low-wage workers in low-income families in January 2001 who are also observed in January 2003. Statistical significance is calculated between January 2001 and January 2003, within population subgroups. Significance markers on the 2003 value indicates it is statistically significantly different from the 2001 value. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

a. The earned income tax credit is an annual value, but we report a monthly value (annual/12) for ease of comparison with other program benefits.

³⁸ Although the percentage of low-wage workers in low-income families who report receiving child care assistance is quite low, spending on child care subsidies is not. In 2001, about \$11.1 billion was spent on child care subsidies through TANF, Social Service Block Grant (SSBG), and Child Care and Development Fund (CCDF) related programs (including federal and required state matching funds). As mentioned above, research suggests that the SIPP underreports the receipt of child care subsidies by more than 40 percent (Besharov, Morrow, and Shi 2006).

declines in receipt between January 2001 and January 2003, although the declines are statistically significant for child care receipt only.

Most low-wage low-income workers were eligible to receive the EITC in 2001, with higher rates of eligibility among low-wage unmarried mothers in low-income families. While 58.6 percent of all low-wage workers in low-income families were eligible for the EITC, 67.0 percent of low-wage unmarried mothers in low-income families were eligible.³⁹ The higher rate of EITC eligibility among unmarried mothers likely results from differences in family composition. The EITC is primarily targeted at families with children, and many low-wage workers are not in families with children. The average monthly EITC benefit, among those eligible, is also slightly higher among the unmarried mother subgroup. Between 2001 and 2003, both groups experienced a statistically significant decline in the percentage eligible to receive the EITC, although the average benefit among those eligible did not significantly change.

Demographic Characteristics, Economic Conditions, and Self-Sufficiency

This section presents findings from multivariate models that examine the relationship between self-sufficiency and workers' personal and family characteristics, as well as economic conditions. We measure self-sufficiency using the earnings-to-needs ratio, which we call the "self-sufficiency index," defined as the ratio of family earnings to family needs. This self-sufficiency index measures how well families are able to meet basic needs with their earnings alone. Unlike the income-to-needs ratio used to define families' poverty status, for example, the self-sufficiency index excludes government benefits and other sources of income. Increases in the index indicate families are moving to higher levels of self-sufficiency.

We estimate ordinary least squares models, where the dependent variable is the natural log of the self-sufficiency index.⁴⁰ As above, we examine all low-wage workers in low-income families, as well as unmarried mothers who are low-wage workers in low-income families. These

³⁹ Families with multiple children can have incomes below 200 percent of the poverty threshold and be ineligible to receive the EITC. In 2001, for example, families with one adult and three children that had incomes above 190 percent of the poverty threshold were ineligible to receive the EITC. The same was true for families with two adults and two children. Also, some low-income families in our sample were ineligible for the EITC in 2001 because they experienced increases in income and earnings over calendar year 2001. Low-wage workers in low-income families are defined based on their wage rate and income in January 2001. EITC eligibility, however, is calculated based on families' calendar year 2001 income and earnings.

⁴⁰ We add 1 to the self-sufficiency index before taking the natural log because the self-sufficiency index is 0 in some months for some families and the natural log of 0 is undefined. We also estimate all models where we added 0.1 to the self-sufficiency index before taking the natural log, and the results are qualitatively similar (not shown).

two groups are defined based on their characteristics in January 2001, but the multivariate models use the monthly data on these individuals throughout the 2001 SIPP panel.

Overall, many of the demographic characteristics are related to family self-sufficiency among both populations (exhibit V-6). The relationship between these demographic and economic characteristics and families' self-sufficiency is similar for our two populations, so we focus the discussion on the broader population of all low-wage workers, pointing out important differences.

Among low-wage workers in low-income families in January 2001, there are relatively few, although some notable differences by age. Compared with 50- to 64-year-olds, workers age 40 to 49 have significantly higher levels of self-sufficiency, but the self-sufficiency of 16- to 39-year-olds does not significantly differ from this older group. The pattern among the subgroup of unmarried mothers in low-income families differs somewhat, as mothers under age 40 have significantly lower self-sufficiency than those age 50 to 64. For both populations, a comparison of workers under age 20 to those who are older shows that these young workers have significantly lower levels of self-sufficiency than older workers (results not shown in exhibit).

Consistent with wage growth findings in section IV, low-wage minority workers have lower levels of self-sufficiency than their nonminority counterparts. Compared with whites, the self-sufficiency of African Americans and Hispanics is lower by 10.6 percent and 3.8 percent, respectively.⁴¹ Education is found to be an important determinant of self-sufficiency, with higher levels of education associated with higher levels of self-sufficiency. Compared with persons with high school degrees only, the self-sufficiency level of those without high school degrees is 7.3 percent lower, while the self-sufficiency levels of those with some college or college degrees are 6.9 percent higher and 23.0 percent higher, respectively.

Family structure variables are also important determinants of self-sufficiency. Not surprisingly, we see that female-headed households have lower levels of self-sufficiency than married-couple families. The number of adults in the family, the number of children in the family, and the age of the children also play an important role. Having more adults in the family is associated with higher levels of self-sufficiency, while having more children in the family is associated with lower levels of self-sufficiency. These effects are roughly equal and opposite. Each additional adult in the family is associated with roughly a 5.7 percent increase in self-

⁴¹ The "Hispanic" coefficient in the unmarried mother equation is not statistically significantly different from 0.

Exhibit V-6: Estimated Relationship between Self-Sufficiency and Worker Characteristics

	Low-Wage Worker in Low-Income Family	
	All	Unmarried mothers
Age		
Under 20	-0.027 [0.030]	-0.165 [0.062] **
20 to 29	0.022 [0.023]	-0.113 [0.048] **
30 to 39	0.026 [0.022]	-0.111 [0.046] **
40 to 49	0.039 [0.021] *	-0.048 [0.051]
50 to 64 (omitted category)		
Race/Ethnicity		
Black, non-Hispanic	-0.106 [0.012] ***	-0.108 [0.026] ***
Hispanic	-0.038 [0.018] **	-0.038 [0.030]
White and other (omitted category)		
Educational Attainment		
Less than HS	-0.073 [0.011] ***	-0.053 [0.018] ***
High school/GED (omitted category)		
Some college	0.069 [0.019] ***	0.060 [0.029] **
College or more	0.23 [0.042] ***	0.292 [0.081] ***
Family Structure		
Female-headed	-0.129 [0.012] ***	-0.120 [0.026] ***
Male-headed	0.002 [0.025]	0.245 [0.137] *
Married-couple (omitted category)		
Family Characteristics		
Number of adults	0.057 [0.005] ***	0.058 [0.014] ***
Number of children	-0.050 [0.003] ***	-0.058 [0.010] ***
Youngest child under age 6	-0.070 [0.010] ***	-0.039 [0.019] **
Has a Health-Related Work Limitation		
	-0.288 [0.010] ***	-0.261 [0.016] ***
Lives in Metropolitan Area		
	0.073 [0.025] ***	0.061 [0.034] *

Continued on next page

**Exhibit V-6: Estimated Relationship between Self-Sufficiency
and Worker Characteristics, continued**

	Low-Wage Worker in Low-Income Family	
	All	Unmarried mothers
State Economic Characteristics		
Gross domestic product	0.078 [0.029] ***	0.088 [0.039] **
Per capita income	-0.013 [0.009]	0.003 [0.018]
Unemployment rate	0.017 [0.007] **	0.003 [0.010]
Employment population ratio	-0.649 [0.281] **	-0.506 [0.672]
Constant	1.333 [0.599]	0.302 [0.935]
Observations	114,867	23,517
R-squared	0.17	0.22

Source: The 2001 SIPP panel.

Notes: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income than two times the federal poverty threshold. The sample consists of low-wage workers in low-income families in January 2001. The dependent variable is the natural log of the self-sufficiency index plus 1. We add 1 to the self-sufficiency index before taking the natural log because the self-sufficiency index is 0 for some families and the natural log of 0 is undefined. For ease of interpretation, this table presents the percent change implied by the estimated coefficients (and accompanying standard errors) rather than the estimated coefficients. The estimated relationships are simply the exponentiated value of the estimated coefficient minus 1. The models also include year and state fixed effects. Robust standard errors are in brackets. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

sufficiency, while each additional child in the household is associated with a 5.0 percent decline in self-sufficiency. Having a child under age 6 is associated with a 7.0 percent decline in self-sufficiency. All else equal, more children in the family increases family need and, thus, reduces self-sufficiency. More children and younger children in the family can also reduce self-sufficiency by reducing the labor supply of adult family members.

While the magnitudes of family structure effects are substantial, they are small relative to the effect of having a health-related work limitation. Having a health-related work limitation is associated with a 28.8 percent decline in self-sufficiency. This lower level of self-sufficiency could occur because a working-age individual stops working or cannot fully contribute to family income (e.g., limited work hours or restrictions on the type of job they can hold).

Living in a metropolitan area is associated with higher levels of self-sufficiency. We also find that a strong economy, as measured by the gross domestic product, is associated with higher levels of self-sufficiency. However, we find an unexpected positive relationship between the state unemployment rate and self-sufficiency, which suggests that higher unemployment rates are associated with higher levels of self-sufficiency. Finally, the state employment-population ratio and per capita income are not statistically significantly related to self-sufficiency.

VI. LOW-WAGE WORKERS' WORK SUPPORTS AND SELF-SUFFICIENCY

This section examines how well government work supports help low-wage workers in low-income families progress toward self-sufficiency. The key goal is to understand whether government-provided child care assistance, transportation assistance, and the EITC help low-wage workers and their families improve their self-sufficiency. That is, is a family better able to progress in the labor market if it receives child care or transportation assistance than if it does not receive assistance? If yes, to what extent are they better off? Have increases in the maximum EITC benefit amount improved families' self-sufficiency? This section sheds light on these questions using descriptive and multivariate analyses.

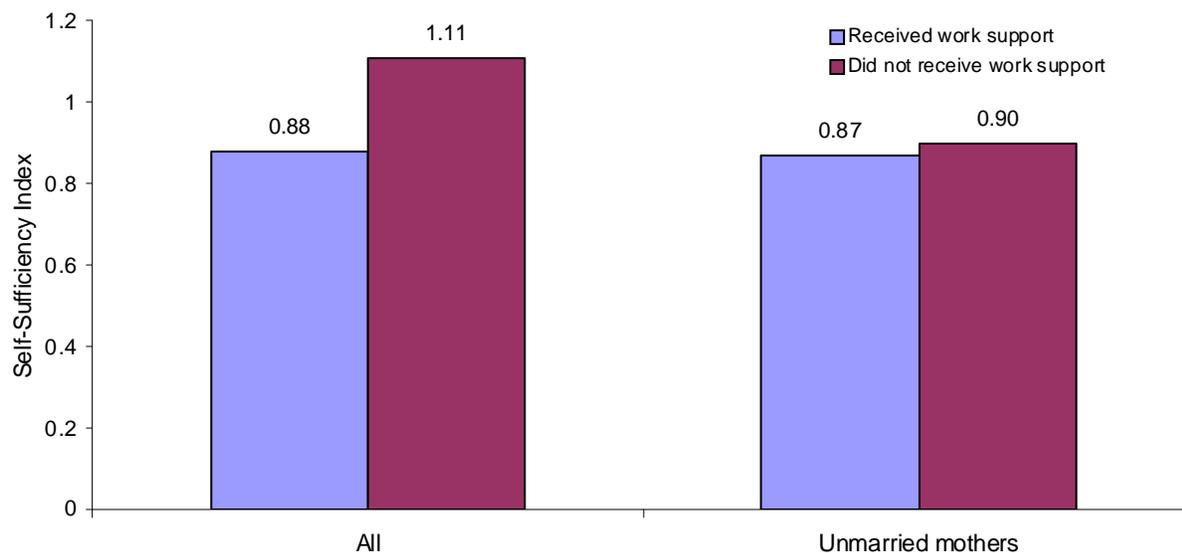
We analyze all low-wage workers in low-income families, as well as unmarried mothers who are low-wage workers in low-income families. These two study populations are defined based on individual and family characteristics in January 2001. We then use the monthly data throughout the 2001 SIPP panel to analyze the relationship between work support receipt and self-sufficiency for these two populations. The descriptive analysis focuses on two government work supports: child care assistance and transportation assistance. The multivariate analysis also examines the relationship between families' self-sufficiency and policy variables that capture the maximum EITC benefit amounts.

Descriptive Analysis: Does Self-Sufficiency Differ by Receipt of Work Support?

This section descriptively analyzes whether self-sufficiency among low-wage workers in our two populations differs between those who receive child care and/or transportation work supports and those who do not. If work supports help low-wage workers achieve higher levels of self-sufficiency, we might expect higher self-sufficiency levels among work support recipients than nonrecipients. However, among low-wage workers in low-income families in January 2001, the self-sufficiency index was 0.88 for those receiving a work support, while it was substantially higher at 1.11 for those not receiving a work support (exhibit VI-1). The meaning of this simple comparison is not straightforward because people who are most needy are more likely to be eligible for and take up government supports. So it is not clear what this comparison says about the impact of work supports on self-sufficiency. We find less difference in the self-sufficiency

index across those receiving and not receiving work supports for unmarried mothers who are low-wage workers in low-income families—0.87 and 0.90, respectively.

Exhibit VI-1: Self-Sufficiency of Low-Wage Workers in Low-Income Families in January 2001, by Work Support Receipt



Source: Authors' tabulations of the 2001 SIPP panel.

Note: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold.

The analysis is limited to workers in low-income families in order to obtain a more homogeneous population, but there is still a great deal of variation across these families. In order to make more similar comparisons for both the broader group of low-wage workers in low-income families and the group of low-wage working unmarried mothers in low-income families, we divide the populations into three groups based on both work support receipt and family income. The three groups are families that

1. receive a work support (child care or transportation assistance) in January 2001,
2. do not receive a work support in January 2001 and have family income less than 130 percent of the poverty threshold in January 2001, and
3. do not receive a work support in January 2001 and have family income greater than or equal to 130 percent of the poverty threshold in January 2001.

The reasoning behind this breakdown is that lower income nonrecipient families in group 2 may be a better comparison group for recipient families (group 1) than the somewhat higher-income

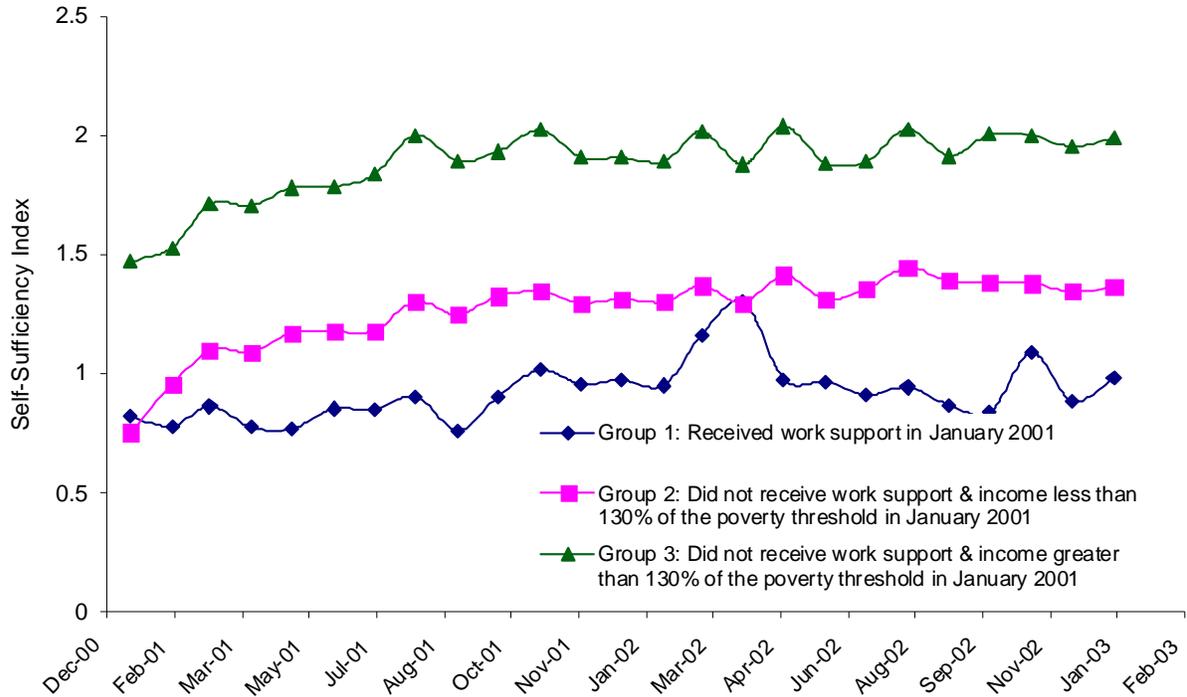
families in group 3. The 130 percent of the poverty threshold cutoff is used because this level of income determines eligibility for some government assistance programs (e.g., food stamps). The self-sufficiency of these three groups is examined each month from January 2001 through January 2003. Because worker status is defined as of January 2001, persons in the “receive a work support in January 2001” group may stop receiving assistance during the subsequent two-year period. In other words, after January 2001, group 1 can include individuals who no longer receive a work support. The reverse is true for groups 2 and 3.

By and large, families that initially receive a work support have lower levels of self-sufficiency than families that do not initially receive a work support (exhibit VI-2). This is true even when comparing the work support group (group 1) with the group not receiving work supports that has income below 130 percent of the poverty threshold (group 2). The latter have a higher level of self-sufficiency in the vast majority of months across the two-year period. The difference between the two groups is greater for the sample of all low-wage workers in low-income families (top panel) than unmarried mothers who are low-wage workers in low-income families (bottom panel).

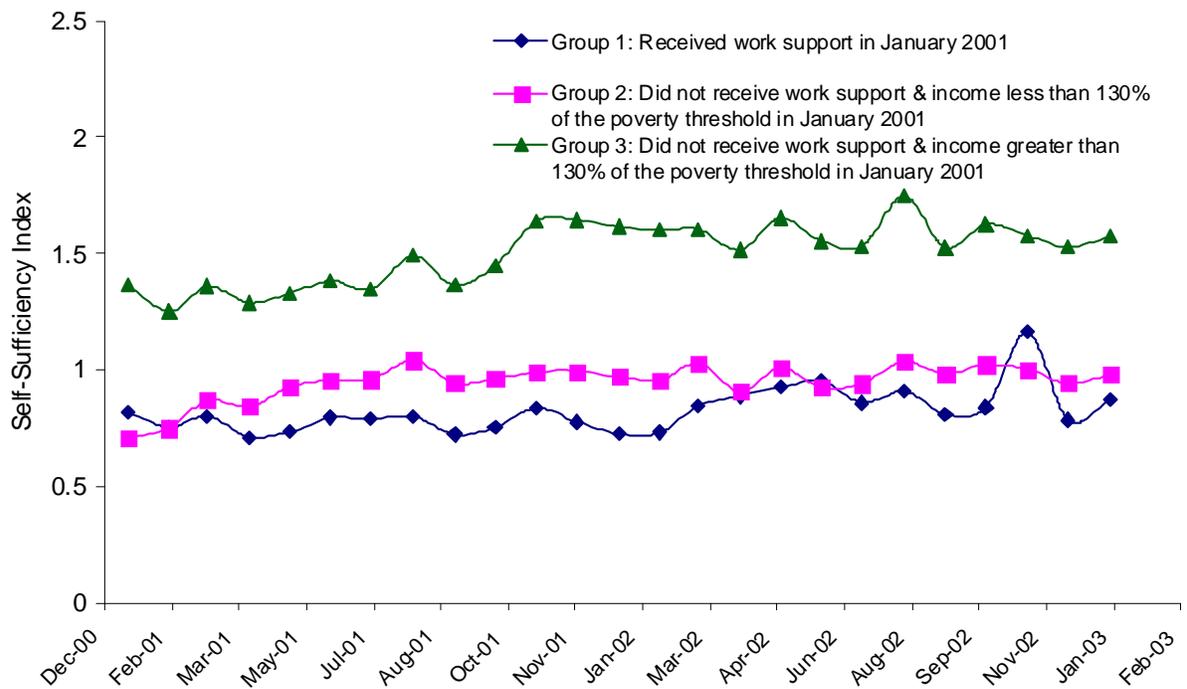
Although families receiving work supports have lower self-sufficiency in most months, their self-sufficiency index in January 2001 is very similar to families not receiving supports with lower incomes (group 2). The primary difference in the pattern between these two groups is the rise in the self-sufficiency index among nonrecipients in the first three to six months after January 2001. The difference in patterns likely results from the select nature of the two populations. As discussed in section V, some low-wage low-income families experience temporary earnings drops in the months just before when the sample was defined (January 2001), and then return to their higher earlier earnings levels in the subsequent months. Work support recipients, however, are less likely to have had these temporary income drops. Two possible reasons are that (1) it takes time to apply for and begin receiving work supports, so it is unlikely that the low-income circumstances are of short duration; and (2) families with transient drops in earnings are less likely to take the time to apply for work support benefits because the expected length of receipt is short.

Exhibit VI-2: Change in Self-Sufficiency Over Time

Low-Wage Workers in Low-Income Families in January 2001



Low-Wage Unmarried Mothers in Low-Income Families in January 2001



Source: Authors' tabulations of the 2001 SIPP panel.

Note: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold.

Overall, these descriptive statistics show higher levels of self-sufficiency for families that do not receive work supports than families that do receive work supports. The selection of more needy families into government-provided child care and transportation assistance programs makes it difficult to use descriptive analyses to determine whether work supports improve families' self-sufficiency. For this reason, we turn to multivariate analyses that allow us to better control for differences across workers and their families.

Work Supports and Self-Sufficiency: Fixed Effects Approach

In this section we examine the relationship between government work supports and self-sufficiency using both OLS and individual-level fixed effect models. These models include the same demographic and economic characteristics presented in section V, plus variables for the three work support programs: child care receipt, transportation receipt, and the maximum (state plus federal) EITC benefit for a family with two or more children.⁴² This discussion focuses on the relationship between work supports and self-sufficiency, as the estimated coefficients on the demographic and economic variables are virtually identical to those presented above (in exhibit V-6).⁴³ Results from the straightforward OLS model that does not control for the selection of more needy families into work support programs are presented first, followed by results from the individual-level fixed effects model.

For the sample of low-wage workers in low-income families, the basic OLS model results show that child care and transportation receipt are associated with lower levels of self-sufficiency; however, only the coefficient on receipt of transportation assistance is statistically significantly different from 0 (exhibit VI-3, column 1). The magnitude of this variable is relatively large and suggests that receiving transportation assistance is associated with a 19.0 percent decline in self-sufficiency. We find no statistically significant relationship between the EITC and self-sufficiency. This finding may be due to the fact that the data for this analysis are limited to the early 2000s, a time when there were only modest changes to the EITC. It is quite

⁴² As mentioned in section II, we considered including three maximum EITC amounts (for a family with no child, one child, and two or more children), but the variables are too highly correlated to be included in a single model. Preliminary specifications also examined models where these maximum EITC amounts were interacted with number of children in the family (no child, one child, and two or more children), but the estimated coefficients were imprecisely estimated.

⁴³ The full set of coefficients from these models is presented in appendix exhibit A-2.

possible that analyses based on data from the 1990s (when large EITC expansions occurred) through the mid-2000s would find that the EITC increases self-sufficiency.⁴⁴

**Exhibit VI-3: Estimated Relationship between Self-Sufficiency and Work Supports
OLS and Individual-Level Fixed Effect Models**

	OLS Models		Fixed Effect Models	
Low-Wage Workers in Low-Income Families in January 2001				
	All	Unmarried mothers	All	Unmarried mothers
Child care assistance receipt	-0.005 [0.020]	0.026 [0.023]	0.020 [0.018]	0.036 [0.021] *
Transportation assistance receipt	-0.190 [0.030] ***	-0.167 [0.031] ***	-0.074 [0.024] ***	-0.053 [0.034]
EITC Maximum for families with two or more children (federal + state)	-0.005 [0.006]	0.001 [0.007]	0.002 [0.005]	0.000 [0.010]
Observations	114,867	23,517	114,867	23,517
R-squared	0.17	0.22	0.61	0.62

Source: The 2001 SIPP panel.

Notes: The sample consists of low-wage workers in low-income families in January 2001. Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold. The dependent variable is the natural log of the self-sufficiency index plus 1. We add 1 to the self-sufficiency index before taking the natural log because the self-sufficiency index is 0 for some families and the natural log of 0 is undefined. For ease of interpretation, this table presents the percent change implied by the estimated coefficients (and accompanying standard errors), rather than the estimated coefficients. These values are simply the exponentiated value of the estimated coefficient minus 1.

Models also control for age under 20, age 20 to 29, age 30 to 39, age 40 to 49, black non-Hispanic, Hispanic, less than high school education, some college education, college or more, female-headed household, male-headed household, number of adults, number of children, youngest child under 6, has a health-related work limitation, lives in metropolitan area, gross domestic product, per capita income, unemployment rate, employment-population ratio, and year and state fixed effects. Robust standard errors are in brackets. * = p < 0.1, ** = p < 0.05, *** = p < 0.01.

Restricting the sample to the subgroup of unmarried mothers in low-income families produces similar results. As above, we find no statistically significant relationship between child care receipt and level of self-sufficiency, nor do we find a statistically significant relationship between the EITC and self-sufficiency (exhibit VI-3, column 2). The results do, however, show a negative and statistically significant relationship between transportation assistance receipt and self-sufficiency, with a magnitude similar to that reported for the broader population of low-wage workers. Specifically, transportation assistance receipt is associated with a 16.7 percent decline in self-sufficiency.

⁴⁴ We expect that more years of data would produce a positive and statistically significant relationship between the EITC and self-sufficiency because a broad literature finds that the EITC increases employment and earnings (e.g., Dahl, DeLeire, and Schwabish 2009; Eissa and Liebman 1996; Grogger 2003).

Results from models that include individual-level fixed effects paint a somewhat different picture. Although the findings for the broader population of low-wage workers in low-income families remain largely the same, findings for the subgroup of unmarried mothers differ.

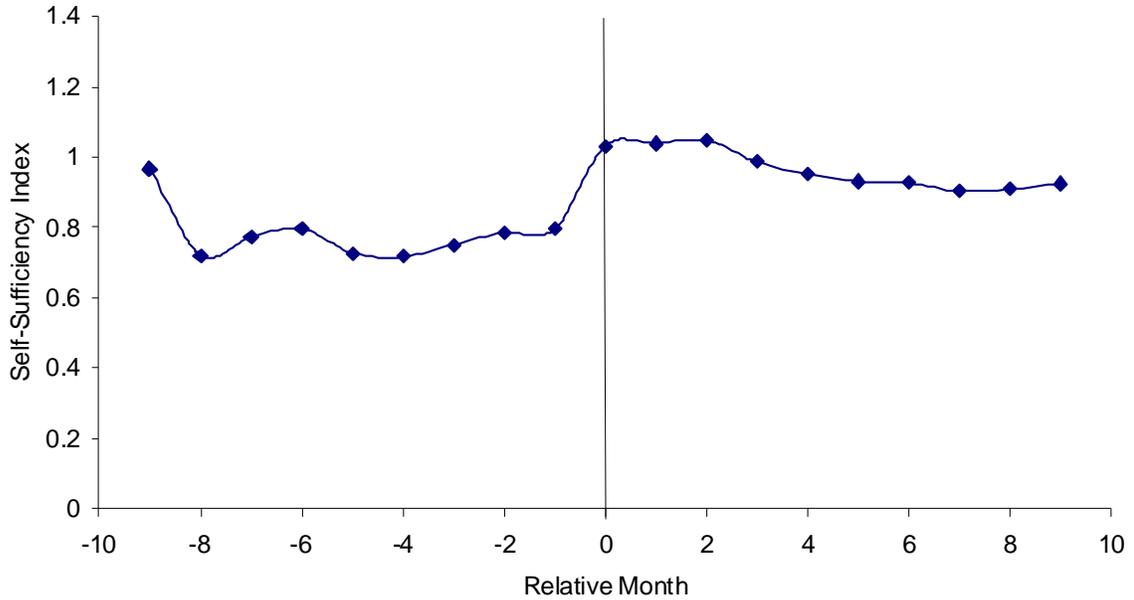
Among all low-wage workers in low-income families in January 2001, we continue to find no statistically significant relationship between child care receipt and self-sufficiency or between the EITC and self-sufficiency (exhibit VI-3, column 3). We find that the negative relationship between transportation assistance receipt and self-sufficiency persists, although the magnitude of the estimated relationship is substantially smaller—7.4 percent (versus 19.0 percent).

Unlike estimates from the OLS model, results from the individual-level fixed effects model estimated on the subsample of low-wage unmarried mothers in low-income families suggest that child care receipt is associated with an increase in self-sufficiency of 3.6 percent (exhibit VI-3, column 4). For a mother with two children living at the federal poverty threshold in 2008 (\$17,346), for example, this would translate into an annual earnings increase of roughly \$625. While this increase in earnings may be considered modest, it should be viewed as a lower-bound estimate, as discussed above. Another difference between the fixed-effect model and the OLS model is the estimated relationship between transportation assistance receipt and self-sufficiency. While the estimated relationship remains negative (compared with the OLS model results), the coefficient is not statistically significantly different from 0.

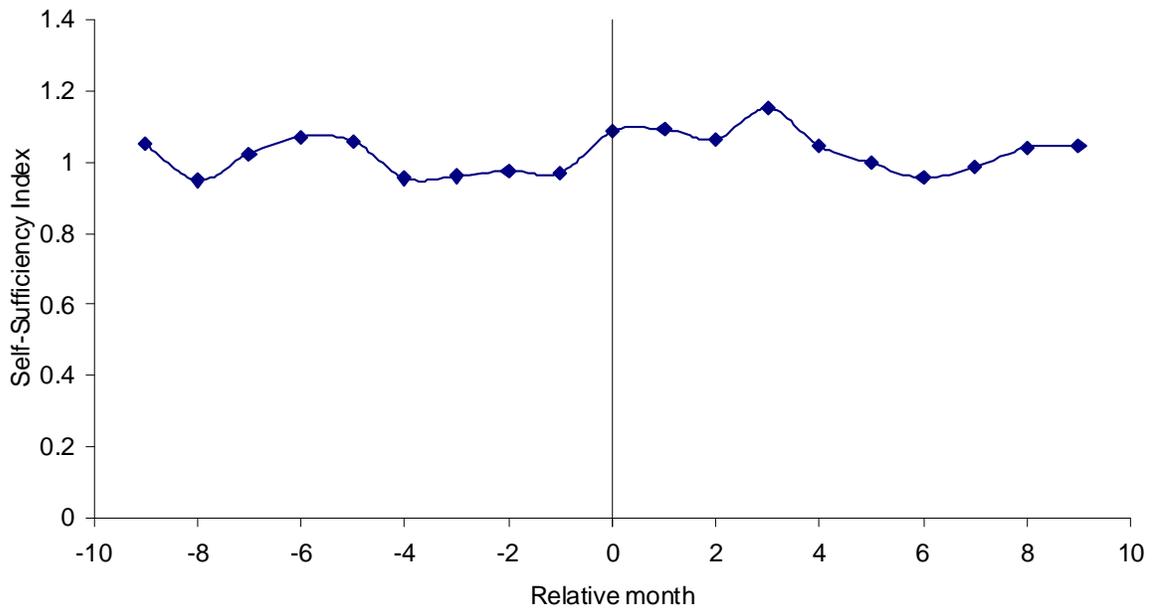
To further examine the relationship of receipt of child care and transportation assistance with family self-sufficiency, we examine patterns of receipt graphically. The estimated coefficients from the individual-level fixed effect model are based on changes within person over time; so, if families tend to lose their assistance as earnings rise, it affects the above results. For example, if families have rising earnings when they receive transportation assistance and earnings continue to rise or flatten when they lose their transportation assistance, it helps to explain the negative and statistically significant relationship between transportation assistance receipt and self-sufficiency—because average earnings are lower when transportation assistance is received versus when transportation assistance is not received. Exhibit VI-4 shows that, on average, self-sufficiency rises in the months leading to termination of transportation assistance and levels off after receipt is terminated. This likely contributes to the pattern found above. The pattern of self-sufficiency for those who stop receiving child care is much flatter.

**Exhibit VI-4: Self-Sufficiency Index of Low-Wage Workers in Low-Income Families
before and after They Stopped Receiving Work Supports**

Stopped Receiving Transportation Assistance at Relative Month Zero



Stopped Receiving Child Care Assistance at Relative Month Zero



Source: Authors' tabulations of the 2001 SIPP panel.

Note: Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold.

Overall, we find evidence that child care assistance increases the self-sufficiency of unmarried mothers who are low-wage workers in low-income families. We do not, however, find evidence in these models that transportation assistance or the EITC increases self-sufficiency. While our next model approach can theoretically address the bias in our estimation for child care and transportation, in practice we are unable to use it to correct for this issue in transportation assistance. The next section focuses on this approach for child care assistance.

Work Supports and Self-Sufficiency: Instrumental Variables Approach

This section examines the relationship between receipt of child care assistance and self-sufficiency using an OLS and IV approach. The empirical models also include the maximum EITC benefit and the demographic characteristics described above. As discussed above, the instrumental variables analysis does not incorporate receipt of transportation assistance.⁴⁵ Because we measure the EITC using the maximum benefit for a family with two children rather than actual receipt, the EITC variable is not endogenous—its value does not reflect a choice made by the worker, so it does not need to be instrumented. To directly compare the IV and OLS results, we reestimate the OLS model excluding receipt of transportation assistance. Results from the OLS model are described first, followed by results from the IV model.

The OLS model results suggest that receipt of child care assistance is associated with lower levels of self-sufficiency among low-wage workers in low-income families (exhibit VI-5).⁴⁶ The estimated coefficient suggests that receiving child care assistance is associated with a 3.7 percent decrease in self-sufficiency. This result is consistent with the descriptive analysis, which shows that people who take up government supports are needier and have lower levels of self-sufficiency. In models estimated on the subpopulation of low-wage unmarried mothers in low-income families, there is no statistically significant relationship between child care receipt and self-sufficiency.

⁴⁵ Receipt of transportation assistance is excluded from the IV model because it is received by a tiny share of our sample, making it difficult to obtain a strong exogenous predictor of receipt that can serve as an instrument. Note that the correlation between receipt of transportation assistance and child care assistance is 0.21 for all low-wage workers in low-income families and 0.22 for low-wage unmarried mothers in low-income families.

⁴⁶ The full set of coefficients from these models is presented in appendix exhibit A-3.

**Exhibit VI-5: Estimated Relationship between Self-Sufficiency and Work Supports
OLS and Instrumental Variable Models**

	OLS Models		IV Models	
Low-Wage Workers in Low-Income Families in January 2001				
	All	Unmarried mothers	All	Unmarried mothers
Family child care receipt	-0.037 [0.020] *	-0.002 [0.025]	8.911 [22.175]	2.602 [3.573]
EITC maximum for families with two or more children (federal + state)	-0.005 [0.006]	0.00 [0.007]	-0.006 [0.008]	-0.004 [0.012]
Observations	114,867	23,517	114,867	23,517
R-squared	0.17	0.22	0.17	0.22

Source: The 2001 SIPP panel.

Notes: The sample is low-wage workers in low-income families in January 2001. Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold. The dependent variable is the natural log of the self-sufficiency index plus 1. We add 1 to the self-sufficiency index before taking the natural log because the self-sufficiency index is 0 for some families and the natural log of 0 is undefined. For ease of interpretation, this table presents the percent change implied by the estimated coefficients (and accompanying standard errors), rather than the estimated coefficients. These values are simply the exponentiated value of the estimated coefficient minus 1.

Models also control for age under 20, age 20 to 29, age 30 to 39, age 40 to 49, black non-Hispanic, Hispanic, less than high school education, some college education, college or more, female-headed household, male-headed household, number of adults, number of children, youngest child under 6, has a health-related work limitation, lives in metropolitan area, gross domestic product, per capita income, unemployment rate, employment-population ratio, and year and state fixed effects. Robust standard errors are in brackets. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

In the IV model, which is designed to obtain a causal estimate of the effect of child care receipt on self-sufficiency, the results do not suggest a negative relationship between child care receipt and self-sufficiency. For both populations, the coefficient on child care receipt is positive but not statistically significant, suggesting no relationship between child care receipt and self-sufficiency. Moving from the OLS to the IV model increases the estimated coefficient on child care receipt many times over. Among all low-wage workers in low-income families, for example, the estimated effect increases from -0.037 to 8.911, respectively. The magnitude of the IV estimate is implausibly large.⁴⁷ The large estimated coefficients on child care receipt occur even though our instrumental variable—state-level child care spending per low-income family—is a significant predictor of families’ child care assistance receipt. For both populations, state child care spending is found to statistically significantly increase child care receipt (at the 5

⁴⁷ We also estimated instrumental variable models with a nonlinear (i.e., probit) first stage of equation, because only a small fraction of people receive child care assistance. These models also find no statistically significant relationship between receipt of child care assistance and self-sufficiency. These estimates are based on the subset of states in which at least one person in our sample is receiving child care assistance.

percent level).⁴⁸ Consistent with findings presented above, we find no evidence that the EITC increases self-sufficiency.

Overall, the IV approach provides limited information on the relationship between receipt of child care assistance and self-sufficiency. The small fraction of low-wage workers that receive child care assistance, coupled with the relatively small estimated effect of child care spending on child care receipt, may make it difficult for our IV approach to provide precise estimates of the effect of child care receipt on self sufficiency.

Summary: Work Supports and Self-Sufficiency

Among low-wage workers in low-income families in January 2001, the level of self-sufficiency was lower for people receiving a work support than for people not receiving a work support. This pattern arises because those who are most needy are more likely to be eligible for and take up government supports. However, this selection of more needy families into work supports makes it difficult to measure the impact of work supports on self-sufficiency. Our multivariate analyses consider two approaches to address this issue of selection. Overall, we find some evidence that receipt of child care assistance increases the self-sufficiency of low-wage unmarried mothers in low-income families. Results from the individual-level fixed effects model suggest that child care receipt is associated with an increase in self-sufficiency of 3.6 percent, or \$625 a year for a single-mother family living at the federal poverty threshold. These values should be viewed as lower-bound estimates of the true effect of child care receipt on self-sufficiency. We do not find evidence that transportation assistance increases self-sufficiency, but because of limitations in our analysis, this is still an open question. Finally, we find no statistically significant relationship between the EITC and self-sufficiency; this finding may be because there were only modest changes to the EITC during the period analyzed.

⁴⁸ The first stage of the IV results is presented in appendix exhibit A-4.

VII. SUMMARY AND DISCUSSION

This study uses data from the 2001 panel of the Survey of Income and Program Participation to document and analyze the dynamics of the low-wage labor market and the role of work supports in helping low-wage workers in the early 2000s. Despite the extended strong labor market of the 1990s and major policy changes, including welfare reform and the expansion of work support programs like the earned income tax credit, the size and composition of the low-wage workforce has remained rather stable over time. In 2001, roughly one-quarter of all 16–64-year-old adults, excluding students, worked in jobs with hourly wage rates that are so low that even full-time, year-round work is insufficient to lift a family of four out of poverty. Specifically, 27 percent of workers earned less than \$8.63 an hour in 2001—the equivalent of \$10.50 in 2008.

We also find that key population subgroups are disproportionately likely to be low wage: 44.6 percent of all working unmarried mothers are low wage; among working less-educated African American men, 35.8 percent are low wage. More than half of workers in low-income families and working unmarried mothers in low-income families are low-wage workers, 59.4 and 63.9 percent, respectively.

To help policymakers better understand the factors that hold low-wage workers back in low-paying jobs as well as those that help them advance up the economic ladder, our study profiles the characteristics of low-wage workers and their jobs, assesses their wage progression over a two-year period, examines their progress towards self-sufficiency over a two-year period, and analyzes the role government-provided work supports play in promoting self-sufficiency. We use various statistical techniques including tabular comparisons and increasingly sophisticated econometric models for our analyses.

The findings in this report indicate that low-wage workers can and do progress to higher-wage jobs. Roughly one-third of low-wage workers in January 2001 were in higher-wage employment two years later. Low-wage workers who are male, white, living in metropolitan areas, working full time, or working in larger firms are significantly more likely to move from low-wage employment to higher-wage employment than those who are not. A low-wage worker's education also affects prospects for advancement. Low-wage workers without high

school degrees are the least likely to advance, followed by those with high school educations only, some college, and college degrees.

Certain occupations offer more potential for advancement than others. Compared with sales occupations, those working as professionals are more likely to move to a higher-wage status, while those in service occupations are less likely to do so. A similar pattern emerges when we consider industry. Compared with those working in wholesale/retail trade, those working in heavy industries like construction and transportation as well those in public administration are more likely to advance.

Experience is a factor for advancement. Our multivariate models suggest that for each additional month of experience over the 24-month period, the chance of advancing to higher wage status rises by 3.5 percentage points. The benefits of experience, in no small part, reflect the fact that those who experienced any months without work over the two-year study period were much less likely to be working, and hence much less likely to hold a higher-wage job, than those low-wage workers who were able to work in almost every month over the study period. We also find evidence that changing jobs is associated with movement to a higher wage status.

Many of the same factors associated with moving from low-wage to higher-wage status are associated with wage growth generally. Low-wage workers who are male, white, with higher levels of education, and working full time are more likely to experience wage growth than those who are not. Wage growth is higher for those working in sales occupations than for those working in service professions but lower than for those in professional occupations. Compared with most every other industry, wage growth is consistently lower for those in wholesale and retail trade.

Gaining work experience is *not* significantly related to overall wage growth for low-wage workers. Although this is somewhat surprising and differs from our analysis of wage status advancement, it is likely due to the sample of low-wage workers included in the analysis. Unlike in the wage status models, only low-wage workers who were employed in both January 2001 and January 2003 were included in the model. This limits the amount of variation in work experience across individuals in this analysis and leads experience to be statistically insignificant in these models of wage growth. Further, there is no significant relationship between changing jobs and wage growth. Just as the case with experience, the relationship between job change and wage growth overall is not significant even though job change is significantly associated with changes in wage status.

Although wage growth is an important indicator of a worker's ability to move up the economic ladder, it does not provide information about the ability of families to support themselves without assistance from the government. To gain a broader understanding of families' economic well-being, we also examine families' level of self-sufficiency, as measured by the earnings-to-needs ratio. Our analysis suggests that low-wage workers in low-income families make progress toward self-sufficiency. Between January 2001 and January 2003, both family earnings and levels of self-sufficiency increased significantly among low-wage workers in low-income families.

Our analysis provides some, although limited, evidence that government-provided work supports promote self-sufficiency. This, in part, is a result of the methodological challenges posed by the fact that those who use work supports are among the more vulnerable low-wage workers. We do, however, find that receipt of child care assistance increases the self-sufficiency of low-wage unmarried mothers in low-income families by 3.6 percent, or \$625 a year for a single-mother family living at the federal poverty threshold. Based on our estimation approach, these values are likely lower-bound estimates of the true effect of child care receipt on self-sufficiency. The results provide no evidence that transportation assistance increases families' self-sufficiency, but this is still an open question due to methodological limitations in our analysis. Finally, we find no evidence that the EITC increases families' self-sufficiency. This finding may be because the data for this analysis are limited to the early 2000s, a time when there were only modest changes to the EITC. It is quite possible that analyses based on data from the 1990s (when large EITC expansions occurred) through the mid-2000s would find that the EITC increases self-sufficiency.

Taken together, the results of this study provide evidence that low-wage workers can progress in wages and the self-sufficiency of their families. However, while some families progress, many families do not. Progress tends to be more limited for low-wage workers who are single mothers and less-educated black men, as well as those in low-income families. Our analysis of movement from a low-wage to higher-wage status suggests that workers who are most likely to progress are those who spend the most time working. The importance of sustained employment for advancement is of particular concern as unemployment and joblessness in 2009 rise to levels not seen in decades. Importantly, we find some evidence that government-provided work supports improve the self-sufficiency of low-wage workers who are unmarried mothers in low-income families. Given the methodological challenges, it is encouraging that our analysis provides some evidence that work supports can improve the well-being of these low-income families.

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IX. APPENDIX TABLES

**Appendix Exhibit A-1: Estimated Relationship Between Change in Wage Status
and Worker Characteristics**

Estimated Coefficients from Logit Models

	Model 1	Model 2	Model 3	Model 4 ^a
Female	-0.391 [0.068] ***	-0.332 [0.072] ***	-0.321 [0.065] ***	
Age				
Under 20	-0.224 [0.186]	0.217 [0.205]	0.121 [0.200]	-0.305 [0.318]
20 to 29	0.014 [0.098]	0.218 [0.102] **	0.0885 [0.103]	-0.684 [0.256] ***
30 to 39	0.155 [0.096]	0.218 [0.099] **	0.146 [0.100]	-0.518 [0.200] ***
40 to 49	0.322 [0.092] ***	0.334 [0.095] ***	0.25 [0.095] ***	-0.337 [0.143] **
50 to 64 (omitted category)				
Race/Ethnicity				
Black, non-Hispanic	-0.374 [0.094] ***	-0.281 [0.098] ***	-0.338 [0.097] ***	
Hispanic	-0.332 [0.095] ***	-0.404 [0.102] ***	-0.456 [0.101] ***	
White and other (omitted category)				
Educational Attainment				
Less than HS	-0.369 [0.094] ***	-0.344 [0.101] ***	-0.402 [0.098] ***	-0.329 [0.372]
High school/GED (omitted category)				
Some college	0.174 [0.073] **	0.241 [0.077] ***	0.345 [0.076] ***	0.333 [0.251]
College or more	0.454 [0.104] ***	0.589 [0.110] ***	0.821 [0.102] ***	1.863 [0.491] ***
Married	0.11 [0.068]	0.095 [0.071]	0.182 [0.071] ***	-0.142 [0.120]
Family Characteristics				
Number of children	0.017 [0.030]	0.022 [0.031]	0.0190 [0.031]	-0.047 [0.053]
Number of adults	0.025 [0.032]	0.04 [0.035]	0.0367 [0.035]	-0.055 [0.045]
Youngest child is under 6 years old	0.005 [0.087]	0.028 [0.091]	0.0188 [0.0912]	0.166 [0.103]
Has a Health-Related Work Limitation	-0.523 [0.117] ***	-0.361 [0.125] ***	-0.389 [0.124] ***	-0.172 [0.103] *

Continued on next page

**Appendix Exhibit A-1: Estimated Relationship Between Change in Wage Status
and Worker Characteristics**

Estimated Coefficients from Logit Models, continued

	Model 1	Model 2	Model 3	Model 4 ^a
Region of Residence				
East	0.011 [0.119]	0.027 [0.126]	0.00873 [0.124]	-0.002 [0.500]
Central	0.011 [0.113]	0.082 [0.120]	0.0571 [0.120]	-0.164 [0.378]
West	0.097 [0.096]	0.229 [0.101] **	0.158 [0.100]	-0.177 [0.400]
South (omitted category)				
Lives in Metropolitan Area				
	0.342 [0.073] ***	0.414 [0.076] ***	0.403 [0.076] ***	0.013 [0.184]
Usual Hours Worked per Week				
Less than 20 (omitted category)				
20 to 34	0.219 [0.159]	0.138 [0.169]	0.0802 [0.166]	0.749 [0.114] ***
35 and more	0.692 [0.145] ***	0.503 [0.155] ***	0.586 [0.151] ***	0.946 [0.112] ***
Firm Size				
Less than 25 (omitted category)				
25 to 99	0.118 [0.074]	0.108 [0.078]	0.114 [0.077]	0.204 [0.070] ***
100 or more	0.27 [0.074] ***	0.219 [0.078] ***	0.289 [0.075] ***	0.214 [0.075] ***
Experience and Job Change				
Changed job			0.363 [0.087] ***	
Changed job * changed industry			0.0446 [0.096]	
Changed jobs * changed occupations			-0.00874 [0.096]	
Experience ^b		3.698 [0.183] ***	3.775 [0.188] ***	2.608 [0.189] ***
Occupation				
Professional/technical	0.384 [0.116] ***	0.318 [0.123] ***		0.594 [0.138] ***
Administrative support/clerical	0.242 [0.120] **	0.105 [0.125]		0.401 [0.136] ***
Service professions	-0.293 [0.111] ***	-0.414 [0.118] ***		0.256 [0.128] **
Machine/construction/production/transportation	-0.06 [0.120]	-0.144 [0.126]		0.586 [0.133] ***
Farm/agricultural/forestry and other	-0.329 [0.317]	-0.401 [0.327]		-0.143 [0.329]
Sales/retail (omitted category)				

Continued on next page

**Appendix Exhibit A-1: Estimated Relationship Between Change in Wage Status
and Worker Characteristics**

Estimated Coefficients from Logit Models, continued

	Model 1	Model 2	Model 3	Model 4 ^a
Industry				
Construction	0.514 [0.170] ***	0.583 [0.184] ***		0.661 [0.219] ***
Manufacturing	0.193 [0.121]	0.295 [0.126] **		0.366 [0.144] **
Transportation/communications/utilities	0.35 [0.154] **	0.568 [0.163] ***		0.181 [0.189]
Financial/Insurance/Real Estate	0.29 [0.148] *	0.391 [0.155] **		0.48 [0.199] **
Services	0.023 [0.087]	0.092 [0.092]		0.325 [0.097] ***
Public administration	0.482 [0.174] ***	0.555 [0.178] ***		0.799 [0.230] ***
Agriculture and others	0.289 [0.289]	0.306 [0.301]		0.706 [0.309] **
Wholesale/retail trade (omitted category)				
Economic Characteristics				
Per capita income	0.024 [0.012] **	0.03 [0.012] **	0.0339 [0.012] ***	0.148 [0.083] *
Unemployment rate	-0.108 [0.055] *	-0.143 [0.057] **	-0.134 [0.058] **	0.018 [5.556]
Employment to population ratio	2.549 [2.228]	0.747 [2.336]	-0.0301 [2.330]	0.018 [5.556]
Constant	-3.089 [1.163] ***	-5.614 [1.217] ***	-5.607 [1.214] ***	-3.275 [0.225] ***
Observations	6,142	6,142	6142	6,142

Source: The 2001 SIPP panel.

Notes: The sample consists of low-workers in January 2001 who are also observed in January 2003. A low-wage worker is defined as a worker making less than \$8.63 in 2001 dollars. The dependent variable equals 0 if the worker is not employed or still low-wage in January 2003 and 1 if the worker is a higher-wage worker in January 2003 (wage is above \$8.63 in 2001 dollars). Robust standard errors in brackets. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.

a. For models 1 through 3, all demographic, job, and economic variables are as of January 2001. For model 4, all demographic, job, and economic variables are defined as the change in that variable between January 2001 and January 2003. For example, health-related work limitation = 1 if the person did not have a health-related work limitation in 2001 but did in 2003, 0 if the person's health-related work limitation status did not change between 2001 and 2003, and -1 if the person had a health-related work limitation in 2001 but not in 2003.

b. Experience is measured as the ratio of the number of months worked to the number of months observed in the data between January 2001 and January 2003.

**Appendix Exhibit A-2: Estimated Relationship between Self-Sufficiency and Work Supports
OLS and Individual-Level Fixed Effect Models**

	OLS Models		Fixed Effect Models	
Low-wage workers in low-income families in January 2001				
	All	Unmarried Mothers	All	Unmarried Mothers
Family child care receipt	-0.005 [0.020]	0.026 [0.023]	0.02 [0.018]	0.036 [0.021] *
Family transportation assistance receipt	-0.19 [0.030] ***	-0.167 [0.031] ***	-0.074 [0.024] ***	-0.053 [0.034]
EITC maximum for families with 2 or more children (federal + state)	-0.005 [0.006]	0.001 [0.007]	0.002 [0.005]	0.00 [0.010]
Age				
Under 20	-0.025 [0.030]	-0.168 [0.062] ***	-0.068 [0.056]	-0.079 [0.121]
20 to 29	0.022 [0.023]	-0.112 [0.048] **	-0.06 [0.041]	-0.089 [0.098]
30 to 39	0.026 [0.022]	-0.111 [0.046] **	-0.068 [0.029] **	-0.134 [0.086]
40 to 49	0.038 [0.021] *	-0.048 [0.051]	-0.048 [0.020] **	-0.111 [0.088]
50 to 64 (omitted category)				
Race/Ethnicity				
Black, non-Hispanic	-0.106 [0.012] ***	-0.109 [0.025] ***	0.00 [0.000]	0.00 [0.000]
Hispanic	-0.038 [0.018] **	-0.038 [0.031]	0.00 [0.000]	0.00 [0.000]
White and other (omitted category)				
Educational Attainment				
Less than HS	-0.073 [0.011] ***	-0.054 [0.018] ***	-0.047 [0.098]	0.091 [0.113]
High school/GED (omitted category)				
Some college	0.069 [0.019] ***	0.06 [0.029] **	0.103 [0.066]	0.067 [0.094]
College or more	0.228 [0.042] ***	0.289 [0.080] ***	0.515 [0.218] **	-0.218 [0.072] ***
Family Structure				
Female-headed	-0.128 [0.012] ***	-0.119 [0.026] ***	-0.089 [0.020] ***	-0.101 [0.025] ***
Male-headed	0.002 [0.025]	0.245 [0.137] *	0.017 [0.037]	0.177 [0.119]
Married-couple (omitted category)				

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**Appendix Exhibit A-2: Estimated Relationship between Self-Sufficiency and Work Supports
OLS and Individual-Level Fixed Effect Models, continued**

	OLS Models		Fixed Effect Models	
	Low-wage workers in low-income families in January 2001			
	All	Unmarried Mothers	All	Unmarried Mothers
Family Characteristics				
Number of adults	0.057 [0.005] ***	0.057 [0.014] ***	0.07 [0.012] ***	0.086 [0.020] ***
Number of children	-0.05 [0.003] ***	-0.057 [0.010] ***	-0.037 [0.007] ***	-0.026 [0.013] **
Youngest child under 6	-0.069 [0.010] ***	-0.039 [0.018] **	-0.036 [0.012] ***	-0.045 [0.020] **
Has a Health-Related Work Limitation				
	-0.287 [0.010] ***	-0.258 [0.016] ***	-0.114 [0.012] ***	-0.09 [0.015] ***
Lives in Metropolitan Area				
	0.073 [0.025] ***	0.061 [0.034] *	0.062 [0.051]	0.042 [0.054]
Economic Characteristics				
Gross domestic product	0.076 [0.028] **	0.089 [0.040] **	0.053 [0.026] **	0.064 [0.033] *
Per capita income	-0.014 [0.009]	0.001 [0.018]	-0.016 [0.009] *	0.01 [0.014]
Unemployment rate	0.017 [0.007] **	0.004 [0.010]	0.022 [0.007] ***	0.005 [0.009]
Employment population ratio	-0.638 [0.299] **	-0.51 [0.673]	0.093 [0.904]	0.352 [1.746]
Year Fixed Effects				
2000	-0.03 [0.028]	0.037 [0.033]	-0.032 [0.027]	0.019 [0.028]
2001	0.013 [0.018]	0.034 [0.022]	0.007 [0.016]	0.017 [0.017]
2002	0.007 [0.011]	0.009 [0.010]	0.005 [0.010]	0.007 [0.009]
2003 (omitted category)				
Constant	1.881 [0.616] *	0.29693 [0.958]	0.840 [0.608]	-0.2039 [0.849]
Observations	114867	23517	114867	23517
R-squared	0.17	0.22	0.61	0.62

Source: The 2001 SIPP panel.

Notes: The sample is low-wage workers in low-income families in January 2001. Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold. The dependent variable is the natural log of the self-sufficiency index plus 1. We add 1 to the self-sufficiency index before taking the natural log because the self-sufficiency index is 0 for some families and the natural log of 0 is undefined. For ease of interpretation, this table presents the percent change implied by the estimated coefficients (and accompanying standard errors), rather than the estimated coefficients. These values are simply the exponentiated value of the estimated coefficient minus 1. Models also control for state fixed effects. Robust standard errors are in brackets. * = p < 0.1, ** = p < 0.05, *** = p < 0.01.

**Appendix Exhibit A-3: Estimated Relationship between Self-Sufficiency and Work Supports
OLS and Instrumental Variable Models**

	OLS Models		IV Models	
	Low-wage workers in low-income families in January 2001			
	All	Unmarried Mothers	All	Unmarried Mothers
Family child care receipt	-0.037 [0.020] *	-0.002 [0.025]	8.911 [22.175]	2.602 [3.573]
EITC maximum for families with 2 or more children (federal + state)	-0.005 [0.006]	0 [0.007]	-0.006 [0.008]	-0.004 [0.012]
Age				
Under 20	-0.026 [0.030]	-0.165 [0.062] **	-0.029 [0.031]	-0.199 [0.072] ***
20 to 29	0.022 [0.023]	-0.113 [0.048] **	0.005 [0.027]	-0.145 [0.054] ***
30 to 39	0.026 [0.022]	-0.111 [0.046] **	0.027 [0.022]	-0.112 [0.048] **
40 to 49	0.038 [0.021] *	-0.048 [0.051]	0.038 [0.022] *	-0.054 [0.050]
50 to 64 (omitted category)				
Race/Ethnicity				
Black, non-Hispanic	-0.106 [0.012] ***	-0.108 [0.026] ***	-0.119 [0.017] ***	-0.11 [0.029] ***
Hispanic	-0.038 [0.018] **	-0.038 [0.030]	-0.028 [0.023]	-0.039 [0.035]
White and other (omitted category)				
Educational Attainment				
Less than HS	-0.073 [0.011] ***	-0.053 [0.018] ***	-0.078 [0.012] ***	-0.053 [0.021] **
High school/GED (omitted category)				
Some college	0.069 [0.019] ***	0.06 [0.029] **	0.064 [0.019] ***	0.055 [0.032] *
College or more	0.23 [0.042] ***	0.292 [0.081] ***	0.243 [0.045] ***	0.332 [0.094] ***
Family Structure				
Female-headed	-0.129 [0.012] ***	-0.12 [0.026] ***	-0.147 [0.021] ***	-0.137 [0.027] ***
Male-headed	0.002 [0.025]	0.245 [0.137] *	0.004 [0.025]	0.267 [0.154] *
Married-couple (omitted category)				
Family Characteristics				
Number of adults	0.057 [0.005] ***	0.058 [0.014] ***	0.066 [0.009] ***	0.073 [0.023] ***
Number of children	-0.05 [0.003] ***	-0.058 [0.010] ***	-0.06 [0.010] ***	-0.06 [0.010] ***
Youngest child under 6	-0.069 [0.010] ***	-0.039 [0.018] **	-0.103 [0.036] ***	-0.068 [0.034] **

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**Appendix Exhibit A-3: Estimated Relationship between Self-Sufficiency and Work Supports
OLS and Instrumental Variable Models, continued**

	OLS Models		IV Models	
	Low-wage workers in low-income families in January 2001			
	All	Unmarried Mothers	All	Unmarried Mothers
<i>Has a Health-Related Work Limitation</i>	-0.288 [0.010] ***	-0.261 [0.016] ***	-0.295 [0.011] ***	-0.277 [0.025] ***
<i>Lives in Metropolitan Area</i>	0.073 [0.025] ***	0.061 [0.034] *	0.065 [0.027] **	0.06 [0.036]
<i>Economic Characteristics</i>	0.078			
Gross domestic product	[0.028] *** -0.013	0.088 [0.039] **	0.069 [0.036] *	0.066 [0.051]
Per capita income	[0.009] 0.017	0.003 [0.018]	-0.003 [0.011]	0.021 [0.024]
Unemployment rate	[0.007] ** -0.625	0.003 [0.010]	0.022 [0.009] **	0.02 [0.018]
Employment population ratio	[0.307] **	-0.505 [0.679]	-0.593 [0.376]	-0.75 [0.348] **
<i>Year Fixed Effects</i>				
2000	-0.032 [0.028]	0.03 [0.032]	-0.051 [0.042]	0.01 [0.041]
2001	0.012 [0.018]	0.03 [0.021]	-0.001 [0.027]	0.024 [0.026]
2002	0.007 [0.011]	0.008 [0.010]	0.006 [0.013]	0.012 [0.012]
2003 (omitted category)				
Constant	1.78 [0.621]	0.30 [0.958]	1.19 [0.619]	0.26 [1.098]
Observations	114867	23517	114867	23517
R-squared	0.17	0.22	0.17	0.22

Source: The 2001 SIPP panel.

Notes: The sample is low-wage workers in low-income families in January 2001. Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold. The dependent variable is the natural log of the self-sufficiency index plus 1. We add 1 to the self-sufficiency index before taking the natural log because the self-sufficiency index is 0 for some families and the natural log of 0 is undefined. For ease of interpretation, this table presents the percent change implied by the estimated coefficients (and accompanying standard errors), rather than the estimated coefficients. These values are simply the exponentiated value of the estimated coefficient minus 1. Models also control for state fixed effects. Robust standard errors are in brackets. * = p < 0.1, ** = p < 0.05, *** = p < 0.01.

**Appendix Exhibit A-4: Estimated Relationship between Child Care Receipt,
State Child Care Spending, and Worker Characteristics
First Stage of the Instrumental Variable model**

	Low-wage workers in low-income families in January 2001	
	All	Unmarried Mothers
State child care spending per capita	0.009 [0.003] **	0.025 [0.011] **
EITC maximum for families with 2 or more children (federal + state)	0.00 [0.001]	0.003 [0.005]
Age		
Under 20	0.001 [0.007]	0.031 [0.049]
20 to 29	0.007 [0.003] **	0.029 [0.013] **
30 to 39	0.00 [0.002]	0.001 [0.007]
40 to 49	0.00 [0.002]	0.005 [0.006]
50 to 64 (omitted category)		
Race/Ethnicity		
Black, non-Hispanic	0.006 [0.004]	0.002 [0.011]
Hispanic	-0.004 [0.002] **	0.001 [0.010]
White and other (omitted category)		
Educational Attainment		
Less than HS	0.002 [0.002]	0.00 [0.007]
High school/GED (omitted category)		
Some college	0.002 [0.003]	0.004 [0.012]
College or more	-0.005 [0.002] **	-0.024 [0.009] **
Family Structure		
Female-headed	0.009 [0.002] ***	0.015 [0.007] *
Male-headed	-0.001 [0.001]	-0.013 [0.014]
Married-couple (omitted category)		
Family Characteristics		
Number of adults	-0.004 [0.001] ***	-0.012 [0.005] **
Number of children	0.004 [0.001] ***	0.002 [0.003]
Youngest child under 6	0.016 [0.004] ***	0.024 [0.011] **

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**Appendix Exhibit A-4: Estimated Relationship between Child Care Receipt,
State Child Care Spending, and Worker Characteristics
First Stage of the Instrumental Variable Model, continued**

	Low-wage workers in low-income families in January 2001	
	All	Unmarried Mothers
<i>Has a Health-Related Work Limitation</i>	0.004 [0.003]	0.018 [0.014]
<i>Lives in Metropolitan Area</i>	0.003 [0.002] *	0.00 [0.008]
<i>Economic Characteristics</i>		
Gross domestic product	0.003 [0.006]	0.016 [0.025]
Per capita income	-0.004 [0.002] **	-0.014 [0.008] *
Unemployment rate	-0.002 [0.001]	-0.012 [0.007] *
Employment population ratio	0.004 [0.202]	0.615 [0.629]
<i>Year Fixed Effects</i>		
2000	0.01 [0.006]	0.018 [0.022]
2001	0.006 [0.004]	0.007 [0.014]
2002	0.001 [0.002]	-0.001 [0.007]
2003 (omitted category)		
Constant	0.073 [0.153]	-0.075 [0.549]
Observations	114867	23517
R-squared	0.03	0.07

Source: The 2001 SIPP panel.

Notes: The sample consists of low-wage workers in low-income families in January 2001. Workers making less than \$8.63 in 2001 dollars are considered low-wage workers. Low-income families are those with income less than two times the federal poverty threshold. Models also control for state fixed effects. Robust standard errors are in brackets. * = $p < 0.1$, ** = $p < 0.05$, *** = $p < 0.01$.