

2-1-2012

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## Recommended Citation

Albelda, Randy and Carr, Michael, "Low-Wage and Low-Income Workers In The U.S., 1979-2009" (2012). *Center for Social Policy Publications*. Paper 60.

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Center for Social Policy Working Paper 2012-1

# **Low-Wage and Low-Income Workers In The U.S., 1979-2009**

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February 2012

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# Low-wage and low-income workers in the US, 1979-2009

## Abstract

Three decades of stagnating earnings for bottom deciles of male wage earners and 1990s anti-poverty policies promoting employment among poor single mothers suggest increases in the ranks of low-wage breadwinners living in low-income households. Low-wage workers often get few employer sponsored benefits, while anti-poverty programs target poor non-earners; these factors suggest low-wage and low-income workers may be unprotected by employer or government supports. Using the Annual Economic and Social Extracts of the Current Population Survey (CPS) from 1980-2010, the authors explore changes in low-income and low-wage earners by gender and family status. The authors find a growth in low-wage and low-income workers for all family statuses over the last three decades, controlling for demographic and human capital characteristics. We also find that for a set of employer and government supports, these workers are the most likely to fall “betwixt and between” eligibility for anti-poverty supports and receiving employer benefits.

This paper examines trends among wage and salary workers who both earn low wages and live in a low-income family. Two concurrent changes draw our attention to this particular group of workers over the last three decades. First is the well-documented increase in earnings inequality since the late 1970s, especially among male full-time workers. Key to this trend is the stagnation of real wages for those in the bottom portion of the earnings scale. The second change concerns reforms to anti-poverty policies directed toward low-income families, in particular single-mother families, during the 1980s and 1990s that strongly promoted employment as a means of alleviating poverty in place of government cash assistance. Together these changes suggest a growth in the number of employed adults that are low wage earners and, if they are the main wage earner in a family, also a member of a low-income family. Low-wage and low-income workers are of particular policy interest because they are at the highest risk of slipping through the cracks of US social and economic protections. In particular, low wage workers are least likely to receive employer-sponsored benefits and, despite their low

income, many may not be eligible for means-tested government anti-poverty support programs. The growth in the level of low-wage and low-income workers both in general and across various types of workers would suggest a re-examination of both employment-based policies and anti-poverty programs.

In our exploration of the trends among and between low-wage and low-income workers, we pay particular attention to gender and family status, including if a worker is a primary adult (family head or spouse of head), the presence of children under age 18, the presence of other non-primary related adults in families, and worker’s marital status. Dividing the sample in this way is particularly useful because, as has been shown elsewhere, the evolution of wages as well as employer benefits and government supports have been quite different for men and women over the last 30 years, the presence of children impacts the earning capacity and income needs of families, *and families consisting of more than one adult have a different earning capacities and income levels than families of two or more adults.*

## At the nexus of being low-wage and low-income

Examining low-wage and low-income workers forces researchers to traverse two different income concepts, sets of literature, and policy formations: those addressing individual earnings and those addressing family income. Explanations of the determinants of low wages typically fall under the purview of labor economists. The literature is extensive and includes the dynamics of labor supply and demand for low-wage workers (e.g. Bluestone, Murphy and Stevenson 1973; Gordon, Edwards and Reich 1982; Osterman 2001; Card and Dinardo 2006); labor market institutions, including government and employer policies (DiNardo, Fortin, and Lemieux 1999; Osterman 2008; Bosch 2009; Bosch, Mayhew, and Gautié 2010; Gautié et al. 2010); job mobility among low wage workers (Anderssen, Holzer, and Lane 2005; Theodos and Bednarzik 2006; Acs and Loprest 2004); as well as case studies of particular industries in which low-wage work is prevalent.<sup>1</sup>

Concern over the job quality of low-wage work and well-being of low-wage workers is often framed within the context of growing earnings inequality over the last thirty years. Real wages across the earnings distribution rose from the 1950s to the late 1970s, then sharply diverge in the 1980s with those in the top earnings deciles seeing continued increases, those in the middle experiencing little change, while those in the bottom deciles witnessing a substantial decline in real wages (e.g. Macklin 2008; Lemieux 2008). The proposed causes of increased earnings inequality are many and some are contested, but there is an emerging consensus that the decline in manufacturing jobs (and with it a decline in union membership) and rise of service work, combined with a substantial increase in the returns to education for both males and females are in part responsible (Harrison and Bluestone (1984); Bound and Johnson (1992); Card 2001; Goldin and Katz 2007; Machin 2008; Autor, Katz, and Kearney 2008; Lemieux 2008; Kopczuk, Saez, and Song 2010; Autor and Dorn 2011). Other causes, such as technological change and the role of trade

policies (e.g. Burtless 1995) are also indicated in this literature. Regardless, the implications are clear. For large portions of the population without high levels of education or particular types of technical training, the likelihood of getting a higher-paying job has fallen since the late 1970s and early 1980s. And while much of the literature focuses on the earnings of men, especially those working full-time and year round, there is growing evidence that earnings inequality has increased among all groups: men and women, married and unmarried adults, young and old, and across various regions (Gottschalk and Danziger 2005).

By definition, workers in low-wage jobs do not earn much. If these workers are the sole or primary breadwinner, low wages can mean an inability to cover basic family needs. There are some government-mandated protections in place to address this problem, although they do not always cover low-wage breadwinners. Minimum wage laws place a wage floor on most jobs. Levels are set through state and federal legislation, and with a few exceptions, are not adjusted to inflation making levels uneven across the country, and vulnerable to inflation.<sup>2</sup> More important, the 2011 federal minimum wage of \$7.25 an hour amounts to an annual income of \$14,500 working year-round and full-time, which is just below the 2011 Federal Poverty Guidelines for a family of two (U.S. Health and Human Services, Assistant Secretary for Planning and Evaluation 2011). In addition old-age, survivors, and disability insurance (commonly referred to as Social Security) and unemployment insurance (UI), cover most workers when employment is not possible due to injury at work, death or disability, or seasonal or cyclical unemployment, although eligibility is related to length of employment, and in the case of UI also on earnings levels. As a result, these programs can fail to cover some intermittent workers and in the case of UI, also low-wage workers (U.S. Government Accountability Office 2007).

Employers can and sometimes do provide benefits that serve to boost workers' resources as well as provide income and job protections against loss of work due to short and long-term family or medical leave or retirement, such as paid time off, health insurance and retirement plans. However, workers in low-wage jobs are much less likely than other workers to receive these employer-sponsored benefits (Phillips 2004; Clemans-Cope and Garrett 2006; Acs and Nichols 2007; Schmitt 2007; Boushey and Tilly 2009; Gould, Filian and Green 2011). Between low levels of earnings and the lack of employment-based benefits, low-wage workers are likely to face particular challenges that differ from workers with higher wages.

Studies of the determinants of and changes in family income among poor and low-income families with workers have largely been done by public policy analysts in various disciplines interested in the causes of poverty as well as impacts of policies on poverty levels and material well-being.<sup>3</sup> Family income is defined to include the earned income of all family members as well as other income, such as dividends, interest, rent and government transfer payments. For most low-income families, not surprisingly, it is the lack of sufficient earnings by adult members that is the cause of low income.

The literature provides insights into several causes of persistent low earnings leading to low income.<sup>4</sup> Macroeconomic conditions, especially recessionary periods with high levels of unemployment, are an important one (e.g. Tobin 1995). But even in non-recessionary periods, particular individuals who support families face reduced earning potential for a range of reasons, the most commonly cited are lack of education or technical skills. However, earnings potential (including the ability to acquire education and other training) may also be constrained because primary adults face labor market discrimination (Darity and Meyers 1998; Pager, Bonikowski, and Western 2009); become long-term structurally under- and unemployed (Wilson 1996); or are the family's primary caregiver

(Albelda and Tilly 1997; Cancian and Reed 2009). African-Americans, single mothers, elders, disabled adults, and immigrants are overrepresented in one or more of these categories.

In the case of constrained income that is not perceived to be due to a lack of individual initiative, policy responses are often warranted. Policies to alleviate poverty or supplement incomes to levels needed to sustain a family have varied over time from boosting general economic activity to targeted job development and training to providing cash and other in-kind assistance. However, it is the recent changes to cash and in-kind assistance programs (often referred to as "welfare reform") that encourage or demand employment as a pathway out of poverty for all but the elderly and disabled that has increased the interest of many researchers in the well-being of low-income families with earners, especially single-mother families.<sup>5</sup> Partly as a result of these policies, single-mothers' employment has certainly increased (Gabe 2007), but often in low wage work (Acs and Loprest 2004). There is increasing evidence that employment may not necessarily increase single-mother families' resource base because with increased earnings families lose government supports (or stop claiming them for lack of time) while there are increased costs associated with employment such as transportation, clothing, and child care (Albelda and Boushey 2007; Kaushal, Gao, and Waldfogel 2007; and Meyer and Sullivan 2008). The loss in resources is greater if the monetary value of lost non-market work provided by the adult family members is included in the calculations (Greenberg and Robins 2008). This suggests that while employment-promotion policies have worked to boost employment, especially in low-wage employment, they have not necessarily improved the resource base of many families.

### **Family status, wages, and social protection policies**

There is a connection between being a low-wage earner and also being in a low-income family, but



it is not necessarily a one-to-one correspondence. A worker can be in a low-wage job but not be in a low-income family (e.g. he or she lives with higher-waged family members). Conversely, a worker can be low-income but not in a low-wage job as in the case of a moderate-to-high-wage earner working too few hours resulting in low family income. The connection is strongest, of course, for single or primary wage earners: when the main or sole breadwinner is a low-wage earner his or her family will likely also be low income.

This connection between a breadwinner's wage and family income is the historical basis for the ways in which US employment-based and anti-poverty policies have been shaped. Workers' family status, which takes into account gender of the adult head, marital status, and presence of children have played a key role in the development of job structures, wages, and social protection policies (i.e. the sets of policies that protect families when a breadwinner cannot earn much or at all). Historians and other social science analysts have traced the racial and gendered development of job structures and wages, as well as the sets of employment-based policies for main breadwinners, which until relatively recently consisted primarily of married men (e.g. Land 1980; Nelson 1990; Orloff 1993; Figart, Mutari and Power 2002; and Kessler Harris 2003). There is considerable historical evidence that black and female workers were largely excluded from higher-paying jobs as well as employment-based government and employer-sponsored programs, most often because they were in occupations not covered by these supports, had too little earnings to qualify, or because they were explicitly excluded from such programs (Mettler 1998; Brown 1999; and Ward 2005).

Similarly, key anti-poverty programs, such as the cash assistance program for single mothers (the Aid to Dependent Children with Children program, replaced by the Temporary Assistance for Needy Family block grant in 1996), food assistance such as Food Stamps (recently renamed Supplemental

Nutrition Assistance Program), and Medicaid (the US means-tested health insurance program) were developed to mostly assist families without any earners, evident by the very low levels of income needed to be eligible and the assumptions in those programs that female adult heads would spend their time taking care of children and have no or limited time for employment (Vickery 1997; Gordon 1994; Kaiser Family Foundation 2005). Over time, despite dramatic changes in family structure (especially increases in single-adult households) as well as the employment expectations of mothers, employment-based policies that cover low-wage workers and anti-poverty policies that support (as oppose to promote) low-wage employment have been slow to adjust to these new realities.<sup>6</sup> The upshot is that many low-income adults in low-wage jobs are likely to find themselves betwixt and between, lacking both employment and anti-poverty protections.

Clearly family structure matters both in terms of family income, earnings capacity, and access to social protection policies. For any individual then, we posit that one's position in a family (what we call family status) is therefore a key determinant of whether he or she will be low wage and low income as well what kind of social protections one might receive. In determining the likelihood of being a low-wage and low-income earner, we ascribe a family status to each earner based on the gender of the worker, the presence of other adults (based on marital status or if residing with non-spousal adult family members), and the presence of children in the family.

### **Data and Definitions**

The data come from Annual Social and Economic (ASEC) Supplement of the Current Population Survey for years 1980 to 2010 (corresponding to employment and income statistics for 1979-2009).<sup>7</sup> In addition to standard income, employment, and demographic information, the ASEC Supplement also contains detailed data on relationships between household, and therefore family, members.

The final sample used here has 2,345,484

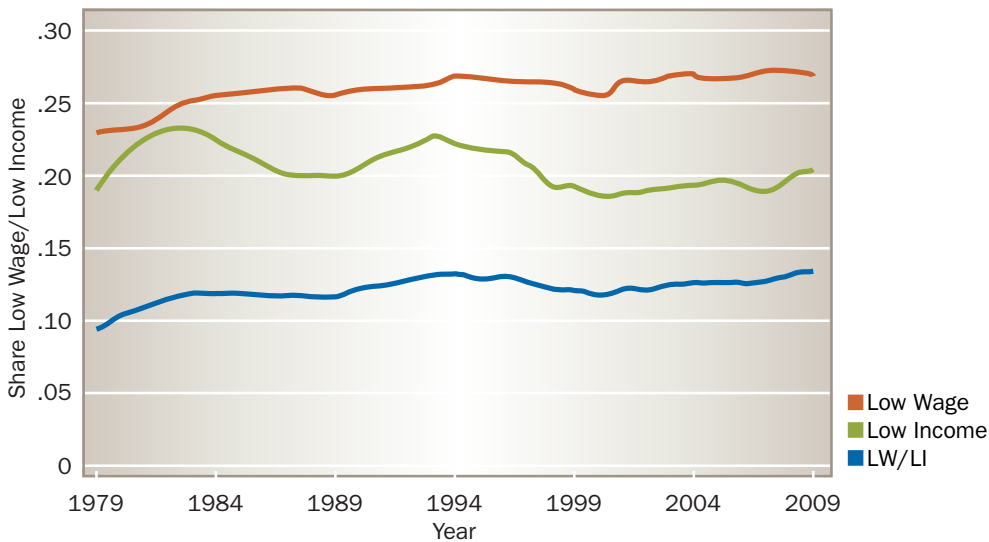
observations. The sample is limited to individuals 18 and older with positive earned wage or salary income, who are not self-employed, and who have non-missing observations for race/ethnicity, metropolitan status, education, is employed full time and full year, class of job, age, and the variables used to construct family status discussed below. The key variable of the analysis is whether an individual both earns a low wage and is a member of a low-income family (LW/LI), to be defined in more detail below.

There is no universally accepted definition of low wages. Gautié and Schmitt (2010), the International Labor Office (2010), and Bernstein and Gittleman (2003) use a cut-off of two-thirds of the median wage of all employees. Acs and Nichols (2007) use 150% of the median wage while Schochet and Rangarajan (2004) and Acs et al. (2010) calculate a low wage based on the hourly wage equivalent to the federal poverty annual income threshold for a family of four divided by 2080 hours (a full-time, year-round job). Finally, the Congressional Budget Office (2006) defines low-wages as those earned

by the workers in the bottom quintile of earners. We use the relative measure commonly employed by those with a labor market focus and consider a worker low-wage if she or he has a non-zero hourly wage less than or equal to two-thirds of the state median hourly wage. Consistent with using a relative measure, we peg our measure of low-wage to the state median as there is considerable variation in wages as well as in the legal minimum wage levels across the states.<sup>8</sup> The hourly wage is calculated for all wage and salary workers with positive earnings who worked for at least one week by dividing total wage and salary earnings by annual hours worked.<sup>9</sup> There is no official definition of low-income either. We adopt the definition that many poverty policy researchers, such as those at the Urban Institute and the National Center for Children in Poverty, use which is a family income less than 200% of the federal poverty line.<sup>10</sup>

We use the Current Population Survey (CPS) definition of families (two or more persons related by blood, marriage, or adoption living in the housing unit) and add to it “families of one” (a

**Figure 1:**  
**Share of Low-Wage, Low-Income, and Low-Wage and Low-Income (LW/LI) Earners: 1979–2009**



Source: Based on authors' calculations using CPS data from 1980-2010 for all non self-employed earners.

Notes: Low-wage defined as earning an hourly wage less than 2/3 of the median state wage, low-income is having family income less than 200% of the federal poverty line. LW/LI refers to workers who are both low-wage and low-income.

single individual residing in a household who is unrelated to anyone in that household). The CPS defines all persons in a household by relationship to the householder, who is the self-identified person who holds the lease or mortgage. Households may contain several unrelated individuals and/or families. We assume that family members, including what the CPS refers to as “subfamilies”, share resources only with other family members living in their household.<sup>11</sup> An individual earner is designated as low-income if he or she is a member of a family with income at or below 200 percent of the federal poverty income threshold for a family of that size and type.<sup>12</sup>

Figure 1 depicts the share of positive earners 18 years and older who were low wage, low income and both low-wage and low-income (LW/LI), respectively, from 1979 through 2009 drawn from the Annual Social and Economic Supplement of the Current Population Survey (collected in 1980 through 2010). The percentage of adult workers who are LW/LI is between 9.7 and 13.3, hovering between 12 and 13 percent for most of the period. As a percent of all workers, those who are low-wage increased in the early 1980s, stabilizing at about 28 percent in the early 1990’s. Conversely, the percentage of workers who are low-income has dropped from a high of close to 25 percent in 1982 to a low of 17.4 percent in 2009. Over the entire period, 44 percent of workers who were low-wage were also low-income while 61 percent of those who were low-income were also low-wage. From 1979 to 2009, the number of positive wage earners grew 38.0 percent from 105.6 million to 145.7 million, while the number of low-wage and low-income workers has grown 52 percent from 10.8 million to 16.4 million.

To get a better sense of the sample that is low-wage and low-income (LW/LI), Table 1 provides basic descriptive statistics of the entire sample and the LW/LI sub-sample. The patterns in the data reflect what one might expect: women comprise 49 percent of the sample, but 58 percent of LW/LI workers. Similar disparities exist for black and Hispanic

**Table 1:  
Descriptive Statistics by LW/LI Status:  
1979–2009**

	Not LW/LI	LW/LI	Total
<b>Female</b>	0.47 [0.50]	0.58 [0.49]	0.49 [0.50]
<b>Full-time/ Full-year</b>	0.67 [0.47]	0.41 [0.49]	0.64 [0.48]
<b>White</b>	0.78 [0.42]	0.57 [0.49]	0.75 [0.43]
<b>African American</b>	0.09 [0.28]	0.16 [0.37]	0.10 [0.29]
<b>Hispanic</b>	0.09 [0.28]	0.21 [0.41]	0.10 [0.30]
<b>Other</b>	0.05 [0.22]	0.05 [0.22]	0.05 [0.22]
<b>&lt; High School</b>	0.11 [0.31]	0.31 [0.46]	0.13 [0.34]
<b>High School</b>	0.34 [0.47]	0.39 [0.49]	0.34 [0.47]
<b>Some College</b>	0.29 [0.45]	0.23 [0.42]	0.28 [0.45]
<b>College</b>	0.18 [0.38]	0.05 [0.23]	0.16 [0.37]
<b>Advanced</b>	0.09 [0.28]	0.01 [0.12]	0.08 [0.27]
<b>Age</b>	39.31 [13.05]	34.32 [13.44]	38.68 [13.20]
<b>N</b>	2,052,798	292,686	2,345,487

Source: Based on authors’ calculations using CPS data from 1980-2010 for all non self-employed earners.

Notes: LW/LI dened as having family income less than 200% of the federal poverty line and earning an hourly wage less than 2/3 of the median state wage. Standard deviations are in brackets.



workers who represent, respectively, 10 percent of the sample but 16 percent and 21 percent of LW/LI workers. For white workers, the opposite pattern holds. They comprise 75 percent of the sample, but only 57 percent of LW/LI workers. Similar patterns hold for educational attainment as well, where lower levels of education are overrepresented among LW/LI workers and high education workers are underrepresented.

Family status is, again, defined by each earner's relationship to other family members in a household, his or her gender, and the presence of children under age 18. We are able to identify all three, as the Current Population Survey identifies each individual with a gender, relationship to householder (i.e. spouse, child or other relative) and the type of family to which each individual belongs.<sup>13</sup> Using information about relationship to the householder (and the head of unrelated secondary families) and family type we identify six mutually exclusive family relationships for all

positive earners age 18 and older for each gender. This generates 12 possible family statuses: single female/male adult with any children under 18<sup>14</sup>, married female/male adult with any children under 18<sup>15</sup>, single female/male adult without any children under age 18, married female/male adult without any children under age 18, single (unmarried) female/male adult householder living with other related adults<sup>16</sup>, related adult female/male who are not householders nor a spouse of the householder.

Table 2 depicts the percentage of each person by family status in March 1980 and March 2010.<sup>17</sup> Earners in seven family statuses saw an increase in their share of all family statuses, while five saw a decrease. The largest increase was among single males with no children, who experienced a 2.63 percentage point increase, followed by single females (with and without children). The largest decreases were among married males with no children and married males with children at 3.02 and 2.74 percentage points, respectively.

**Table 2:**  
**Percent Distribution of Earners by Family Status: March 1980 and March 2010**

Family Status	ID	1980	2010	Change
Single Female, children	SF, C	3.91	5.20	1.29
Single Male, children	SM, C	0.51	1.50	0.99
Married Female, children	MF, C	15.45	15.63	0.18
Married Male, children	MM, C	21.49	18.75	-2.74
Single Female, no children	SF no C	7.43	9.08	1.65
Single Male, no children	SM no C	8.00	10.63	2.63
Married Female, no children	MF no C	11.19	10.45	-0.74
Married Male, no children	MM no C	13.61	10.59	-3.02
Single Female, with Related Adults	SF, RA	1.44	2.24	0.80
Single Male, with Related Adults	SM, RA	0.60	1.23	0.63
Related Female	RF	7.22	6.97	-0.25
Related Male	RM	9.14	7.73	-1.41
	Total	100	100	

Source: Based on authors' calculations using CPS data from 1980-2010 for all non self-employed earners.

Notes: Family status determined using a combination of gender, presence of children, and relationship to head of household. Demographic questions in the CPS refer to the month when the survey is conducted.

Table 3 depicts the share of each family status in total employment (column 1), the distribution of LW/LI earners across family status (column 2), and the share of earners who are LW/LI within each family status (column 3) for all years. Single females with children are significantly overrepresented in the LW/LI subsample, comprising 4.68 percent of all employment but 12.85 percent of the LW/LI sample. Married males with and without children, and married females without children are significantly underrepresented in the LW/LI subsample. The discrepancy between the percent of married men with children who are LW/LI (11.79 percent) and the percent of married females with children who are LW/LI (14.26 percent) is driven by the much larger share of women who are low-wage.

Of course, the family statuses that are overrepresented in LW/LI compared to their share in employment also have the highest overall rates of LW/LI. By far the highest rate is among single females with children (i.e. single mothers) at 34.28 percent, followed by single females without children (24.16 percent). The family statuses with the lowest rates of LW/LI are married males without children (3.91 percent) and married females without children (4.67 percent). The substantially higher rate of LW/LI among married females with children versus married females without children, and single females with children versus single females without children, is consistent with the evidence on the effect of children and family status on labor market outcomes.

**Table 3:**  
Percent, LW/LI and Share of All and LW/LI Earners by Family Status

Family Status	% of All:		
	Earners	LW/LI Earners	% LWLI
<b>SF, C</b>	4.68	12.85	34.28
<b>SM, C</b>	1.08	1.53	17.71
<b>MF, C</b>	15.61	14.26	11.40
<b>MM, C</b>	19.38	11.79	7.59
<b>SF no C</b>	8.43	16.32	24.16
<b>SM no C</b>	9.59	15.07	19.61
<b>MF no C</b>	11.09	4.15	4.67
<b>MM no C</b>	11.90	3.73	3.91
<b>SF, RA</b>	1.96	2.61	16.63
<b>SM, RA</b>	0.95	0.89	11.70
<b>RF</b>	6.95	8.00	14.37
<b>RM</b>	8.39	8.80	13.08
<b>Total</b>	100	100	12.48

Source: Based on authors' calculations using CPS data from 1980-2010 for all non self-employed earners.

Notes: Family status determined using a combination of gender, presence of children, and relationship to head of household. Demographic questions in the CPS refer to the month when the survey is conducted, while employment and income questions refer to the previous calendar year. LW/LI dened as having family income less than 200% of the federal poverty line and earning an hourly wage less than 2/3 of the median state wage. See Table 2 for unabbreviated family status descriptions.

## Changes Across Time

Up to this point, we have largely described cross-sectional patterns. However, as other literature suggest, there could be important variation through time in LW/LI status. Further, as Table 1 indicates, there are important demographic and human capital differences between LW/LI and non-LW/LI individuals. Therefore, studying mean time-trends of LW/LI by family status could lead to misleading results. Further, the distribution of these demographic characteristics changes through time. As depicted in Table 2, there is considerable variation in changes in LW/LI across family statuses between 1980 and 2010. While married men and women (as heads or spouses of families) with and without children comprise close to 62 percent of all earners at the beginning of the period of study, by the end they are only 55.4 percent. The most notable changes have been the decrease of married males (with and without children) as a percent of all earners and the increase in single males and females (with and without children). Simultaneous to these trends, there also has been steady changes in human capital, including an increase in average levels of education. Taken together, it is clear that any analysis of time trends must account for changes through time that are likely intertwined with LW/LI status. This will be accomplished with regression analysis.

The goal of the regression analysis that follows is to describe trends in LW/LI earners by family status over time, controlling for demographic and human capital characteristics. Because the CPS is a cross-sectional survey, we use a cross-section regression with a large set of dummies and interactions to approximate a time trend for each family status. We begin with no additional controls for demographic, job and human capital characteristics in the regression (equation 1 below). This estimation technique will generate results that are identical to calculating the share of LW/LI by family status for each year. Next, demographic, job, and human capital controls (race/ethnicity, education level, age, age squared, job class of worker, full-time and

full-year employment, and metropolitan status) are added to the regression, and the time trends recalculated holding these characteristics fixed (equation 2 below).<sup>18</sup>

The process is fairly straightforward. First, a linear probability model of the form given in equation 1 is estimated,

$$1. \text{pr}(\text{LW/LI})_{ift} = \alpha + \delta_f + \tau_t + \omega_{ft} + u_{ift}$$

where  $i$  indexes individuals,  $f$  indexes family status,  $t$  indexes time,  $\delta_f$  is a family status fixed effect,  $\tau_t$  is a year fixed effect, and  $\omega_{ft}$  is an interaction between  $\delta_f$  and  $\tau_t$ . Second, a linear combinations of coefficients is calculated for each family status in each year, for a total of 372 linear combinations (12 family statuses over 31 years). The linear combinations provide the estimated percent of individuals who are LW/LI for each family status in each year.

To see how this works, consider equation 1, where the excluded category for family status is single females with children and the excluded category for year is 1979. In this case,  $\alpha$  (the constant term) is the share of single females with children who are LW/LI in 1979 because  $\delta_f$ ,  $\tau_t$ , and  $\omega_{ft}$  are zero. To find the share of single females with children in any given year, simply sum  $\alpha$  with  $\tau_t$  for the corresponding year. For any of the other family statuses,  $\alpha$ ,  $\delta_f$ ,  $\tau_t$ , and  $\omega_{ft}$  must be used. For example, to find the share of single males with children (SM,no C) who are LW/LI in 1993, calculate the sum  $\alpha + \delta_f[\text{SM, no C}] + \tau_t[1993] + \omega_{ft}[1993 \times \text{SM, no C}]$ .

When the demographic, job, and human capital controls are added, as in equation 2, the basic logic of the time trend estimation process is the same, but the method must be modified slightly. Without controls,  $\alpha$  is the share of single females with children (the excluded category) who are LW/LI in 1979. With controls,  $\alpha$  no longer has this interpretation, but the share of single females with children who are LW/LI is still the baseline quantity that is used to calculate the shares of all other groups in all other years. Instead of building on  $\alpha$  directly, the marginal effect of being a single mother

in 1979 is evaluated, holding the controls at their respective means. The marginal effect replaces  $\alpha$  in the calculations described earlier.

$$2. \text{pr}(\text{LW/LI})_{ift} = \alpha + \delta_f + \tau_t + \omega_{ft} + \gamma X_{ift} + u_{ift}$$

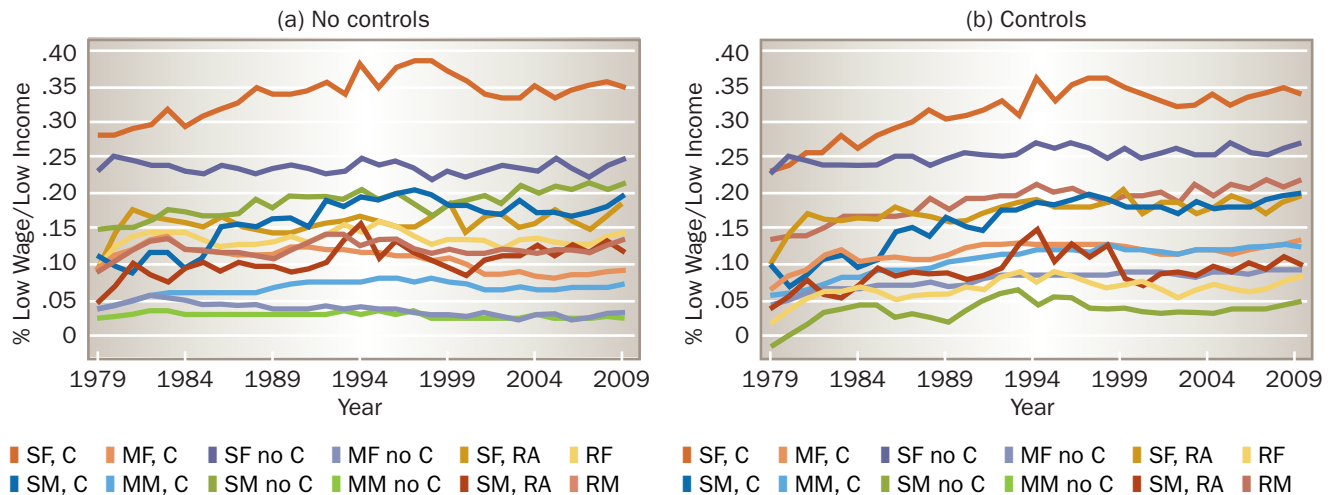
The regression controls (X) include race/ethnicity, education level, age (and age squared), job class of worker, full-time and full-year employment, and metropolitan status. This set of controls is used because they have been shown to be important in both determining wage levels and describing changes in the wage distribution over the last 30 years (e.g. Autor, Katz, and Kearney 2008).

This estimation strategy is infrequently used for analyzing changes through time, but it has several advantages over the more familiar quasi-panel approach.<sup>19</sup> In the quasi-panel approach, cross-section data is used to create group level statistics for each year, which can then be analyzed using conventional panel data methods. For the present purposes, this approach has a distinct advantage over the quasi-panel approach: it allows for more powerful tests of the significance of trends over time. The quasi-panel approach would transform

a dataset with roughly 2.5 million observations into one with 372 observations (12 family statuses times 31 years). This relatively small number of observations, combined with family status fixed effects, makes tests of significance of trends between groups far less powerful. It would be possible to test whether the overall trend for the entire period is significant, but it would not be possible to break this down into smaller segments. As will be seen, there is significant variation in growth of LW/LI by time period. This information would be lost using a quasi-panel approach.<sup>20</sup>

Figure 2 shows the complete results of this exercise. Panel a of Figure 2 gives the results of estimating equation 1, while panel b shows the results of estimating equation 2. Figure 3 breaks apart the results by gender to help see trends more clearly. There are five family statuses that show an overall upward trend in the share who are LW/LI without regression controls: single females with children (SF, C), single males with children (SM, C), single males with no children (SM, no C), married males with no children (MM, no C), and single (unmarried) male heads living with related adults (SM, RA). There

**Figure 2:**  
**Estimated Share of LW/LI Earners by Family Status With and Without Controls: 1979–2009**



Source: Based on authors' calculations using CPS data from 1980–2010 for all non self-employed earners.

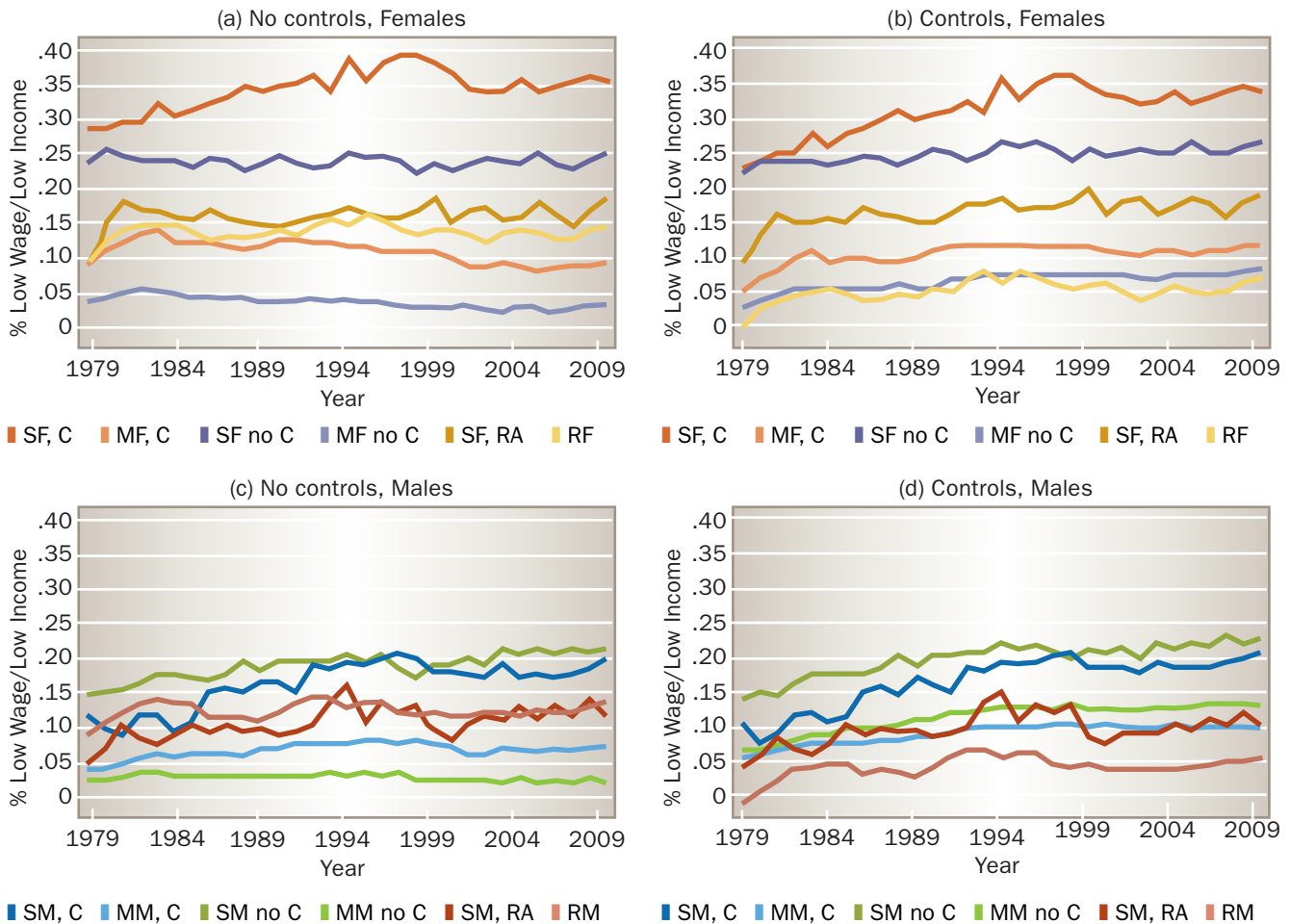
Notes: Graphs depict linear combinations of the coefficients from equation 1 (panel a) and equation 2 (panel b). All regressions include year fixed effects, family status fixed effects, and the interaction between year and family status fixed effects. Additional regression controls in panel b include race/ethnicity, education level, age (and age squared), job class of worker, full-time and full-year employment, and metropolitan status. See Table 2 for unabbreviated family status descriptions.

are three family statuses that show a downward trend in share who are LW/LI: married females with children (MF, C), married females with no children (MF, no C), and married males with no children (MM, no C).

Panel b in Figures 2 and 3 repeats the same exercise as panel a, but includes the regression controls mentioned above. Two major changes are apparent. First every family status shows a clear upward trend over the time period. That is, the share of all earners, regardless of family status and adjusting for various demographic and job characteristics, who are LW/

LI is increasing over time. Second, three groupings by level of the share of LW/LI emerge in panel b of Figure 2 by the end of the time period under study. The first two groupings are comprised of single adult householders. Single mothers (SF, C) remains the highest group by far, followed once again by single females with no children (SF, no C). Three family statuses emerge as a second cluster in the middle: single fathers (SM, C), single males with no children (SM, no C), and single female heads living with related adults (SF, RA). The remaining workers are clustered at the bottom, with married females

**Figure 3:**  
**Estimated Share of LW/LI Earners by Family Status and Gender With and Without Controls: 1979-2009**



Source: Based on authors' calculations using CPS data from 1980-2010 for all non self-employed earners.

Notes: Graphs depict linear combinations of the coefficients from equation 1 (panel a) and equation 2 (panel b) using CPS data for all non self-employed earners. All regressions include year fixed effects, family status fixed effects, and the interaction between year and family status fixed effects. Additional regression controls in panel b include race/ethnicity, education level, age (and age squared), job class of worker, full-time and full-year employment, and metropolitan status.



with children (MF, C) being the highest of this group and other related male adults (RM) the lowest of the group and overall.

The tests of linear combination of coefficients with controls, reported in Table 4, supports the results visually observed in Figures 2 and 3. The full time period is divided into three periods corresponding to the troughs of major business cycles: 1983 to 1991, 1991 to 2002, and 2002 to 2009. These years are chosen to coincide as closely as possible with the trough of recessions identified by the National Bureau of Economic Research (2011) since the early 1980s.

There is considerable variation in growth by time period both within and across family statuses. The overall pattern is similar to trends in overall earnings inequality: increases in the 1980s, small decreases or slight increases in the 1990s, and increases again in the 2000s. Importantly,

controlling for age, aged squared, education level, class of worker, residing in a rural area, and full-time/full-year status, every family status experienced a statistically significant increase in the share of LW/LI workers over the entire period. Single parents fared the worse, with an 8.7 percentage point increase for single males with children and a 5.7 percentage point increase for single females with children. Given that the overall mean of single males with children who are LW/LI in 2009 is 18.9 percent, an 8.7 percentage point increase is very large. Married females with children and related male and female adults experience the smallest increases in the share of earners who are both low-wage and low-income. Often these family members are secondary workers, so their low income status may be mitigated because they live with other family members with more earning capacity (or income).

**Table 4:**  
**Estimated Means of LW/LI Earners and Significance Tests Across Business Cycles by Family Status**

Family Status	Mean				Difference			
	1983	1991	2002	2009	1991-1983	2002-1991	2009-2002	2009-1983
<b>SF, C</b>	0.280	0.315	0.323	0.337	0.034***	0.009	0.014**	0.057***
<b>SM, C</b>	0.111	0.143	0.171	0.199	0.032*	0.028**	0.028**	0.087***
<b>MF, C</b>	0.118	0.126	0.112	0.131	0.008*	-0.014***	0.018***	0.013***
<b>MM, C</b>	0.081	0.110	0.115	0.124	0.030***	0.005	0.009***	0.043***
<b>SF no C</b>	0.242	0.255	0.261	0.269	0.013**	0.006	0.009**	0.027***
<b>SM no C</b>	0.170	0.196	0.192	0.219	0.027***	-0.004	0.027***	0.049***
<b>MF no C</b>	0.067	0.078	0.083	0.096	0.011**	0.005	0.013***	0.029***
<b>MM no C</b>	0.067	0.081	0.090	0.092	0.014***	0.009**	0.002	0.025***
<b>SF, RA</b>	0.161	0.171	0.188	0.195	0.010	0.017*	0.007	0.034***
<b>SM, RA</b>	0.052	0.083	0.086	0.096	0.031*	0.003	0.009	0.044***
<b>RF</b>	0.063	0.063	0.050	0.082	0.000	-0.013**	0.032***	0.019***
<b>RM</b>	0.035	0.048	0.031	0.050	0.013**	-0.018***	0.019***	0.015***

Source: Based on authors' calculations using CPS data from 1980-2010 for all non self-employed earners.

Notes: This table reports t-tests of the equality of linear combinations of coefficients from the results of estimating equation 2, depicted in Figure 2b. These are tests for the equality of means at two points in time using point estimates represented in Figure 2. Years correspond as closely as possible to business cycle troughs. See Table 2 for unabbreviated family status descriptions.

\*Statistically significant at the .10 level; \*\*at the .05 level; \*\*\*at the .01 level.

## Government and employer supports for low-wage and low-income workers

To the degree that workers who earn low wages and reside in a low-income family are the newly vulnerable, their ranks are growing especially among those who are the only earners in their families, but also among those who are likely to be primary earners. That the share of LW/LI men, including married men with children (those thought to be traditional breadwinners), is increasing is consistent with the earnings literature that consistently finds wage stagnation of male earners at the bottom of the wage ladder. But the fastest growing and among the highest levels of LW/LI workers are those who are considered to be non-traditional breadwinners, namely single parents. This group was specifically targeted to engage in employment in the mid-1990s as a means of “self-sufficiency” and improved economic conditions. If wages are low and family income is also low, are these LW/LI workers, especially breadwinners, likely to supplement their earning through access to social protections in the form of voluntary employer benefits and/or government supports? We now turn to explore our data for answers to that question.

As discussed previously, there is a concern and some case-study evidence that low-wage workers are particularly likely to slip through the cracks of employer-based economic and social protection. Further, to the degree that both government anti-poverty and employer benefit policies are shaped by family and earning status, as suggested earlier, we would expect to see two distinct patterns. First, married male breadwinners (and through them to their wives) should be more likely to receive employer benefits, even after controlling for low wages and low income. Second, single mothers and non-wage earners will be more likely to receive anti-poverty government benefits, while controlling for low levels of income. The first three columns of Table 5 provide the results of linear probability regressions that explore the level of two employer supports available and used by LW/LI workers

compared to other workers. Column 1 estimates the probability of being covered by any health insurance, including government-provided<sup>21</sup>; column two estimates the probability of being covered by employer-provided health insurance; and column 3 estimates the probability of being eligible to participate in an employer-provided pension plan. Of the variables available in the CPS, the latter two are the only ones that measure employer-provided benefits. All regressions include race/ethnicity, education level, age (and age squared), job class of worker, metropolitan status, year fixed effects, and family status fixed effects. Regressions in columns 1, 2, and 3 also include full-time/full-year employment status.

We also test to see if LW/LI earners are less likely to receive government supports than are those who are low income but do not have low wages. For these regressions, the sample is limited to all low-income individuals, including individuals with no earned income (a group excluded from all analyses up to this point). In these two regressions, receipt of government-sponsored (public) health insurance (column 4) and Food Stamp coverage (column 5) are investigated.

Compared with all non-LW/LI workers, LW/LI workers are 21 percentage points less likely to be covered by any health insurance plan (including a government-sponsored plan), 33 percentage points less likely to be covered by an employer-provided health insurance plan, and 19 percentage points less likely to be eligible to participate in an employer-provided pension plan. Compared to all low-income individuals, LW/LI workers are also 4 percentage points less likely to have Food Stamps in the household and 14 percentage points less likely to be covered by public health insurance. Put simply, LW/LI workers are employed in jobs that are considerably less likely to provide health insurance and pensions, but earn too much to be eligible for government provided supports aimed at low-income individuals.

**Table 5:  
Regressions for Receipt of Employer and Government Benefits by LW/LI and Family Status**

Variables	Full Sample			Low Income <sup>e</sup>	
	Insurance <sup>a</sup>	Emp.Ins. <sup>b</sup>	Pension <sup>c</sup>	Food St. <sup>d</sup>	Public Ins.
<b>LW/LI</b>	-0.210 <sup>***</sup> [0.001]	-0.326 <sup>***</sup> [0.001]	-0.194 <sup>***</sup> [0.001]		
<b>Alt LW/LI</b>				-0.037 <sup>***</sup> [0.001]	-0.140 <sup>***</sup> [0.001]
<b>SM, C</b>	-0.081 <sup>***</sup> [0.002]	0.019 <sup>***</sup> [0.003]	0.018 <sup>***</sup> [0.003]	-0.195 <sup>***</sup> [0.004]	-0.239 <sup>***</sup> [0.004]
<b>MF, C</b>	0.049 <sup>***</sup> [0.001]	0.175 <sup>***</sup> [0.001]	0.007 <sup>***</sup> [0.001]	-0.256 <sup>***</sup> [0.002]	-0.243 <sup>***</sup> [0.002]
<b>MM, C</b>	0.008 <sup>***</sup> [0.001]	0.116 <sup>***</sup> [0.001]	0.077 <sup>***</sup> [0.001]	-0.250 <sup>***</sup> [0.002]	-0.262 <sup>***</sup> [0.002]
<b>SF, no C</b>	-0.053 <sup>***</sup> [0.001]	0.041 <sup>***</sup> [0.001]	0.019 <sup>***</sup> [0.002]	-0.278 <sup>***</sup> [0.002]	-0.199 <sup>***</sup> [0.002]
<b>SM, no C</b>	-0.104 <sup>***</sup> [0.001]	0.011 <sup>***</sup> [0.001]	0.008 <sup>***</sup> [0.002]	-0.299 <sup>***</sup> [0.002]	-0.224 <sup>***</sup> [0.002]
<b>MF, no C</b>	0.003 <sup>***</sup> [0.001]	0.137 <sup>***</sup> [0.001]	0.008 <sup>***</sup> [0.002]	-0.347 <sup>***</sup> [0.002]	-0.233 <sup>***</sup> [0.002]
<b>MM, no C</b>	-0.010 <sup>***</sup> [0.001]	0.126 <sup>***</sup> [0.001]	0.074 <sup>***</sup> [0.002]	-0.337 <sup>***</sup> [0.002]	-0.186 <sup>***</sup> [0.002]
<b>SF, RA</b>	-0.068 <sup>***</sup> [0.002]	0.036 <sup>***</sup> [0.002]	0.006 <sup>**</sup> [0.002]	-0.151 <sup>***</sup> [0.003]	-0.207 <sup>***</sup> [0.003]
<b>SM, RA</b>	-0.133 <sup>***</sup> [0.002]	-0.009 <sup>***</sup> [0.003]	0.006 <sup>*</sup> [0.003]	-0.265 <sup>***</sup> [0.004]	-0.249 <sup>***</sup> [0.004]
<b>RF</b>	-0.077 <sup>***</sup> [0.001]	0.054 <sup>***</sup> [0.002]	-0.038 <sup>***</sup> [0.002]	-0.196 <sup>***</sup> [0.002]	-0.185 <sup>***</sup> [0.002]
<b>RM</b>	-0.135 <sup>***</sup> [0.001]	0.013 <sup>***</sup> [0.002]	-0.038 <sup>***</sup> [0.002]	-0.242 <sup>***</sup> [0.002]	-0.232 <sup>***</sup> [0.002]
<b>Constant</b>	0.922 <sup>***</sup> [0.003]	0.256 <sup>***</sup> [0.003]	-0.380 <sup>***</sup> [0.003]	0.523 <sup>***</sup> [0.004]	0.754 <sup>***</sup> [0.004]
<b>R<sup>2</sup></b>	0.16	0.23	0.27	0.11	0.35
<b>N</b>	2345484	2345484	2345482	1042123	1042123

Source: Based on authors' calculations using CPS data from 1980-2010 for all non self-employed earners.

Notes: All regressions include year xed effects and family status xed effects. Additional regression controls include race/ethnicity, education level, age (and age squared), job class of worker, and metropolitan status. Regressions for full sample also include full-time, full-year employment.

a Covered by any health insurance, including government sponsored.

b Covered by employer-sponsored health insurance.

c Eligible for, but not necessarily participating in, employer-sponsored pension plan.

d Presence of Food Stamps in the household.

e Low-income subsample includes individuals with zero, but not negative, earned income.

f Alt. LW/LI=1 if individual is LW/LI with positive income, Alt. LW/LI=0 if individual is low income but not low wage, including those with zero earnings.

\*Statistically significant at the .10 level; \*\*at the .05 level; \*\*\*at the .01 level.

As expected, there is considerable variation in receipt of benefits across family statuses. In all regressions, the excluded family status is single females with children. There are far too many coefficients to fully discuss variation for all family statuses, so we will limit attention to a few interesting results. First, as suggested earlier, there is a clear distinction between the experiences of married versus unmarried individuals. Considering employer-provided benefits, the relative magnitudes of the coefficients on the dummy variables indicate that coverage rates among married individuals are considerably higher than they are among unmarried individuals. These findings are consistent with arguments that family status shapes the types of jobs individuals wind up in, which in turn shapes the types of employer benefits they receive.

Column 1 indicates that, all else equal, single females with children have the fourth highest health insurance coverage rate, behind married women with children, married males with children, and married females without children. But this includes receipt of government insurance, which is consistent with the development of the anti-poverty health-insurance (Medicaid) program in the United States. Results in column 2, however, indicate that with the exception of single males with related adult in the family, single females with children are the least likely to be covered by an employer-sponsored health insurance plan. This result complements the finding of the higher degree of either eligibility or take-up of public health insurance among single females with children. Single females with children are also one of the least likely groups to be eligible for an employer-provided pension, while married males with and without children have by far the highest probability of being covered.

We know that low-wage workers in low-income families, especially those whose income is between 100 and 200 percent of the FPL, often make too much to be eligible for government supports (Zedlewski, Adams, Dubai, and Kenney 2006; Albelda and Boushey 2007). The majority (62

percent) of LW/LI in our sample fall in the 100-200 percent of the FPL range from 1979-2009. The CPS data have limited information on public supports and since the data are not longitudinal, we cannot easily test for the loss of government supports. However, we can compare LW/LI workers to other low-income adults, including those with no earnings.

We look at the probability of using two government supports. One of the most widely used benefits, and one which has uniform eligibility income thresholds across the states, is Food Stamps. Regressions for the presence of Food Stamps in the household show that LW/LI workers are indeed less likely to have food stamps in the household than other low-income adults. The other government support we explore is health insurance, which includes Medicare, Medicaid, and CHAMPUS (the program directed toward veterans). LW/LI earners are 14 percentage points less likely to be covered by public health insurance than those with low income but are not low-wage.

As predicted, single mothers with children are by far the most likely family status to have Food Stamps in the household and the most likely to be covered by public health insurance. For the Medicaid health insurance program this is explicit public policy. States determine income eligibility rules for adults and these vary considerably and have varied over time, but in most states employed adults in families without children are not eligible for Medicaid. Low-income married men and married women without children are the least likely to have Food Stamps in the household. And married females with children, married males with children, and single males with related adults are the least likely family statuses to be covered by public health insurance.

The much lower incidence of employer-sponsored health insurance and pension plan coverage among LW/LI workers coupled with the lower incidence of public supports are the strongest indicators that LW/LI workers can fall through the cracks of

publicly and privately provided benefits. In other words, LW/LI workers are both less likely to receive employer benefits and less likely to receive public benefits, leaving them in a particularly precarious economic position.

### **Conclusion**

Our findings that the share of LW/LI earners has increased among earners in all family statuses, but especially among breadwinners, are consistent with earnings inequality trends, particularly among male earners. They also reflect one likely outcome of employment-promotion policies directed toward single mothers without an extensive set of work supports needed to accompany low-

wage work while taking care of young children. Even though the CPS data offer limited ways to measure the availability and use of employer-based and government-provided benefits, we find unequivocally that low-wage and low-income workers are the most likely earners to be caught without those protections. This is apt to cause considerable hardship for these individuals and their families. It also calls into question larger issues about fairness when a prosperous society has a growing portion of the employed population, including main breadwinners, that struggle to earn adequate levels of income and are largely unprotected by the sets of policies intended for people in their situation.



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## End Notes

1. Many of the chapters of the edited volumes by Appelbaum, Bernhardt and Murnane (2005) and Schmitt and Gautié (2010) are devoted to case studies of low income industries.
2. Oregon, Vermont and Washington state annually adjust the minimum wage for inflation (U.S. Department of Labor 2011).
3. Recent review articles, reports, and books addressing trends in poverty, including poor and low-income workers are Danziger and Gottschalk, eds. (2004); Blank, Danziger, and Shoeni, eds. (2006); Hoynes, Page and Stevens (2006); Acs and Nichols (2007); Cellini, McKernan, and Ratcliffe (2008); Cancian and Danziger, eds. (2009); and Acs, Loprest and Ratcliffe (2010).
4. Alice O'Connor (2001) provides an excellent historical survey of how academics and policy makers have understood and studied poverty.
5. Dramatic legislative changes, especially the Personal Responsibility Work Opportunity Reconciliation Act in 1996, resulted in an increase in federal, state and foundation funding to examine the impacts on families with adults affected by legislative reform,. Some summaries and meta-analysis of these studies can be found in Golden (2005), Greenberg and Cebulla (2008), and Acs and Loprest (2004).
6. Although since the mid 1990s there has been an expansion of child care funding for mothers leaving cash assistance program, expansion of the refundable Earned Income Tax Credit program and the creation of the State Children's Health Insurance Program all of which accommodate low-income working parents (Greenberg and Lower-Basch 2008).
7. We use the uniform March CPS extracts of the ASEC supplement developed and made available by the Center for Economic Policy Research (2011).
8. Typically, when using the hourly wage in the Current Population Survey, outliers are a problem because the hourly wage must be calculated for salaried workers. Because we are using a ratio of the wage to the median wage by state, there is less concern about the presence of very high wages. We believe leaving the abnormally high wages in the sample is preferable to removing them, which would potentially overestimate the number of low-wage workers.
9. We do not include unincorporated self-employed workers since we are largely concerned with workers who are in a formal employment relationship. Less than 6.5 percent of all those with earnings were unincorporated self-employed workers in 2009. Annual hours worked are calculated by weeks worked last year divided by usual hours worked last year. Since we are most interested in a typically hourly wage, this measure works well for our purposes, even though usual weeks worked can vary considerably for some workers.
10. The current federal poverty income thresholds, based on cost of living calculations using 1950s data, are considered too low to meet basic needs, especially for workers (Citro and Michael 1995; Blank 2008) which is why poverty researchers have developed the term low income.
11. While this may not be a good assumption in households with complicated living arrangements, any alternative assumptions create more problems. We are able to identify cohabitators beginning in 1996.
12. Income thresholds vary by family size and age of householder. Families with a householder who is age 65 and older have lower income thresholds than other families. Poverty thresholds for all years used can be found at <http://www.census.gov/hhes/www/poverty/data/threshld/>.
13. The CPS (Census Bureau) assigns every individual one of the following five mutually exclusive family types: primary individual, primary family, related subfamily, unrelated secondary family, and unrelated secondary individual. Primary individuals and unrelated secondary individuals are always "families of one".
14. Outside of any children 18 and older, there must be no other related adults living in household to be assigned this family status designation. We include single grandparents when no adult parent is present.
15. Children must be under age 18. There may be other related adults living in the family.
16. There may also be children under age 18 in the household.
17. As mentioned, the income and employment questions in the CPS are retrospective, while the demographic questions are not. Thus, income and employment data range from 1979 to 2009, while demographic data range from 1980 to 2010.
18. This process is based on the non-parametric approach used in Dinardo, Lemieux, and Fortin (1996), with three distinct differences: the estimation technique is parametric (OLS), the variable of interest is dichotomous instead of continuous, and all years of data are used rather than two points in time.
19. See Autor, Katz, and Kearney (2006), Danziger and Gottschalk (2004), and Autor and Dorn (2011) for examples of the quasi-panel approach.



20. There is a second, though much less important, disadvantage to the quasi-panel approach. If a panel of family statuses were created, the regression analysis would regress the share of a particular family status that are LW/LI on statistics by family status. Although this does not change the ultimate goal of the regression analysis – explaining the share of individuals who are LW/LI by family status and year — it does change the interpretation of the regressions. Results of fixed-effects regressions with group specific time trends using the quasi-panel approach are available from the authors.
21. The CPS has revised the health insurance variable several times between their surveys conducted in 1980 and 2010. The revisions make it very difficult, if not impossible, to compare coverage rates through time. However, because the regressions include year dummies, the lack of comparability is not a problem for interpretation of the results.

