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Wage Trends Among Less-Skilled Workers**

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While labor force participation and real wage rates among less-skilled men have fallen since the late 1970s, among less-skilled women real wages have not fallen and their labor force participation has in fact risen. This observation falls into a largely unexplored area at the intersection of existing literatures. A substantial literature has investigated the declining returns to less-skilled jobs and the growing wage inequality between more and less-skilled workers in the U.S. labor market (Autor and Katz, 1999; Autor, Katz, and Kearney, 2005), but this literature has focused primarily on men. There is also a large literature on trends in male/female wage differences among all workers (Altonji and Blank, 1999; Bayard, et. al., 2003; Blau and Kahn, 2004), but this literature gives little attention to gender differences by skill level (Blau and Kahn, 1997, is an exception). Furthermore, there is very little literature on differential trends in labor force participation between women and men. Two recent papers address this topic (Mulligan and Rubinstein, 2005; Blau and Kahn, 2005) but again, these papers do not look at differences across skill groups.

This paper investigates trends in labor market outcomes for both male and female workers of different skill levels over the past 25 years. We look at gender differences by skill level in labor force participation and wages, exploring why less-skilled women have done better than less-skilled men in recent decades, even while losing ground relative to more-skilled women.

Trends in Labor Market Outcomes by Skill Level and Gender

In this section we examine four key labor market outcomes for less-skilled women: trends in labor force participation rates, unemployment rates, wage rates, and the

overall responsiveness of these variables to economic cycles. For each outcome, we compare less-skilled women to more-skilled women and also to low-skilled men. Throughout this paper we focus on men and women between the ages of 18 and 54. We define “less-skilled” as someone whose highest educational credential is a high school degree or less and compare them to the “more-skilled,” defined as those who have post-high school training. When discussing the less-skilled, we frequently distinguish between those with exactly a high school degree and high school dropouts. We analyze data for the last 25 years, from 1979 through 2004. The data in this section are based on tabulations from the Current Population Survey’s Outgoing Rotation Groups (ORG) data; these data provide large annual samples.²

Labor force participation. Figure 1 plots labor force participation rates, the share of all adults who are either at work or looking for work, for men (black lines) and women (gray lines) by skill level. Labor force participation among those with less than a high school degree is shown by the solid lines; among those with exactly a high school degree by the long dashed lines; and among those with more than a high school degree by the short dashed lines.

The most visible feature of Figure 1 is the narrowing over time of the male and female labor force participation gap. This trend is strongest among more-skilled men and women (the lines with short dashes), where the gender difference in labor market participation narrows from 21 percentage points in 1979 (91 percent for men and 70 percent for women) to 11 points in 2004 (90 percent for men and 79 percent for women). The declining gap is almost entirely due to substantial increases in labor market involvement among more-skilled women. Among less-skilled groups, the gender gap is

larger and narrows at a somewhat slower rate. The gap fell from 32 points in 1979 to 18 points in 2004 among high school dropouts. This occurs both because male labor force involvement falls and female labor force involvement rises.

We do not show the results separately by race or ethnicity, but the equivalent graph using data only among Hispanics shows very similar trends. Among African Americans, labor force participation has converged more within each skill group than among whites. Among those with less than a high school degree, the decline in black male labor force participation is especially dramatic, so that there is only a 5 point gap between black men and women who are high school dropouts in 2004.

Unemployment rates. The unemployment rate shows the share of all labor market participants who are seeking jobs but have not found one. Figure 2 plots comparisons in unemployment rates between men and women by skill level. Equivalent graphs that look only at blacks or Hispanics show very similar results.

There is little evidence of any deterioration in relative male/female unemployment rates over this time period. Among the more-skilled (short dashed lines), women's unemployment rates have converged with men's. In 1979 these rates were 5.0 percent and 3.2 percent for women and men, respectively; by 2004, they were 3.8 percent and 3.9 percent. Among those with exactly a high school degree (long dashed lines), women have been below or at the male unemployment rate throughout the period. Among high-school dropouts (solid lines), women's unemployment rates are consistently higher than men's and they are somewhat less cyclical. In 1979 these rates were 12.5 percent and 8.6 percent for women and men, respectively; by 2004, they were 12.7 percent and 10.2 percent. There is a slight widening in the unemployment gap among this least-skilled

group during the 1990s. We suspect that this reflects the increased labor force participation among less-skilled women in the mid 1990s; with welfare reform, many low-skilled women with limited experience began to search for work.

Hourly Wages. Figure 3 plots median real hourly wages over time within each gender and skill group.³ In 1979, hourly wages among all female skill groups were lower than hourly wages among all male skill groups, so that women with more than a high school education earned less than male high school dropouts (\$10.62 versus \$10.94). More-skilled men and women both show substantial increases in earnings between 1979 and 2004, with slight convergence over time. Male earnings among the more-skilled increased by 12 percent, from \$15.94 to \$17.83, while equivalent women's earnings increased by 31 percent, from \$10.62 to \$13.91. The increase in wages among these more highly skilled workers is particularly dramatic since this group is a rapidly growing share of the population over time.⁴

Less-skilled men – both high school graduates and high school dropouts – show real wage declines from 1979 through the mid-1990s. Their wages rise after 1995 but remain below where they were at the start of the period. In 2004, male high school dropouts earned \$9.27 per week, 15 percent below the 1979 level; high school graduates earned \$12.80, 6 percent less than in 1979. In comparison, less-skilled women show either flat (high school dropouts earned \$7.08 in 1979 and \$7.42 in 2004) or rising (high school graduates earned \$8.50 in 1979 and \$9.95 in 2004) wages over this period. The combination among the less-skilled of declines in male wages and increases in female wages contribute to greater wage convergence among these two groups. The female/male

ratio in 2004 is 0.80 for high school dropouts, 0.78 for high school graduates, and 0.78 for those with more education.

Equivalent graphs of hourly wages among only black or Hispanic workers show remarkably similar trends for less-skilled workers. Among those with more than a high school degree, the male/female gender wage gap has narrowed much more among these groups than among whites. This is largely because more-skilled men's wages in these groups has not risen as consistently as among more-skilled white males, so that rising wages among more-skilled black and Hispanic women are catching up faster.

Changing relative wages between men and women have been linked with the trends toward rising inequality across skill groups. Blau and Kahn (1997) argue that widening wage inequality pulled less-skilled women's wages down in the 1980s, but this was more than offset by improvements in women's experience and in their occupational placement. Welch (2000) suggests that men's widening wage inequality is causally linked with the declining gender gap in wages, as the technological shifts that caused losses to less-skilled men also brought relative gains to women. Fortin and Lemieux (2000) also present evidence consistent with this story.

*Cyclical*ity. Finally, we look at the effect of cyclical

ity on male and female workers by skill level. Previous work suggests that men and women's labor market responsiveness to unemployment is generally similar, although less-skilled workers experience greater cyclical

ity than more-skilled workers (Hoynes, 2000).

Table 1 shows the effect of changes in unemployment rates on men and women's labor force participation rates and log hourly wages between 1979 and 2003. Within each gender and skill group, the table reports the coefficient on state unemployment rates

in a regression that also includes state and year fixed effects, as well as a host of other variables identified at the bottom of the table. The first two columns show the effect of a one percentage point increase in the state unemployment rate on labor force participation. In general, women's labor force participation is only slightly less responsive than men's to the economic cycle. For instance, among all adults, a one point rise in unemployment leads to a one point drop in labor force participation among men and a 0.9 point drop among women. Labor force participation is least responsive to changes in unemployment among women with less than a high school degree (coefficient of -0.006). This result is driven by the past 10 years of data, in which less-skilled women show little responsiveness to the overall unemployment rate, perhaps reflecting welfare reform efforts that made welfare support less available to these women and their children. Although not shown in the table, labor force participation among black and Hispanic men is more cyclical than among white men. Among women, labor force participation among Hispanics is more cyclical, but black and white women's cyclicalities are quite similar.

Not surprisingly, hourly wages show much less cyclicalities than labor force participation rates. Women show no evidence of significant wage changes over the cycle. Among men, however, wages are cyclical for all but the least skilled. For example, a one percentage point increase in the state unemployment rate reduces weekly wages among high school graduates by 0.5 percent. Hence, the evidence suggests that less-skilled women are less harmed by economic cycles than men; their wages are not impacted and their labor force participation is somewhat less cyclical than that of men.

The bottom line of this review of labor market trends is that less-skilled women have fared better than have less-skilled men. Their labor force participation has risen to

66 percent in 2004 while that of equivalent men has fallen to 84 percent in that year. Relative male/female unemployment rates have not changed much. Less-skilled women's wages have risen relative to their male peers, so that the female/male wage gap is about 50 percent lower than it was a quarter century earlier. Women also have been less disadvantaged by economic cycles than men. While more-skilled women have done even better, with greater gains in labor force participation and wages, so have more-skilled men, and these gains may reflect the overall growth in the labor market returns to skill. The remainder of this paper investigates why less-skilled women did better than their male counterparts.

Possible Reasons for Changes in Gender Differences Among Less-Skilled Workers

This section discusses possible reasons that could account for the substantial narrowing in gender differences in labor market outcomes, with a particular focus on changes in experience and education. We discuss the broad evidence that supports (or not) differential male/female changes in each of these areas. In the next section, we provide evidence that tests the comparative importance of these and other factors.

Experience Changes. Past labor market experience is a key determinant of current labor market outcomes. Until workers near retirement age, persons with more past experience tend to earn more and are more likely to be in the labor market than those with less experience. Historically, women's worse labor market outcomes have been partly ascribable to their lower levels of labor market experience, due to greater time spent in home production rather than market production, especially when they have small children. Over the last quarter century, however, increases in women's labor force

involvement have led to greater accumulated labor market experience. Blau and Kahn (1997) suggest that a major reason why women did better than men in the 1980s is their growing labor market experience offset some of the declining returns to skill.

Less-skilled women workers (those with a high school degree or less) between ages 45 and 60 had accumulated 12.1 years of labor market experience in 1979, but 15.7 years in 2000. In contrast, over the same period and for the same age range, less-skilled men's accumulated experience fell from 29.7 to 24.4 years (based on calculations using the Panel Study of Income Dynamics).

In addition to growth in experience, the relationship between past experience and current labor market outcomes might also have changed within these populations. Historically, women worked less and earned less than men with equivalent labor market experience. These lower returns to experience may be due to different labor market choices that led women to select jobs where the returns were lower, or it may be due to discrimination against women that devalued their experience.

To investigate these issues, we turn to the Panel Study of Income Dynamics (PSID), which contains longitudinal data on a national sample of the population over the past three decades. The PSID data, unlike the CPS data, provide information on actual accumulated labor market experience. Figure 4 investigates the relationship between accumulated experience and labor market participation among less-skilled women and men in 1979 and 2000, providing an "experience/participation" curve. (The latest available year of PSID data is currently 2000.)

Figure 4 shows that at every level of experience in 1979, less-skilled women worked at significantly lower rates than men, and that less-skilled women's propensity to

work rose at every level of experience between 1979 and 2000. In contrast, men's propensity to work fell at every level of experience between 1979 and 2000. By 2000, women with low levels of accumulated experience still tended to work less than men with low levels of accumulated experience. For example, among women with 4 to 5 years of experience the participation rate was 58 percent; for men with 4 to 5 years, it was 79 percent. However, labor market participation among women who were more attached to the labor market (those with 15 years of experience or more) was identical to their male counterparts. For example, the labor force participation rate among women with 16 to 25 years of experience was 87 percent; for men with the same experience it was only one percentage point higher. After 6 to 7 years of experience, less-skilled men's labor force participation rates are relatively constant, while women's rates continue to grow during at least the first 15 years of experience. Figure 4 suggests that women's labor force participation may have risen for two reasons: their accumulated experience levels grew over the past several decades and their likelihood of working today is higher at every level of experience than it was in 1979.

Figure 5 shows the "experience/wage curve," plotting accumulated experience against current wages. Women's wage/experience profile is similar in 2000 as in 1979 for women with 10 years of experience or less, but wages grow more rapidly among women with higher accumulations of experience in 2000. For example in 2000, a less-skilled woman with 16 to 25 years of experience earned a median wage of \$13.07 dollars; in 1979, she earned only \$9.99. Among less-skilled men, wages were lower at every experience level in 2000 compared to 1979, although their experience/wage curve remains above women's. Figure 5 suggests that women's relative wages may have risen

both because they moved into higher accumulated experience categories and because the relative returns to experience rose among women with more accumulated work experience.

Educational changes. There have been substantial increases in educational attainment over the last quarter century, suggesting that less-skilled workers have become more negatively selected within the ability distribution in the population. If women's educational levels have changed at a different rate than men's, this could lead to differential labor market outcomes.

Figure 6 plots educational attainment levels for men and women. The lower (solid) lines show the share of high school dropouts in the total population by gender. These two lines lie almost on top of each other, suggesting that this group in the population has shrunk as rapidly among men as women over time. By 2004, only 13 percent of women and 15 percent of men between the ages of 18 and 54 were high school dropouts. The top (dashed) lines show the share of the total population that is less-skilled – those with no more than a high school degree -- by gender. Women were more likely to be less-skilled than men in 1979 (66 percent versus 58 percent) but they increased their education levels at a somewhat higher rate so that they are slightly less likely to be in this category by 2004 (44 and 46 percent respectively). This suggests that less-skilled women should have become more selected over time than less-skilled men, which would be expected to drive wages down at a faster rate (all else equal). Hence, there is little evidence here that skill selectivity explains women's improving labor market outcomes.⁵

Historically, men and women with equivalent levels of education have worked different amounts over their lifetimes. This gendered relationship between education and

labor market involvement might be shifting for reasons such as changes in expectations about market work careers among women, changes in the returns to work, or declining employer discrimination. Similarly, there are substantial gender differences in the wage returns to education. Declining gender discrimination might lead to relative wage gains even when overall returns to skill have been falling among less-skilled workers. Blau and Kahn (1997) provide evidence consistent with this over the 1980s.

We plot the relationship between education levels and labor force participation rates in 1979 and 2000 in Figure 7, and the relationship between education levels and median hourly wage levels in Figure 8.⁶ Figure 7 shows labor force participation rising with years of education among both men and women. For example, in 2000 the rate for women with 10 years of education was 57 percent, whereas it was 83 percent for women with 16 years or more.

In 2000, women at all education levels worked more than in 1979, while men at almost all education levels worked less, narrowing the gender gap. Figure 7 implies that increases in education might increase women's labor force participation both because more education leads to higher levels of market work and because work at every level of education has risen.

Figure 8 shows the relationship between education levels and median hourly wages. For both men and women, wages rise little at low levels of education, but faster as education increases. As expected, at equivalent levels of education, women have lower wages. For example, a female high school graduate in 2000 earned \$9.62, 23 percent less than a male high school graduate. Among female workers who are high school dropouts, the education/wage relationship changed little over this period, but

wages have risen among women with high school degree or more. In short, we find the same pattern in Figure 8 as elsewhere: Rising education leads to rising wages, but even if education had not risen, women are earning more at most levels of education.

Changes in the industrial distribution of jobs. Men and women have always worked in very different industries and occupations, and these differences are greater among less-skilled workers. Figure 9 demonstrates the differences in the distribution of jobs by industry among less-skilled men and women in 2002. Men are far more likely than women to be in agriculture, fisheries, mining, or construction (53 percent versus 7 percent) or manufacturing industries (39 percent versus 28 percent), while women are more likely to be in personal services (17 percent versus 4 percent) or professional service industries (48 percent versus 10 percent). A long literature has investigated the effects of differences in both industry and occupation on wages. For example, Bayard, et. al. (2003) find that occupational and industrial placement in the labor market explains about half of the gender wage gap.

Gender differences across the distribution of industries have changed little over the past 25 years. A standard index of segregation among less-skilled men and women was at 0.365 in 1983 and 0.390 in 2002.⁷ This index also shows slight increases among more-skilled workers. Similarly, an occupation segregation index for less-skilled men and women was 0.482 in 1983 and 0.486 in 2002. This index falls significantly among more-educated workers, however.

Thus, gender segregation by occupation and industry has been largely invariant among less-skilled workers and can do little to explain differential gender trends in outcomes. It is worth noting that industry location does have real effects on cyclical

trends in male and female labor market outcomes. Between 1999 (a business cycle peak) and 2002 (a year of sluggish economic growth), less-skilled men's unemployment rates rose from 4.9 percent to 7.4 percent, while less-skilled women's rates rose less, from 5.5 percent to 7.3 percent. Had women worked in the same industries as men, women's unemployment would have been higher in 1999, at 6.0 percent, and risen to 8.8 percent.⁸

Fertility/marriage changes. Because women on average put much more time into child care and child rearing than men, changes in household composition and fertility are more likely to influence women's labor market involvement than men's. Even among men, however, research indicates that marriage influences labor market outcomes (Hellerstein and Neumark, 2004). Over the past 25 years, there has been only a small increase in less-skilled women's propensity to stay single and childless, but their likelihood of being an unmarried mother has increased by 10 percentage points, from 12 to 22 percent. Their likelihood of being married has declined by 13 percentage points, from 68 to 55 percent, and the number of children in families has decreased.

The expected impact of these changes in child-bearing and marriage on labor market involvement is unclear. On the one hand, women tend to work less when they have greater child-care responsibilities and substitute home production for market production. On the other hand, women's income needs rise with children, particularly if there are no earnings from a spouse or partner. This suggests that one needs to control for marriage, children (including ages of children, as the value of home production relative to market production may be much greater for infants than older children), and for any effects linked with single parenting, per se.

Other possible causes. Other less-easily measured factors can also influence trends in gender differentials in wages and labor force participation. For instance, changes in the legal landscape and in public awareness of gender-based discrimination are likely to have made employers more open to hiring women, although this may have affected more-skilled women more than less-skilled if a main effect of discrimination had been to close off high-wage, high-status jobs to women (Blau and Kahn, 2004). Changes in social norms and expectations about work among women with children have also changed over this time. We highlight a few other trends that are likely to have affected male/female labor market outcomes over the past 25 years.

Rising incarceration. Since the late 1970s, Congress and many state legislatures have passed a variety of tougher sentencing policies that have led to an unprecedented rise in incarceration rates, concentrated among younger men, particularly younger minority men.⁹ Between 1979 and 2003, the male incarceration rate rose from 254 males in prison per 100,000 males in the population to 846 per 100,000. Less-skilled men were disproportionately affected by these changes (Harlow, 2003). Such changes are likely to affect the sample of men in datasets like the Current Population Survey, which surveys only non-institutional adults. Raphael (2005) indicates that that net effect of these changes is to reduce labor force participation among the non-incarcerated.

Growing immigrant share. Between 1980 and 2003, the foreign-born population in the United States increased from 6.2 to 11.7 percent, reflecting high rates of immigration. Immigrants may have different labor force participation patterns by gender; most noticeably, immigrant families often have lower female labor force participation, both because these families tend to have more children to care for and because of

differences in cultural norms about working wives. The paper by George Borjas (this volume) discusses these issues.

Policy changes. During the 1990s, the U.S. made major efforts to move welfare recipients into work. This effort disproportionately affected less-skilled single mothers. Single mothers' labor force participation rates rose faster than those of less-skilled childless women or of less-skilled married women between 1989 and 1999. A number of studies indicate that labor force (and welfare participation) changes were at least partially due to welfare reforms (Blank, 2002). This could have the effect of increasing less-skilled women's labor market participation faster than men's. If more women enter the labor market, one would expect women's wages to fall relative to men's unless women displaced men. Blank and Gelbach (forthcoming) find no evidence of any impact of the 1990s increases in female labor force participation and associated changes in welfare programs on work behavior among low-skilled men.¹⁰

Other policies also increased work incentives among the less-skilled, most notably increases in the Earned Income Tax Credit which provided growing incentives for labor market entry among non-working household heads with children (primarily single mothers). The evidence suggests that the positive labor supply effects of the EITC were greater for single mothers than for married men. On the other hand, the EITC appears to have discouraged work among married women, so the net effect on gender-specific labor market trends is unclear (Hoffman and Seidman, 2003).

While we believe that all of these other causal factors may be important in explaining gender differences in labor market outcomes, we have limited data on them. Policy changes vary only at the state level or the national level. Lacking individual level

data on incarceration or immigration (before the early 1990s) in the Current Population Survey data, we can only measure these variables at the state level. State-level variables are poorly identified in cross-sectional data and (for reasons described elsewhere) we focus on cross-sectional estimates from the years 1979 and 2004. Given this, we opt to include state fixed effects in our regressions, and allow these fixed effects to absorb the impact of demographic and policy differences across states that are not explicitly measured in our regressions.

Estimating Labor Force Participation and Wages

The above discussion sketched out the possible factors affecting labor market outcomes among less-skilled men and women. This section focuses on changes in the determinants of two key labor market variables, labor force participation and wage rates.

Our labor force participation estimates are based on the model given in Equation (1), estimated separately by gender and skill level in both 1979 and 2003. The four groups we focus on in each year are less-skilled men (those with a high school education or less), more-skilled men (those with more than a high school education), less-skilled women, and more-skilled women. The data come from the Annual Demographic Supplement to the March CPS in 1980 and 2004, which provides information on work and earnings in the previous year. We include all persons between the ages of 18 and 54. Labor market participation is a binary variable, equal to 1 if an individual reports working 1000 hours or more in the previous year. Imposing the 1000 hour restriction primarily gets rid of occasional and non-attached workers. Of those omitted by this restriction, over 75 percent identify their primary activity as school or as taking care of

home/family (rather than work), are retired, or identify themselves as ill or disabled. This restriction also gets rid of most outliers in hourly wages, which we calculate by dividing annual earnings by total annual hours (weeks worked times usual hours per week worked).

We focus on cross-sectional regressions in these two years, rather than utilizing panel data across all the years. Panel data would provide better identification of a variety of coefficients (such as policy effects that change over time, which we subsume into state fixed effects in each cross-section.) Unfortunately, there are two selectivity issues changing over time that we do not know how to deal with effectively in a panel data estimation procedure. On the one hand, we believe that selectivity into the labor force has changed over time (among both men and women). On the other hand, selectivity into our skill groups has changed over time as well (see Figure 6). Because we are unable to deal adequately with these selectivity issues, we elect to estimate reduced-form regressions (discussed later) from the beginning and ending years of the period. We note that solving this dual-selectivity problem and estimating changing labor market outcomes over time is an important topic for future research.

We use a linear probability model to estimate labor force participation in a specific year (1999 or 2003) as follows:

$$(1) \quad LFP_i = \beta_0 + \beta_1 * X_i + \beta_2 * Y_i + \beta_3 * Z_s + \mu_i$$

where i indexes individuals in a particular gender/skill/year sample. X is a vector of person-specific variables that affect both wages and labor force participation and β_1 is the associated vector of coefficients. X includes years of education, potential experience (defined as age-education-5), race and ethnicity. In the wage equation, X also includes a

control for part-time work. To allow for nonlinearity in returns to education for low-skilled workers, we also include a dummy variable to indicate if a worker holds a high school degree.

Y is a vector of family-specific variables, with associated coefficient vector β_2 . While we believe that these variables should primarily affect labor force participation decisions, there is evidence that marital status and children can affect wage outcomes as well. Y includes marital status, number of children, number of children under age 6, number of infants, and whether the person is a single mother (for women only). Z is a vector of location-specific variables, with associated coefficient vector β_3 . Z includes a set of state dummy variables that control for state fixed effects. Because we are estimating equation (1) separately in each year, these fixed effects control for any differences in the state environment, including differences in unemployment rates, unionization, welfare benefit levels and other welfare policy differences, state incarceration rates and policies, and other variables. Z also contains a dummy variable indicating whether an individual lives within a Standard Metropolitan Statistical area, providing a control for urban location.

We also estimate a wage equation for each gender/skill/year group:

$$(2) \quad \text{Ln}(\text{wage})_i = \alpha_0 + \alpha_1 * X_i + \alpha_2 * Y_i + \alpha_3 * Z_s + \varepsilon_i$$

where the dependent variable is the natural logarithm of real hourly wages, and other variables are defined as before.

Note that we do not do selectivity corrections on our wage estimates, that is, we do not take account of who is working or not working in estimating wages. Instead, our wage regressions can be viewed as reduced form regressions. The coefficients show not

only the effects of these variables on wage determination, but also reflect the impact of these variables on who chooses to work (and hence, who has reported wages.) We report the reduced form rather than the selectivity-corrected estimates for several reasons. First, because we are estimating these regressions separately by skill level, we suspect that the biggest selectivity effect over time is due to changes in who is in each skill grouping (see Figure 6). There is no obvious way to control separately for this type of selectivity and we suspect that skill selectivity is tangled with factors (such as family composition) that are typically used to identify selection into the labor force. Second, we have estimated a large number of selectivity-corrected wage regressions. We find that the wage coefficients (particularly the education coefficient) seem to be quite sensitive to how we identify the selectivity effect. Surprisingly, this is true for both less-skilled men and less-skilled women. This reinforces our concern that selectivity into these skill groupings is influencing the results and that we cannot interpret the selectivity coefficient in the standard manner (that is, as representing selectivity into the labor force only). Given these concerns, we are much more comfortable showing the descriptive reduced form wage regressions in this paper. By controlling for family composition variables (the Y vector) in the wage regression, we hope that we have absorbed at least some of the labor force participation selectivity effects (as well as some of the skill group selectivity) with these variables, but we recognize that our coefficients on the X vector are likely to be affected as well. We emphasize that this means the coefficients on the wage regression cannot be interpreted as the direct effect of these variables on wage determination alone.

We do not include dummy variables for industry and occupation in these regressions. We prefer to think of industry and occupation selection as a joint outcome

with wages, rather than including them as controls in a wage regression. For instance, if labor market discrimination against women in manufacturing forces them into service occupations, then including these variables “overexplains” gender wage differentials by ascribing to occupational choice what should be ascribed to discrimination. As we note above, these variables change little over time and are not likely to explain a great deal of the change in male/female wages, which is the focus of our concern.¹¹

Table 2 shows the results from eight regressions estimating the determinants of labor force participation for men and women by skill level in 1979 and 2003. The coefficients in the first row show that each additional year of education has a positive and significant effect on labor force participation, as expected (except among less-skilled men in 2003 without high school degrees). This education effect is stronger among less-skilled women than less-skilled men, consistent with the data in Figure 7. Over time, the impact of a year of education on labor force participation declines among both male and female high school dropouts, but the returns to a high school degree rise. In 2003, a male (female) worker with a high school degree had a 12 (17) percent higher probability of being in the labor force than a high school dropout with 11 years of education.

Experience has a positive effect on labor force participation among all groups and this effect grows over time except among more-skilled men. In 2002, increasing potential experience from 5 to 10 years raises the likelihood of labor market involvement by 5 percent for a female high school graduate, and by 4 percent for an equivalent man.

The effect of race on labor market involvement is relatively constant over time, except among less-skilled black men who are far less likely to work in 2003 than in 1979. By 2003, a less-skilled black man was 10 percent less likely to work than an equivalent

white man. All else equal, race and Hispanic ethnicity have no differential effect on labor force participation among less-skilled women. Hispanic ethnicity is associated with higher levels of work among all other groups in 2003.

Not surprisingly, family characteristics have a different effect on less-skilled women's labor force participation than on men's. As others have noted, marriage has a positive effect on men's labor market involvement and a negative effect on women's, although our estimates indicate that this effect has virtually disappeared over time among women. In contrast, single parenting has a positive effect on labor supply among more-skilled women (true in both years). While less-skilled single mothers were no more likely to work than equivalent unmarried childless women (the omitted category) in 1979, by 2003 their labor force participation is higher. One might interpret this as the result of the policy efforts to increase labor supply among welfare recipients.

In general, we expect that having more children, especially more young children, will decrease the likelihood of labor force involvement among women.¹² The number of preschoolers variable indicates whether there is any differential effect of preschoolers, after controlling for total number of children. The number of infants variable indicates whether there is a differential effect of infants, after controlling for number of preschoolers. By 2003, among less-skilled women, the number of children over the age of five was unrelated to labor force participation, while the negative effect of children under age five was somewhat larger than in 1979. More-skilled women's labor market choices have become less affected by the number and ages of children over time. Infants clearly have a significant and negative effect on the likelihood of working among less-skilled women, but appear to have no additional effect for more-skilled women.

Table 3 presents the coefficients on the wage equations by year and gender, using a specification similar to that used in Table 2. Because the dependent variable is log wages, one can interpret the coefficients in Table 3 as the percentage effect on wages of a one-unit change in the independent variable. Higher education levels lead to higher wages, as expected. Among both men and women who are high school dropouts, the returns to each year of education have fallen slightly, from 3.6 percent to 2.6 percent per year of education for women and from 4.7 percent to 3.6 percent per year of education among men. The wage effect of a high school degree has increased. Among men, the additional gain in wages from a high school degree (beyond the extra year of schooling) rises from 9.3 percent in 1979 to 16.1 percent in 2003. Among women, the gain from finishing high school goes from 10.5 percent to 18.0 percent in 2003. The returns to additional years of education have risen among more-skilled men and women as well. In 2003, women with more than a high school degree gained 11.5 percent in wages with each additional year of schooling, while equivalent men gained 10.9 percent. This is consistent with other evidence on the changing returns to education across skill groups.

In contrast, the wage returns to experience have remained relatively constant over time for all groups shown in Table 3. The combined coefficients on potential experience and its square (which allows for nonlinear growth in wages as experience rises) indicate that an increase in potential experience from 5 to 10 years increases wages by 11 percent among women and 12 percent among men in 2003. We worry that our coefficients on experience are hard to interpret since we can only measure potential experience in the CPS rather than actual years of work experience. To check this, we have estimated equivalent regressions using a measure of actual experience, with PSID data from 1980

and 2001. Somewhat surprisingly, the experience variables in the PSID estimates are quite close to those in the CPS estimates. For instance, in the 2001 PSID, the returns to experience for the less skilled are estimated at 5.8 percent for men and 3.4 percent for women. These compare to estimates in Table 3 for 2003 of 3.2 percent and 2.9 percent. Among more-skilled workers, the returns to experience are 4.7 percent (CPS) versus 4.8 percent (PSID) among men and of 4.3 percent (CPS) and 4.6 percent (PSID) among women. These comparisons reassure us that our potential experience estimates from the CPS are not too unreliable. Because of the much larger sample sizes within the CPS, we prefer to utilize this data set.

Workers who are black or who are of Hispanic origin earn lower wages than white workers, all else equal. For instance, in 2003, less-skilled black workers, both male and female, earn about 14 percent less than equivalent white workers. More-skilled black men earn 17 percent less, and more-skilled black women earn 6 percent less than equivalent white workers. The negative impact of Hispanic ethnicity on wages is even greater in 2003, with less-skilled Hispanic men earning 30 percent less and less-skilled Hispanic women earning 21 percent less. Of course, this can reflect ongoing discrimination in the labor market against workers of color. It may also reflect differential skill levels that are not well measured in the other variables. For instance, black or Hispanic workers may have attended worse schools, or Hispanic workers may have more limited English skills. As expected, part-time work also results in lower wages. For less-skilled workers, the negative wage effects of part-time work appear to have become larger over time.

Finally at the bottom of Table 3 we show the effect of a variety of family and children variables on wages. As discussed above, because we believe that the coefficients on these variables reflect selectivity into work as well as any direct effect of the variables on wages, we do not want to interpret the coefficients too strongly. Some of these variables may have a direct effect on wages; for instance, the literature suggests that married workers have high productivity (Hellerstein and Neumark, 2004). Consistent with this literature, we find that marriage has a positive correlation with the wages of all groups in both years, although the effects are bigger among men. Other variables (such as the children variables) may reflect the selection of who works. For instance, if women with more children generally prefer not to work, it may be only low-income mothers with larger families who can't afford to stay home who remain in the work force. This would result in a negative coefficient on number of children. Alternatively, if infant and preschool care is expensive, only higher-wage women may be able to afford to pay child care and work. This would result in a positive coefficient on the preschooler and infant variables. As we expect, the variables on children in the household have coefficients that are bigger and more significant among women than men. This is consistent with the idea that children have a larger effect on women's wages, almost surely affecting both which women go to work as well as the types of jobs they take.

Two overall lessons from Tables 2 and 3 should be noted. First, the determinants of labor force participation and wages differ substantially by gender, and these differences have changed over time. Second, the determinants of labor force participation and wages differ substantially by skill group, and these differences have also changed over time. Because it is hard to interpret the overall effects of these

changes by looking at the estimates in Tables 2 and 3, we turn to a decomposition that summarizes these results in the next section.

What Has Caused Changes in Relative Wages Among Less-skilled Women?

In this final section, we use the estimates from Tables 2 and 3 to calculate how changing factors are influencing relative labor force and wage changes among less-skilled women. We utilize a simple decomposition to look at the causes of labor force and wage changes among less-skilled women over time that characterize the change in wages between two periods as

$$(3) \quad \Delta (\ln \text{wage}) = (\Delta X) \hat{a}_1 + (\Delta \hat{a}) X_2$$

Where Δ indicates the change between period 1 (1979) and period 2 (2003) in the means of the indicated variable, X_t is a vector of the means of all variables in the regression in period t , and \hat{a}_t is the vector of estimated coefficients on each variable in period t .

We compare the decomposition in the determinants of changes of log wages among less-skilled women with a similar decomposition for less-skilled men and with one for more-skilled women. Comparing the trends between less-skilled men and women and between less-skilled women and more-skilled women, gives us a sense of the different changes that are occurring in the labor market over time.¹³

Table 4 shows the results from these decompositions. The top section in Table 4 compares changes in labor force participation rates and the bottom section compares changes in real log wages. The first two rows in each section show the level values of labor force participation (or wages) for each group and the third row shows the change over time. The next four rows look at the total change due to education variables,

experience variables, family composition variables (including marital status and children), and all other variables (including the race, ethnicity, SMSA, and state fixed effects). Below this, we decompose these factors into the amount due to changes in the means of the explanatory variables and to changes in the coefficients over time. The first three columns compare less-skilled women and men, while the last three columns compare less-skilled women with more-skilled women.

Look first at labor force changes at the top of Table 4. The 8.3 percentage point increase in labor force participation rates among less-skilled women is being driven by changes in the effects of experience and family composition. These factors driving up labor force participation are offset somewhat by changes in education and in other variables that would have reduced labor force participation. The next several rows indicate that almost none of the change in women's labor force participation is due to changes in the mean levels of the X's; virtually all of it is due to changes in the coefficients, where the declining effect of education on labor supply for less-skilled women is more than offset by the growing positive effect of experience and family composition (more accurately, the negative effects of family composition on women's labor force participation are becoming smaller over time.)

In contrast, the decline in labor force participation among low-skilled men is dominated by substantial declines in the coefficients on education that are only somewhat offset by the growing positive effect of experience on labor force participation. As column 3 indicates, the gap in male-female labor force participation falls by almost 15 percentage points, almost all due to shifts in the relative returns on education, experience, and family variables that favored low-skilled women. These positive factors for relative

female labor supply were at least partially offset by a shift in the other variables that has favored low-skilled men over women.

When one compares less-skilled women with more-skilled women, labor force participation rates grow a little more slowly among the less-skilled, widening the gap between these groups by 1.7 percentage points. The effect of education on labor supply has declined markedly among more-skilled women. This is more than offset by increasing positive effects on labor supply from all other variables. Most notably, the other variables (which are primarily locational factors through state fixed effects and SMSA location) shifted in ways that enhanced the labor force participation of more-skilled women while reducing the labor force participation of less-skilled women.

It is striking that so little of the change in labor force participation is due to actual changes in education or experience, but rather these changes are largely driven by changing coefficients. (Of course, the use of potential experience rather than actual experience understates the actual gain in years of labor market experience among women.) This can reflect changing demand for different types of work, as well as changes in labor market discrimination. Relative to less-skilled men, the returns to less-skilled women's characteristics improved more (experience and family composition) or deteriorated less (education). Relative to more-skilled women, the returns to some characteristics improved more (experience and family composition) or deteriorated less (education), while locational factors greatly advantaged more-skilled women's labor force participation.

The bottom part of the Table 4 decomposes real wage changes in a similar way. One can read changes in log wages as (approximately) equal to percentage changes, so

the data suggest that less-skilled women's wages rose 13.4 percent while men's fell 6.5 percent. In contrast, more-skilled women's wages rose 29.6 percent. As with labor force participation, almost all of the change in less-skilled women's wages was due to changes in the coefficients rather than changes in the means of the explanatory variables. Returns to education fell among less-skilled women, while their returns to experience rose. Less-skilled men show falling returns to both education and experience over this time period. Family composition changes enhanced women's wages while they reduced men's wages. Hence, the overall reduction of 19 percent in the wage gap between less-skilled men and women is largely explained by shifts in the impact of education, experience, and family composition on wages that favored less-skilled women over less-skilled men.

Comparing more and less-skilled women gives a very different story. Wages among more-skilled women grow faster, widening the wage gap by 16.2 percent. Unlike the less-skilled, more-skilled women saw strong increases in the wage returns to education. Both more and less-skilled women experienced increases in returns to experience as well as positive shifts in the effect of family variables on wages. More-skilled women also had greater gains in potential experience levels than did less-skilled women. The gains from these changes were partially offset by changes in the other variables that reduced wages somewhat among more-skilled females.

The message from Table 4 is that the characteristics of low-skilled women are not changing much relative to those of low-skilled men or more-skilled women. Instead, the coefficients that link characteristics to labor market involvement and wages are changing in ways that differentially affect these groups. The impact of education on labor force participation and wages among less-skilled men and women has deteriorated, but it has

deteriorated more for men. The returns to experience (as a driver for both wages and labor force participation) have grown for all women. The effect of family characteristics on labor market and wage behavior among less-skilled women has changed in ways that increase their work and their wages, an effect that is also evident among more-skilled women. These changing coefficients can be the result of changes in labor market demand and employer behavior, as well as changes in women's behavior, and almost surely both supply and demand behavior has changed over the past 25 years. This paper cannot pinpoint the reasons behind these shifts, but it does indicate that it is the *translation* between personal characteristics and labor market outcomes that are shifting differentially across groups.

Conclusions

We have investigated why less-skilled women have done relatively better than their less-skilled male counterparts over the last several decades, even while they have lost ground relative to more-skilled women. The labor force participation rate and wage gaps have narrowed between less-skilled women and men, while these gaps have grown between more and less-skilled women even though labor force experience and wages went up among women at all skill levels.

While education levels have grown among less-skilled women over this period, they have grown almost as fast among less-skilled men. Accumulated labor market experience has grown among both more and less-skilled women, although it has grown faster among the more-skilled. In the end, however, changes in the levels of these

characteristics are not the dominant force behind different labor market trends among these groups.

Instead, the results in this paper indicate that there have been dramatic changes in the *relationship* between worker characteristics and labor market outcomes. On the one hand, less-skilled women experienced declining returns to education, while the wage returns to education grew among more-skilled women. This is consistent with widening wage inequality between skill groups, discussed by many authors. There has been a growing positive effect of experience on labor market participation and on wages among women at all skill levels, while the effect of experience on wages among less-skilled men has declined. Furthermore, shifts in the effect of family composition on less-skilled women's labor supply have increased women's relative labor force participation and these effects were greater among the less-skilled than the more-skilled.

Less-skilled women have thus found themselves in an "intermediate" place in the labor market. They have experienced deteriorating returns to education, but they have benefited from a growing positive impact of accumulated experience on labor market outcomes, offsetting some of the declining educational effects. This has worked to close the gender gap in wages among less-skilled workers. In contrast, less-skilled women's labor market outcomes have improved at a much slower rate those of more-skilled women, who benefited from improvements in the returns to both experience and education. While more-skilled women are doing well, they continue to lag behind more-skilled men whose wages rose equally fast.

It would be useful to understand the shifts discussed above more fully. Why are the labor market returns to women's accumulated experience rising? To what extent does

the shifting relationship between children, marriage, and women's work reflect changes in institutional structure, such as growing availability of child care? This paper provides a look at the changes in labor market outcomes. Nailing down causal interpretations will require more careful empirical work that accounts for changing selectivity effects or that looks at changes within versus across cohorts over time.

While less-skilled women have done better than less-skilled men in the labor market in the recent past, it is not clear that this pattern will continue. As the determinants of women and men's labor market outcomes converge, this may be bad news for less-skilled women, who may find themselves more subject to the negative trends that have disadvantaged less-skilled men for the past 25 years. Policies that subsidize work among the less-skilled, such as the EITC, child care, or health care subsidies, will be of ongoing importance to encourage labor market participation and reward work among low-wage and low-skilled workers..

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Table 1

Cyclical Responsiveness of Labor Force Participation and Wages to Unemployment Changes, by Gender and Skill Levels

Skill Level	Labor Force Participation		Real Log Hourly Wages	
	Men	Women	Men	Women
Less than HS	-0.008* (0.001)	-0.006* (0.001)	-0.003 (0.002)	-0.004 (0.003)
Exactly HS	-0.013* (0.001)	-0.011* (0.001)	-0.005* (0.001)	0.001 (0.001)
More than HS	-0.008* (0.001)	-0.007* (0.001)	-0.004* (0.001)	0.000 (0.001)
All	-0.010* (0.000)	-0.009* (0.001)	-0.002* (0.001)	0.001 (0.001)

Each number shows the coefficient on the state unemployment rate from a regression based on pooled CPS samples for this group from 1979 through 2003. State and year fixed effects are included. Other variables included in the regression are years of education; potential experience and potential experience squared; dummy variables to indicate race, hispanic ethnicity, and location in an SMSA; dummy variables to indicate whether an individual is married or a single mother (women only); number of children, number of preschoolers, and number of infants. The wage regressions also include a control for part-time work.

* Significant at 5% level or higher.

Table 2
Determinants of Labor Force Participation, by Gender and Year

	1979				2003			
	Men		Women		Men		Women	
	HS or <u>Less</u>	More than <u>HS</u>	HS or <u>Less</u>	More than <u>HS</u>	HS or <u>Less</u>	More than <u>HS</u>	HS or <u>Less</u>	More than <u>HS</u>
Years of Education	0.013** (0.002)	0.008** (0.002)	0.018** (0.002)	0.037** (0.003)	-0.002 (0.002)	0.019** (0.002)	0.012** (0.003)	0.027** (0.002)
HS Degree (1=yes)	0.038** (0.010)		0.107** (0.010)		0.126** (0.012)		0.158** (0.012)	
Potential Experience	0.008** (0.001)	0.034** (0.002)	0.009** (0.001)	0.023** (0.002)	0.015** (0.001)	0.028** (0.001)	0.014** (0.001)	0.018** (0.001)
Potential Exp Squared	-0.023** (0.003)	-0.091** (0.004)	-0.021** (0.003)	-0.066** (0.005)	-0.041** (0.003)	-0.074** (0.004)	-0.026** (0.004)	-0.040** (0.004)
Race (1=Black)	-0.030 (0.011)	-0.033* (0.016)	-0.026* (0.011)	0.057** (0.017)	-0.097** (0.012)	-0.036** (0.011)	-0.014 (0.012)	0.043** (0.010)
Ethnicity (1=Hispanic)	0.043** (0.011)	-0.014 (0.018)	0.013 (0.011)	0.014 (0.021)	0.087** (0.010)	0.033** (0.011)	0.000 (0.011)	0.026* (0.011)
Marital Status (1=married)	0.151** (0.008)	0.141** (0.010)	-0.148** (0.010)	-0.087** (0.013)	0.145** (0.008)	0.126** (0.007)	-0.023 (0.012)	-0.019 (0.010)
Hhold Status (1=Single Mom)			-0.002 (0.012)	0.111** (0.019)			0.086** (0.013)	0.112** (0.011)
Number of Children	-0.007** (0.002)	-0.009** (0.002)	-0.015** (0.002)	-0.024** (0.003)	0.008** (0.002)	0.003 (0.002)	0.000 (0.003)	-0.009** (0.002)
Number of Preschoolers	0.015** (0.004)	0.018** (0.005)	-0.020** (0.005)	-0.051** (0.008)	0.000 (0.006)	0.001 (0.004)	-0.029** (0.006)	-0.038** (0.005)
Number of Infants	-0.005 (0.007)	0.004 (0.007)	-0.034** (0.007)	0.005 (0.012)	0.008 (0.009)	0.013* (0.007)	-0.040** (0.009)	0.005 (0.008)
Observation	25047	17373	30660	15708	23188	28174	23375	33301

Note: All regressions include controls for location (SMSA) and state fixed effects. Potential experience is defined as age-education-5; coefficient on potential experience squared is multiplied by 100. Number of children is the total number of children in the family less than age 18; number of preschoolers is the total less than age 6; and number of infants is the total less than age 2.

* Significant at 5% level or higher. Standard errors in parentheses.

** Significant at 1% level or higher.

Table 3
Determinants of Log Wages, by Gender and Year

	1979				2003			
	Men		Women		Men		Women	
	HS or <u>Less</u>	More than <u>HS</u>	HS or <u>Less</u>	More than <u>HS</u>	HS or <u>Less</u>	More than <u>HS</u>	HS or <u>Less</u>	More than <u>HS</u>
Years of Education	0.047** (0.005)	0.056** (0.003)	0.036** (0.007)	0.090** (0.004)	0.036** (0.004)	0.109** (0.003)	0.026** (0.007)	0.115** (0.003)
HS Degree (1=yes)	0.093** (0.017)		0.105** (0.022)		0.161** (0.019)		0.180** (0.023)	
Potential Experience	0.037** (0.002)	0.048** (0.002)	0.027** (0.002)	0.041** (0.003)	0.032** (0.002)	0.047** (0.002)	0.029** (0.003)	0.043** (0.002)
Potential Exp Squared	-0.058** (0.005)	-0.092** (0.007)	-0.050** (0.005)	-0.099** (0.009)	-0.049** (0.005)	-0.091** (0.006)	-0.049** (0.006)	-0.088** (0.006)
Race (1=Black)	-0.194** (0.017)	-0.098** (0.024)	-0.079** (0.016)	0.021 (0.022)	-0.136** (0.019)	-0.167** (0.019)	-0.137** (0.018)	-0.060** (0.015)
Ethnicity (1=Hispanic)	-0.144** (0.018)	-0.088** (0.024)	-0.059** (0.019)	-0.027 (0.025)	-0.176** (0.017)	-0.221** (0.021)	-0.176** (0.019)	-0.110** (0.018)
Part time wkr (1=part time)	-0.159** (0.044)	-0.217** (0.040)	-0.201** (0.016)	-0.175** (0.025)	-0.300** (0.041)	-0.329** (0.039)	-0.210** (0.019)	-0.165** (0.016)
Marital Status (1=married)	0.229** (0.014)	0.177** (0.016)	0.029* (0.014)	0.033 (0.017)	0.172** (0.014)	0.198** (0.013)	0.095** (0.019)	0.131** (0.016)
Hhold Status (1=Single Mom)			0.041* (0.018)	0.073** (0.026)			0.072** (0.021)	0.052** (0.018)
Number of Children	0.004 (0.003)	0.013** (0.004)	-0.018** (0.004)	-0.039** (0.007)	0.009* (0.004)	0.006 (0.003)	-0.011* (0.005)	-0.015** (0.004)
Number of Preschoolers	-0.005 (0.008)	-0.017 (0.009)	0.008 (0.009)	0.032* (0.014)	0.003 (0.009)	0.030** (0.008)	0.001 (0.011)	0.029** (0.009)
Number of Infants	0.005 (0.012)	0.029* (0.013)	0.024* (0.012)	0.040* (0.019)	-0.011 (0.014)	-0.020 (0.012)	0.025 (0.017)	0.011 (0.013)
Observation	19441	13674	14028	8767	17014	22616	12848	21726

Note: All regressions include controls for location (SMSA) and state fixed effects. Potential experience is defined as age-education-5; coefficient on potential experience squared is multiplied by 100. Number of children is the total number of children in the family less than age 18; number of preschoolers is the total less than age 6; and number of infants is the total less than age 2. Wages are inflation-adjusted to 2000 dollars using the GDP Personal Consumption Expenditure deflator.

* Significant at 5% level or higher. Standard errors in parentheses.

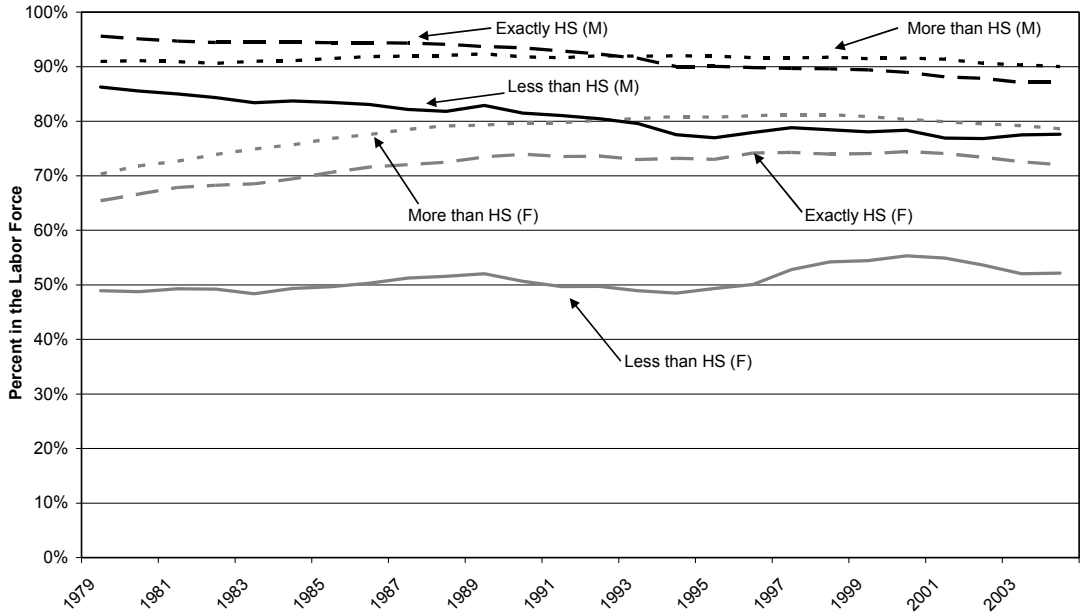
** Significant at 1% level of higher.

Table 4
Comparative Sources of Change in Labor Force Participation and Log Wages

	<u>Low-skilled Women vs Low-Skilled Men</u>			<u>Low-skilled Women vs. More-skilled Women</u>		
	Change in Labor Force Participation			Change in Labor Force Participation		
	<u>Women</u>	<u>Men</u>	<u>Difference</u>	<u>Less-skilled</u>	<u>More-skilled</u>	<u>Difference</u>
<i>2003 Level</i>	54.7	71.4	-16.7	54.7	65.8	-11.1
<i>1979 Level</i>	46.4	77.9	-31.5	46.4	55.8	-9.4
Total Change	8.3	-6.5	14.8	8.3	10.0	-1.7
Change due to:						
Education	-2.0	-10.2	8.2	-2.0	-15.4	13.4
Potl Experience	8.2	5.2	3.0	8.2	3.0	5.2
Family Comp	13.9	-1.0	14.9	13.9	9.3	4.6
Other Variables	-11.8	-0.5	-11.3	-11.8	13.1	-24.9
Change due to means changes only:						
Education	0.8	0.7	0.1	0.8	-0.4	1.2
Potl Experience	1.0	1.0	0.0	1.0	2.5	-1.5
Family Comp	1.7	-3.1	4.8	1.7	1.5	0.2
Other Variables	0.0	1.4	-1.4	0.0	0.3	-0.3
Change due to coefficients changes only:						
Education	-2.8	-11.0	8.2	-2.8	-15.0	12.2
Potl Experience	7.1	4.3	2.8	7.1	0.5	6.6
Family Comp	12.2	2.1	10.1	12.2	7.8	4.4
Other Variables	-11.7	-1.9	-9.8	-11.7	12.8	-24.5
	<u>Change in Real Log Wages</u>			<u>Changes in Real Log Wages</u>		
	<u>Women</u>	<u>Men</u>	<u>Difference</u>	<u>Less-skilled</u>	<u>More-skilled</u>	<u>Difference</u>
<i>2003 Level</i>	2.300	2.517	-0.217	2.300	2.726	-0.426
<i>1979 Level</i>	2.166	2.582	-0.416	2.166	2.430	-0.264
Total Change	0.134	-0.065	0.199	0.134	0.296	-0.162
Change due to:						
Education	-0.042	-0.065	0.023	-0.042	0.348	-0.390
Potl Experience	0.086	-0.017	0.103	0.086	0.132	-0.046
Family Comp	0.055	-0.060	0.115	0.055	0.089	-0.034
Other Variables	0.036	0.077	-0.041	0.036	-0.273	0.309
Change due to means changes only:						
Education	0.009	0.015	-0.006	0.009	-0.021	0.030
Potl Experience	0.039	0.030	0.009	0.039	0.083	-0.044
Family Comp	0.001	-0.031	0.032	0.001	0.008	-0.007
Other Variables	-0.028	-0.034	0.006	-0.028	-0.016	-0.012
Change due to coefficients changes only:						
Education	-0.051	-0.081	0.030	-0.051	0.369	-0.420
Potl Experience	0.046	-0.047	0.093	0.046	0.049	-0.003
Family Comp	0.054	-0.029	0.083	0.054	0.081	-0.027
Other Variables	0.064	0.111	-0.047	0.064	-0.257	0.321

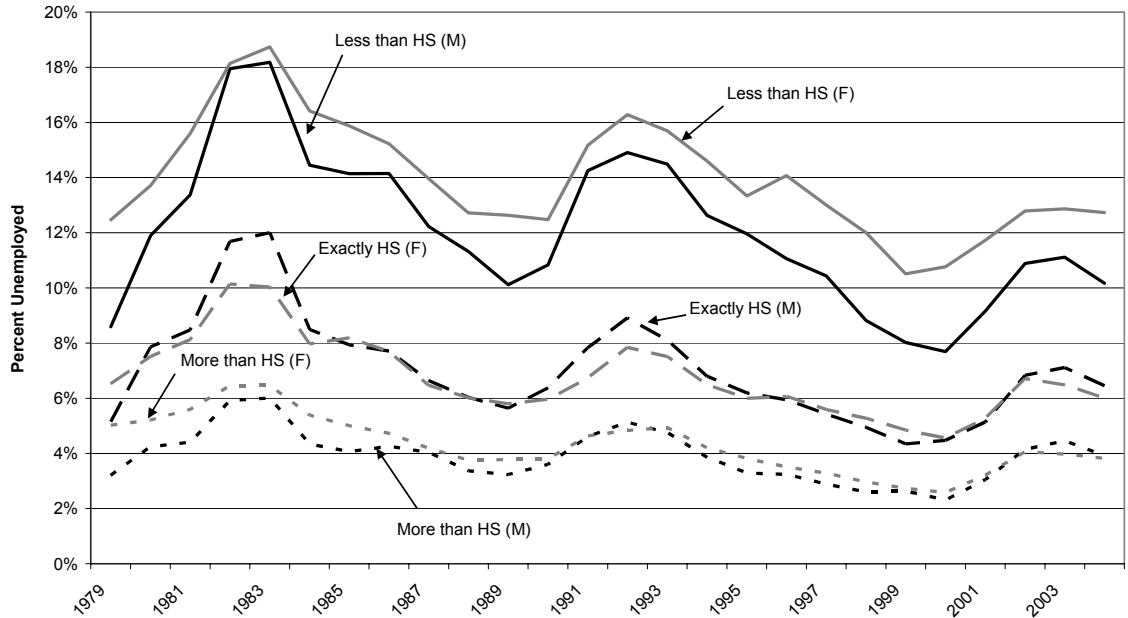
Based on estimated regressions shown in Tables 2 and 3.

Figure 1
Labor Force Participation by Skill Level, by Gender



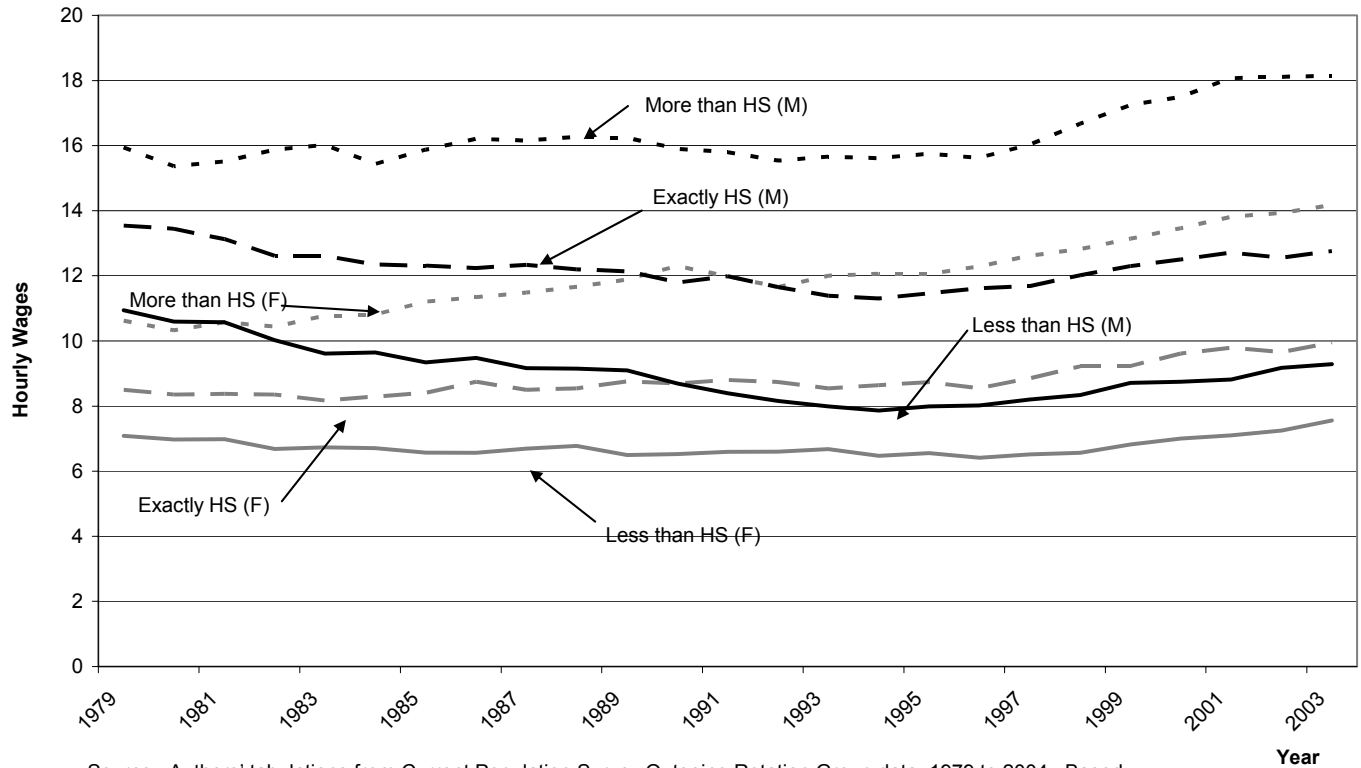
Source: Authors' tabulations from Current Population Survey Outgoing Rotation Group data, 1979 to 2004. Based on all noninstitutionalized civilian adults aged 18-54.

Figure 2
Unemployment Rates by Skill Level, by Gender



Source: Authors' tabulations from Current Population Survey Outgoing Rotation Group data, 1979 to 2004. Based on all noninstitutionalized civilian labor force participants aged 18-54.

Figure 3
Real Median Hourly Wage Rates by Skill Level, by Gender



Source: Authors' tabulations from Current Population Survey Outgoing Rotation Group data, 1979 to 2004. Based on all noninstitutionalized civilian workers aged 18-54. Inflation adjusted to 2000 dollars.

Figure 4
**Labor Force Participation by Years of Full-Time Work Experience, by Gender
 1979 and 2000, Less-Skilled Workers Only**

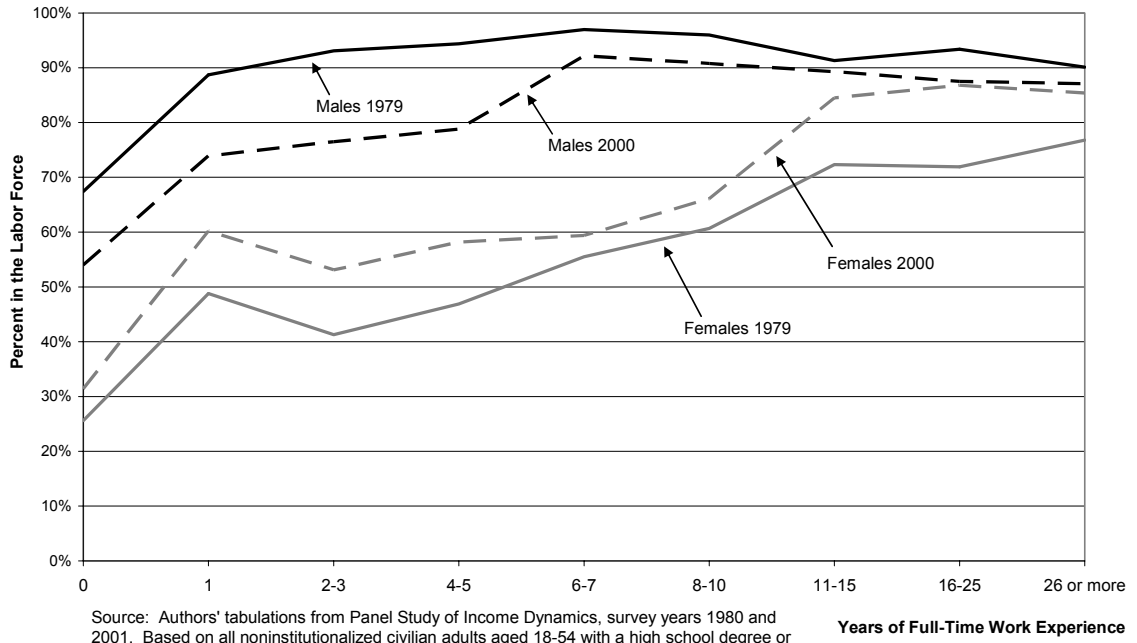


Figure 5
**Median Hourly Wages By Years of Full-Time Work Experience, by Gender
 1979 and 2000, Less-Skilled Workers only**

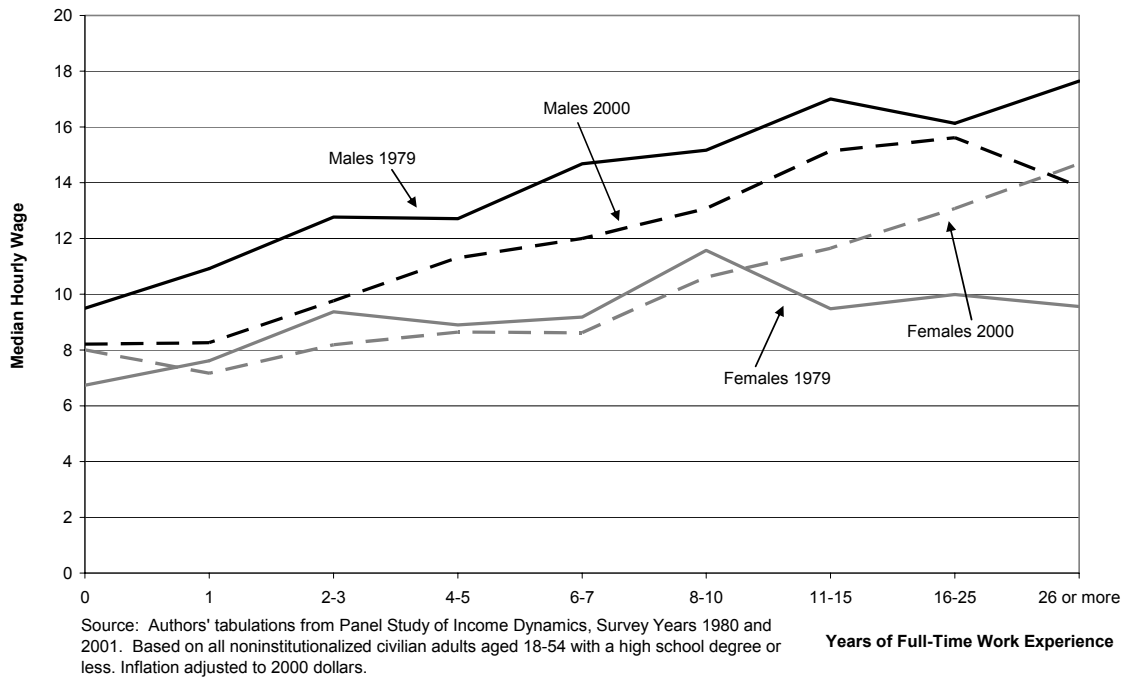
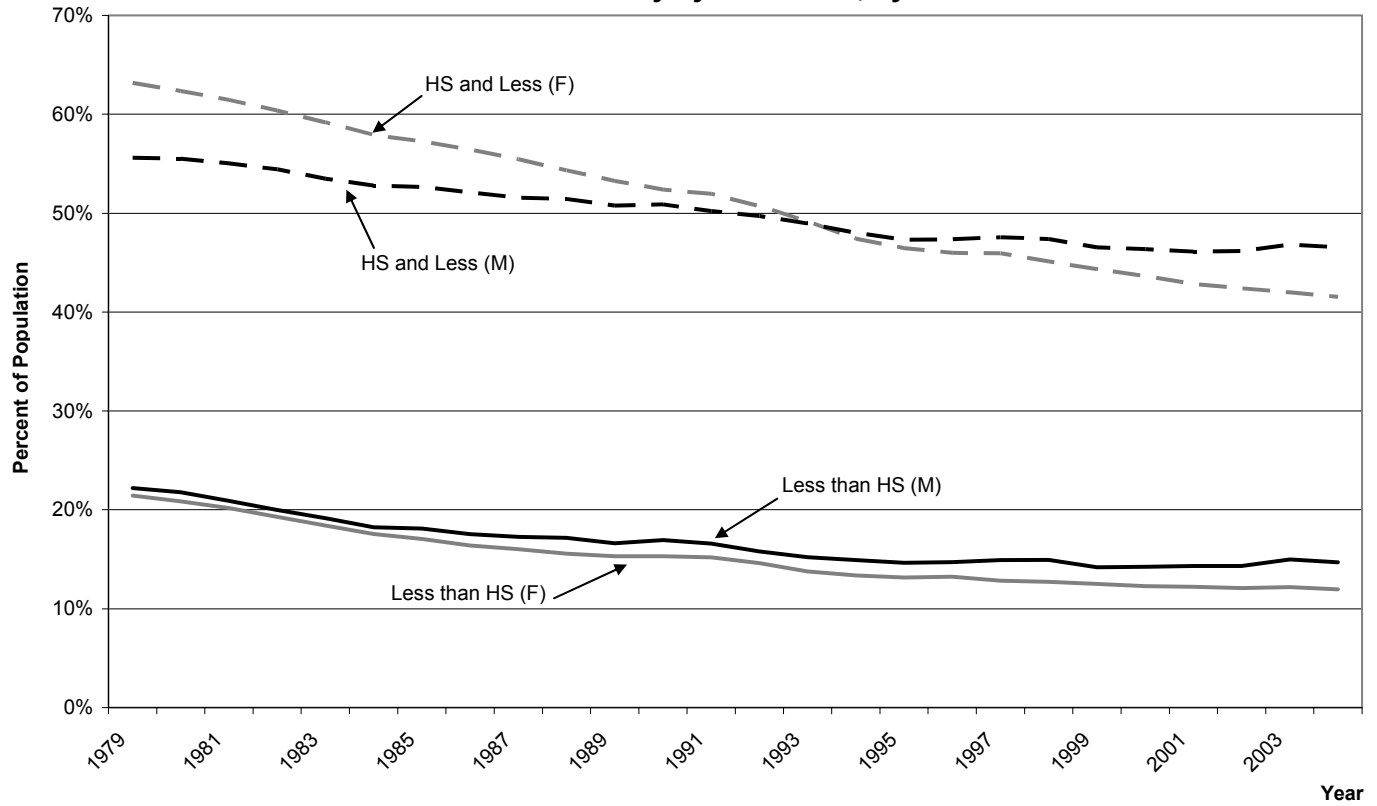


Figure 6
Education Selectivity by Skill Level, by Gender



Source: Authors' tabulations from Current Population Survey Outgoing Rotation Group data, 1979 to 2004. Based on all noninstitutionalized civilian adults aged 18-54.

Figure 7
**Labor Force Participation by Years of Education, by Gender
 1979 and 2000**

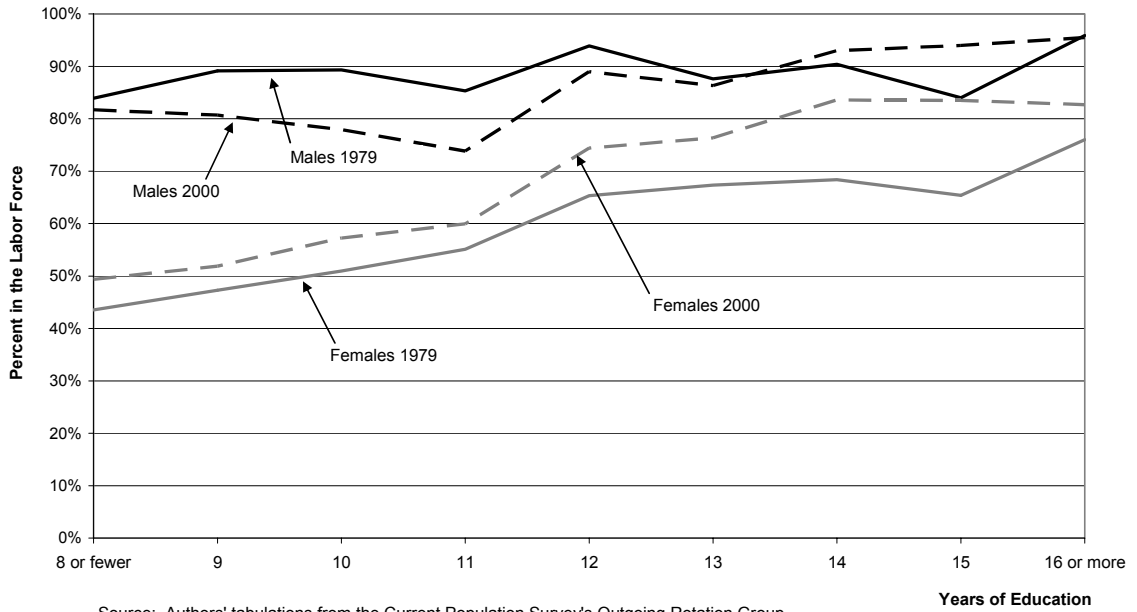


Figure 8
**Median Hourly Wages by Years of Education, by Gender
 1979 and 2000**

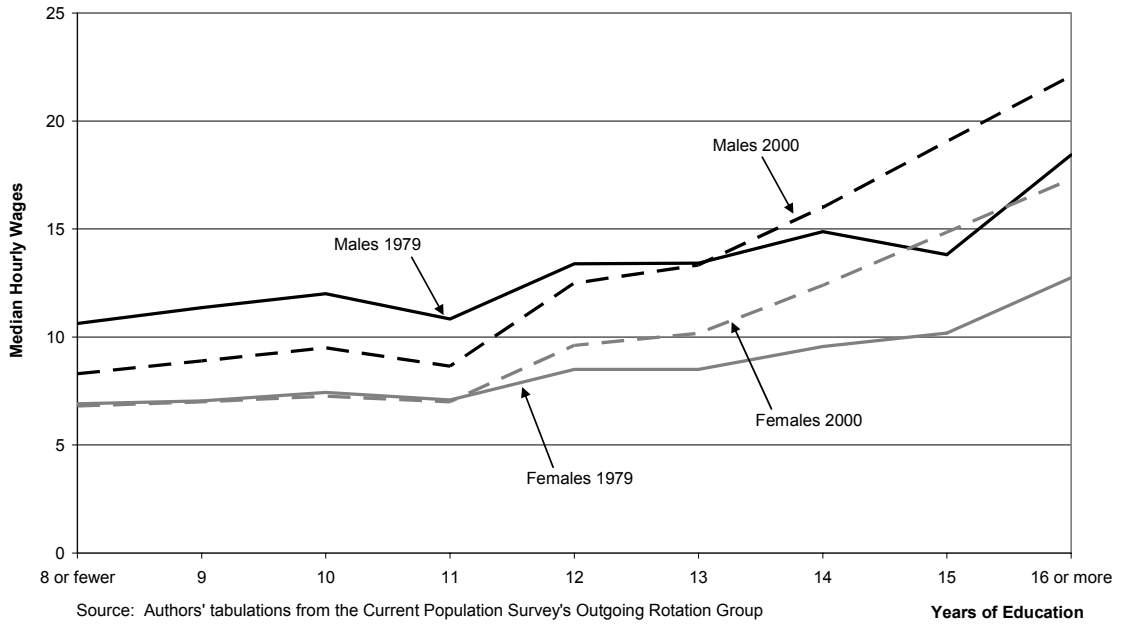
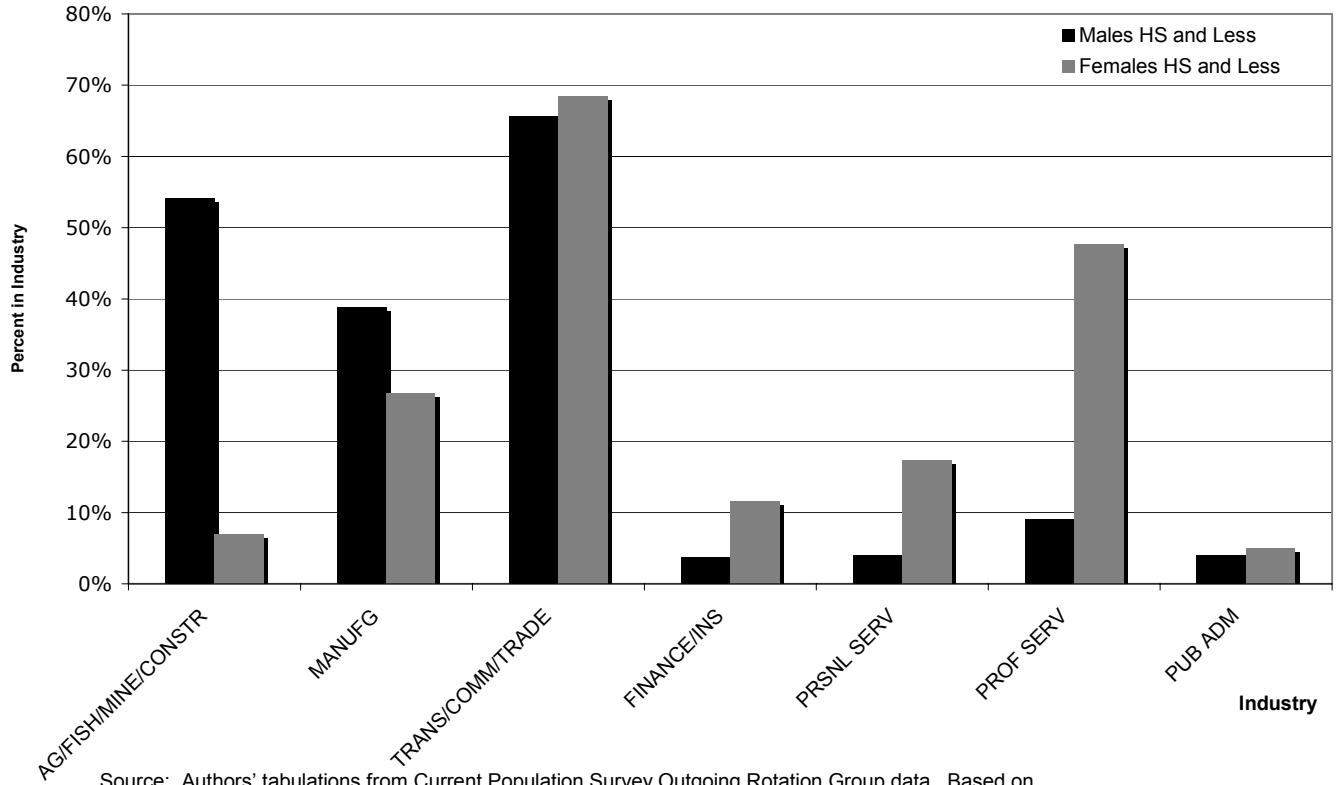


Figure 9
Industry Location Among Less-Skilled Workers, by Gender, 2002



Source: Authors' tabulations from Current Population Survey Outgoing Rotation Group data. Based on all noninstitutionalized civilian workers aged 18-54.

Endnotes

¹ Thanks are due to Ari Kushner and Emily Beam for excellent research assistance and to James Sallee for his help with construction of the data.

² The number of observations in a year ranges from 189,066 to 259,279, which provides large samples in each skill and gender group.

³ These data are inflation-adjusted to 2000 dollars with the GDP Personal Consumption Expenditures deflator.

⁴ The most dramatic growth in wages occurs among the college-educated over this time period. There is more rapid convergence in male-female wages among this group as well.

⁵ Figure 6 plots education among all adults; a plot that is based only on workers shows very similar trends. The analysis of Figure 6 ignores the possibility that what constitutes a high school degree might be shifting among men and women. For instance, less-skilled women might be taking relatively more rigorous academic courses compared to less-skilled men than they did earlier.

⁶ Figures 7 and 8 are based on data from the Current Population Survey's Outgoing Rotation Groups because of the large sample. We utilize 2000 as the end comparison date to make these figures comparable with the PSID data utilized in Figures 4 and 5. Using 2004 data for Figures 7 and 8 would not effect on the results.

⁷ This index indicates the share of women (or men) who would have to change industry in order for men and women to have equal industry distributions. Industry and occupational coding change every 10 years and it is difficult to recode across these breakpoints. We have translated the industry coding used from 1983-92 to the coding used from 1993-02, using crosswalk information provided by the U.S. Census Bureau.

⁸ This simulation assigns women's actual unemployment rate within an industry, but weights women's employment across industries using men's industry share.

⁹ This includes mandatory minimum drug sentencing laws, "three strikes" or habitual offender laws, and truth-in-sentencing laws that restrict the possibility of early release.

¹⁰ This is consistent with Juhn and Kim (1999), who look at the broader question of whether rising female labor supply has depressed male wages and find little evidence for such an effect.

¹¹ We estimated equivalent wage regressions including controls for occupation and industry. The results are generally consistent with those in Table 3, but show smaller returns to education and smaller race and ethnicity effects.

¹² Surprisingly, we know of almost no research that investigates the effects of family composition on male labor supply, although we find significant effects in Table 2. Angrist and Evans (1998) indicate that number of children have little effect on fathers' labor supply, within a very particular family composition experiment.

¹³ Others (i.e., Blau and Kahn, 1997 and 2004) have done more complex decompositions, but for the purpose of this paper we focus on the difference between changes in returns and means.