

The State of Women in the Pennsylvania Workforce 2008

Mark Price
Stephen Herzenberg
Natalie Sabadish
Tiffany Scott

The Keystone Research Center
Harrisburg, Pennsylvania

The Keystone Research Center

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About the Authors

Mark Price is a labor economist at KRC and holds a PhD in economics from the University of Utah. His dissertation, *State Prevailing Wage Laws and Construction Labor Markets*, was recognized in January 2007 with an Honorable Mention in the Best Dissertation Awards Competition sponsored by the Labor and Employment Relations Association.

Stephen Herzenberg is the executive director of KRC and holds a PhD in economics from MIT. He is a co-author of *New Rules for a New Economy: Employment and Opportunity in Postindustrial America*, published in 1998 by Cornell/ILR Press.

Natalie Sabadish is a sophomore majoring in economics at the University of Delaware in Newark, Delaware, and has been an intern at the Keystone Research Center the last two summers.

Tiffany Scott is a junior at Howard University, Washington, D.C., and was a summer intern at KRC in 2008, sponsored by the Economic Analysis Research Network (EARN) Summer Internship program. The program, a joint project of the EARN network (housed at the Economic Policy Institute), Howard University and the University of Texas-Pan American, is a 10-week internship consisting of real-world applications of economic analysis skills and policymaking. The Internship program operates with generous support from the Annie E. Casey Foundation.

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Overview

Over the last three decades of mostly bad news for the Pennsylvania middle class, one bright spot has been the economic progress of women. This progress is illustrated by the slicing in half of the so-called gender wage gap: while typical Pennsylvania women workers earned only 61 cents at the end of the 1970s for every dollar earned by typical Pennsylvania men, they now earn almost 80 cents.

In the current decade, however, during the expansion from 2001-2007, the economic progress of women in the Pennsylvania workforce stopped.

The lack of progress for women is not a result of the factor most often used to explain why some workers earn more than others: education. In fact, working-age women in Pennsylvania are now more educated than men.

In Pennsylvania and nationally, the often second-class status of women in the job market partly reflects the large number of women concentrated in the "wrong" jobs. Large numbers of women work in low-wage service jobs. These jobs are poorly paid neither because they are less skilled than all jobs that pay better nor because the work performed in them is unimportant. For example, many of the women in these jobs care for our pre-school children, vulnerable seniors, and people with physical and developmental disabilities; serve us in stores and restaurants; clean our hotel rooms and commercial buildings; and keep our offices running smoothly.

Every year beginning in 1996, Keystone Research Center has published *The State of Working Pennsylvania*. The present report, a companion to *The State of Working Pennsylvania 2008*, contains KRC's first-ever comprehensive look at the position of women in the Pennsylvania workforce. Based on official government statistics on wages, income, poverty, educational attainment, and occupational employment patterns, *The State of Women in the Pennsylvania Workforce 2008* traces the economic status of working women in the commonwealth since 1979, in absolute terms and compared to men. The latter part of the report also describes two indices that can be used to measure the economic position of women in 40 regions across the commonwealth.

Our overview of the economic status of women in the Pennsylvania workforce revealed the following main findings.

FACT 1: A large gender wage gap persists in Pennsylvania and nationally.

Women in Pennsylvania and the United States still earn only about 80% of what men earn—measured by the ratio of the hourly wages of a typical (median-wage) female worker to the hourly wages of a typical (median-wage) male worker. Eighty percent represents a sharp improvement compared to 1979, when the gender wage gap in Pennsylvania stood at 61%. Most of the shrinkage in the gender wage gap took place from 1979 to the early 1990s.

- Since 2003, women in the Pennsylvania workforce have lost ground slightly, relative to men, leaving the 2007 gender wage gap at nearly $4 per hour. (In 2007, Pennsylvania women earned a median wage of $13.25 per hour compared to $16.97 per hour for men.)

• Since 2003, Pennsylvania women have seen their inflation-adjusted median hourly wage fall by roughly 45 cents per hour. (Men have seen their wages fall over this period by 17 cents per hour.)

FACT 2: Three out of 10 Pennsylvania women are low-income, compared to just over two in 10 Pennsylvania men.

One standard measure of low-income status used by economists relies on 200% of the official poverty line as a rough approximation of the income necessary for a family to pay for a minimally adequate family budget. Based on this measure, nearly 30% of Pennsylvania women aged 16 and over were low income in 2007, compared to 21% of men.

FACT 3: The gender wage gap is not primarily the result of educational gaps—in fact, Pennsylvania women in the workforce now have higher education levels than Pennsylvania men.

As recently as the late 1970s, Pennsylvania men had substantially higher education levels than women. In 1979, for example, one-and-a-half times as big a share of adult men (25-64) had a college degree as did women (18% versus 11%). In 2007, for the first time, the share of Pennsylvania working-age women with a college degree climbed above the same share for men—both shares are roughly 30%. Today, a larger share of working-age Pennsylvania women than men have also graduated from high-school, and have at least some college education.

FACT 4: Women earn less than men partly because of occupational segregation. Women are especially overrepresented in certain lower-paying service occupations, such as caregiving.

America has changed profoundly since 1940 when 70% of employed female college graduates were grade school teachers, nurses, librarians, clerical, or social workers—and less than 15% were doctors, lawyers, professors, managers, and scientists. America has also changed a lot since 1965 when one in 20 or fewer of the entrants to law school, business school, and dental school were women (and one in 10 or fewer of those entering medical school were women).

Despite these changes—and the progress made by women in many professions—occupational segregation persists. For example, in Pennsylvania:

• Nine of every 10 child care workers are women.

• 80% of waiters and waitresses and 75% of cashiers are women.

• Almost 40% of women work in occupations in which at least eight out of 10 members of the occupation are women, down from 47% in 1980 but still substantial.

The occupations in which women concentrate also tend to be low wage. For example, over the 2005-07 period, the median annual pay for Pennsylvania women in the 10 occupations with the largest number of women equaled $35,417. This is only 84% of the $42,194 that men earn in the 10 (completely different) occupations with the largest number of male workers.

A second reason that Pennsylvania women's wages trail men's is that women are under-represented

in the highest-paying jobs, especially within management. Women make up only 15 percent of the highest paid one-tenth of managers, who earn more than $170,000 annually. By contrast, women make up more than half of the lowest-paid third of managers, who earn below about $50,000 per year.

FACT 5: The position of women in the Pennsylvania labor market mirrors the position of women nationally.

By some measures of outcomes for women in the workforce, Pennsylvania does a bit worse than the United States as a whole. For example, based on median hourly wages, U.S. women earn 81% of what men earn compared to 78% in Pennsylvania. Pennsylvania also ranks 34th out of the 50 states based on an index of employment and earnings created by the Institute for Women's Policy Research in Washington, D.C. But the basic Pennsylvania story for women in the workforce since 1979 is a variation on the U.S. story—substantial progress from 1979 to the early 1990s, limited progress relative to men since then, and essentially no progress in the last few years. The gender wage gap is a U.S. problem, not just a Pennsylvania problem.

FACT 6: The status of Pennsylvania women in the job market varies substantially within Pennsylvania.

The gender wage gap exists throughout Pennsylvania. Nonetheless, the relative status of women in the workforce—measured not only by the gender wage gap but also by education levels, labor force participation, the share of women in managerial and professional occupations, poverty levels, and the share of businesses that are women-owned—does vary within the state. Women tend to fare better in areas with high concentrations of professional jobs, including the Philadelphia, Pittsburgh, Harrisburg, and Allentown-Bethlehem-Easton metropolitan areas. Women fare less well in rural areas with small proportions of professional jobs and large proportions of low-wage service jobs.[1]

In 18 Pennsylvania counties women earn less than 70% or what men earn. The largest gap is in Beaver County, where women earn only 62% of what men earn.

Readers can find how women fare in Pennsylvania regions by going online to http://www.keystoneresearch.org/womensearnings/bycounty.html or by looking at the maps in the Appendix of this report on pages 41-44.

Policy: Improving Jobs for Women

The policy implications of this report are straightforward. To improve the status of women in the Pennsylvania workforce, policymakers need to improve jobs in the portions of the job market dominated by lower-wage working women. As explained at the end of this report, and in more detail in *The State of Working Pennsylvania 2008*, there are three straightforward ways to accomplish this:

- **The first way is to lift wage levels at the low end of the labor market directly through public policy.** One option in this category is raising the minimum wage. This especially benefits women because they ordinarily make up a large share of wages just above the minimum.[2] Another option is

1. Evidence on the composition of jobs in rural versus urban Pennsylvania can be found in Keystone Research Center's (KRC's) *The State of Rural Pennsylvania*, online at www.keystoneresearch.org.

2. The precise share of men and women who would benefit from any given minimum wage increase depends on the labor market

establishing occupational wage and benefit standards for low-wage service occupations funded substantially through public funds, such as caregiving occupations. In these occupations, such wage and benefit standards deliver a double benefit because, as well as improving jobs, they lower workforce turnover and improve care quality for consumers.

• **The second way is to strengthen career paths that enable low-wage women to work their way up to family supporting jobs.** Pennsylvania, thanks to its cutting edge workforce development strategy, leads the nation in implementing on a large scale career building strategies within key industries. A new administration in Washington should make the strengthening of career paths out of low-wage entry level jobs a national priority. For women, one opportunity to improve career advancement is through expanding access to jobs in traditionally male occupations (e.g., in construction, some technical fields, and manufacturing).

• **The third approach, which would also facilitate the first two approaches, is to strengthen workers' rights to choose union representation.** John Schmitt of the Center for Economic and Policy Research (CEPR) recently estimated that unionization raises the wages of the typical low-wage worker by 20.6 percent.[3] Particularly powerful for low-wage women in the workforce would be a right for all workers in low-wage non-mobile service industries to choose union representation at one time. Achieving representation across whole geographical areas enables unions to lift regional wage and benefit standards. It does this without disadvantaging any employers, because wages are taken out of competition locally, and these types of service industries do not compete against employers in other regions. (You can't deliver health care in Harrisburg, Tioga County, or Pittsburgh from Tijuana, Mexico.) Area-wide unionization also makes it possible for unions to collaborate with employers to increase training and strengthen career ladders throughout the whole regional industry, improving quality and service as well as jobs.

One benefit of these policy prescriptions is that they cost government little or no money. They would improve wages and incomes for women *before* taxes. More women—and more workers of both genders—would earn enough to support their families without public assistance.

As are its policy prescriptions, the bottom line of this report is also simple: women in the Pennsylvania workforce need the same policies that an increasing share of all Pennsylvania workers need—they just need them even more.

situation when the minimum wage is increased and the size of the proposed increase. In 2005, KRC estimated that 65% of those benefiting directly from a minimum wage increase from $5.15 to $7.15 per hour would be women. See *The State of Working Pennsylvania 2005*, online at www.keystoneresearch.org.

3. John Schmitt, *The Union Wage Advantage for Low-Wage Workers*, Center for Economic and Policy Research, May 2008, online at www.cepr.org

Overview of the Employment and Earnings and Social and Economic Autonomy of Women of Color in Pennsylvania					
	All Women	**White**	**Black**	**Asian**	**Hispanic**
Employment and Earnings					
Median Annual Earnings (for full-time, year-round employed women)	$32,891	$33,215	$32,381	$34,080	$25,804
Earnings Ratio Between Women and White Men	72%	73%	71%	75%	57%
Women's Labor Force Participation	57%	57%	58%	58%	54%
Employed Women in Managerial and Professional/Technical Occupations	14%	14%	12%	21%	9%
Social and Economic Autonomy					
Percent of Women 25 and Older with a Bachelor's Degree or More	24%	25%	15%	48%	16%
Percent of Women 16 and Older Above the Poverty Line	88%	91%	74%	87%	72%

Note. Data on race and ethnicity were recoded such that people of Hispanic ethnicity may be of any race or two or more races and all racial groups (White, Black and Asian) exclude Hispanics.
Source. KRC analysis of the 2005-2007 ACS.

Women in the Pennsylvania Workforce

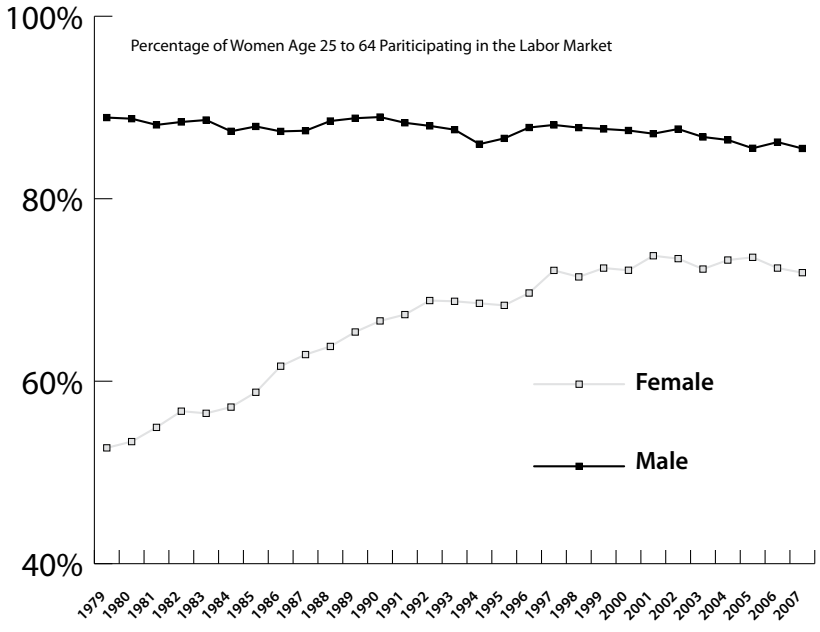
During the 2008 Pennsylvania presidential primary election and general election campaign, working women have become a focus of both state and national political debate. This report takes a comprehensive look at the economic status of Pennsylvania women who work outside the home and highlights the challenges that they face.

In the era leading up to the passage of the Civil Rights Act of 1964, which prohibited discrimination based on gender as well as race, men were typically the primary earners in the American family—the breadwinners. Many women, especially if they were married with young children, did not (sometimes could not) participate in the labor force. In 1940 in the United States, for example, only about 15% of white women ages 35 to 44 participated in the labor force.[4] When women did participate in the labor force, even those with a college degree were restricted to a select few occupations above the entry level, such as nurse, teacher, and librarian.[5]

Changing social attitudes backed up by legal prohibitions against overt discrimination opened the door for millions more women to enter and stay in the labor force. An expanding number of single parent female-headed households also increased the economic need for women to enter and stay in the job market. Reflecting both economic and social forces, from 1950 to 1980 in the United States, the female share of the U.S. labor force (16 years and older) jumped from 33.9% to 51.5%.[6]

In the 1980s, falling male wages added a new economic incentive for many women to work and helped produce another uptick in the number of women working outside the home (Figure 1). In 1979, just over half of all Pennsylvania women age 25 to 64 participated in the labor market; by 2007 that number had risen to over seven in 10 women (72%).[7]

Figure 1. Today Just Over Seven in Ten Women Participate in the Labor Market



Source. Keystone Research Center (KRC) analysis of Current Population Survey (CPS) data

4. Claudia Goldin, "The Quiet Revolution That Transformed Women's Employment, Education, and Family," *AEA Papers and Proceedings*, 96(2), May 2006, pp. 1-21, online at http://www.economics.harvard.edu/faculty/goldin/files/GoldinEly.pdf.

5. See Goldin, "The Quiet Revolution," Figure 8, p. 13. This Figure shows that, from 1940 to 1970, 60-70% of college educated women workers aged 30-34 were grade school teachers, nurses, librarians, social or religious workers, secretaries and other clerical workers; meanwhile, only 13-24% were doctors, lawyers, professors, managers, and scientists. By the year 2000, the share of working college-graduate women in the first group of occupations had plunged to 30% whereas the share in the second and higher-paying group had risen to 45%.

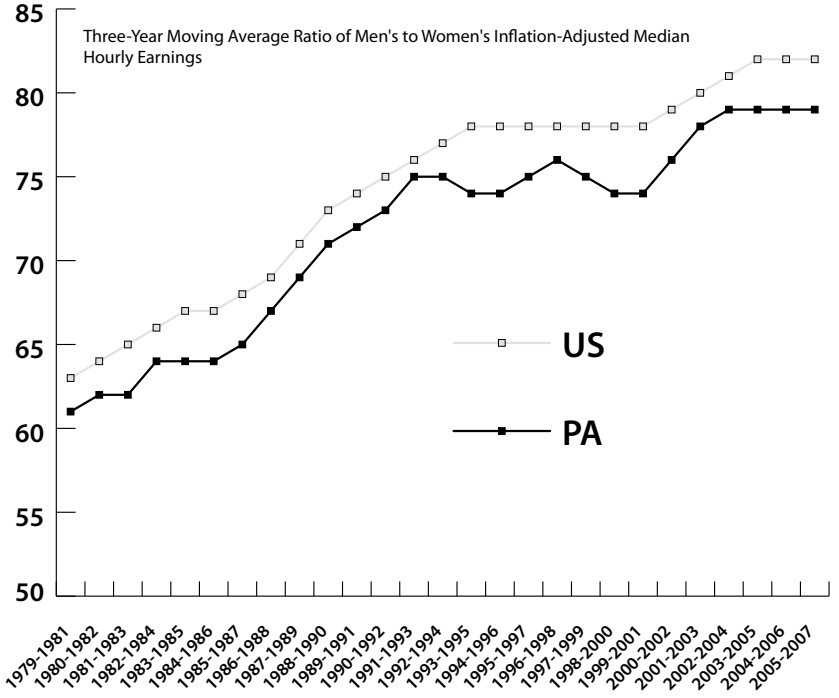
6. Mitra Toossi, "A Century of Change: the U.S. Labor Force, 1950–2050," *Monthly Labor Review*, May 2002, pp. 15-28, online at http://www.bls.gov/opub/mlr/2002/05/art2full.pdf.

7. In 1979, according to the Current Population Survey (CPS), 58% of all U.S. women age 25 to 64 participated in the labor mar-

The Gender Wage Gap: Stalled Near 80%

The "gender wage gap" is a concept used by economists to describe the extent to which the wages of American women lag the wages of American men. One way to measure the gender wage gap is to compare the earnings of a typical female wage earner (in the middle of the female earnings distribution) with the earnings of a typical male wage earner (in the middle of the male earnings distribution).[8]

Figure 2. The Gender Wage Gap



Source. Economic Policy Institute (EPI) Analysis of CPS data.

Since 1979, the evolution of female and male wages breaks into three distinct periods. In the first period, from the 1980s through the early 1990s, men's and women's wages were on opposite trajectories. Driven by job losses in high-wage manufacturing and by wage declines in the deregulated trucking industry (and to a lesser extent, construction), the wages of the typical Pennsylvania male declined by 12% between 1979 and 1993, from $18.11 per hour to $15.98 per hour. Meanwhile, Pennsylvania women's earnings increased 9% from $11.05 per hour in 1979 to $12.05 per hour in 1993. Over this period, Pennsylvania women went from earning 61% of the male wage in 1979 to earning 75% of the male wage in 1993.

From 1993 to 2001, during the long economic expansion that largely coincided with the two presidential terms of Bill Clinton, men's and women's wages in Pennsylvania moved in the same direction. Strong employment growth drove wages for typical male earners and typical female earners up by about 10%. In the third period, since 2001, weaker labor markets have translated into a decline in men's wages of 4%, while women's earnings are more or less unchanged. In 2007, Pennsylvania women earned 78% of the male wage.

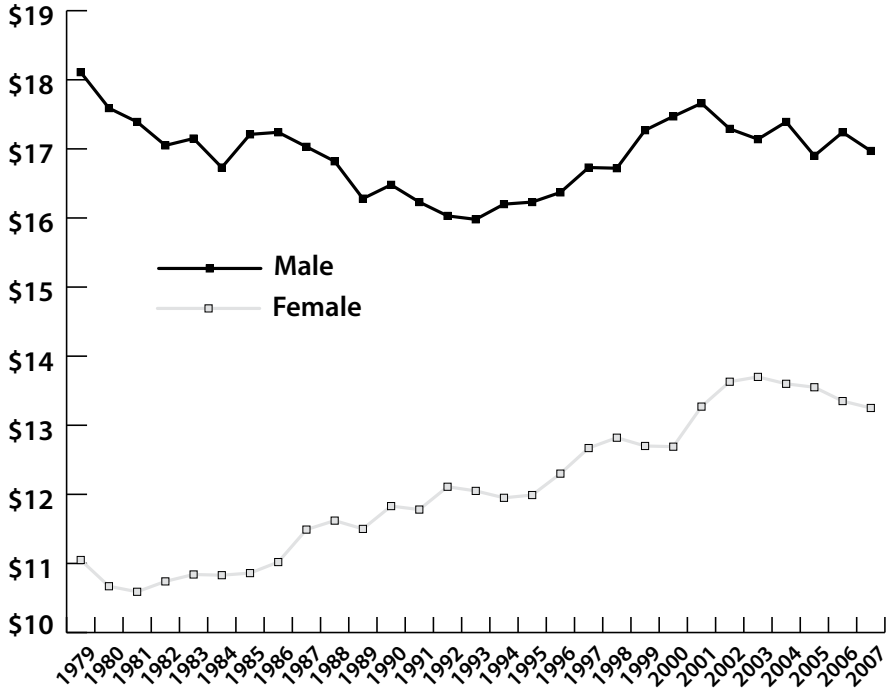
A Third More Women Than Men Are Low Income

Another measure of economic well-being is low-income status. Perhaps the most familiar measure of low-income status is poverty. In the last decade, however, many researchers have come to rely on twice the

ket; by 2007 that number had risen to 72%.

8. The gender gap between 1979 and 2007 in Pennsylvania is very similar if measured by the ratio of women's and men's average wages instead of by the ratio of median wages. While this study of the gender gap, and most others, compare hourly or annual earnings of men and women in particular years, Stephen Rose and Heidi Hartman instead follow a group of prime-age (26 to 59 year old) women and men for a 15-year period (from 1983-1998) . They thus take into account the impact on long-term relative earnings of women's lower work hours and years of zero earnings due to family care. Over the full 15-year period, Rose and Hartman found that prime-wage working woman earned only 38 percent of what prime-age working man earned. See Stephen J. Rose and Heidi Harman, *Still a Man's Labor Market: The Long-Term Earnings Gap* (Washington, DC: Institute for Women's Policy Research, 2004).

Figure 3. Inflation Adjusted Median Hourly Wages in Pennsylvania, 1979-2007



Source. EPI analysis of CPS data.

poverty level as a better rough measure of low-income status. This judgment is based partly on research showing that the cost of a bare bones family budget is about 200% of the poverty level in most parts of the United States. (In some urban areas with high costs of living, a minimally adequate family budget is well above 200% of poverty.)

The share of men and women with incomes below 200% of the poverty line has changed little since 1979. In 2005-2007, 28% of women in Pennsylvania lived below 200% of the poverty line, compared to 21% of men (Figure 4).

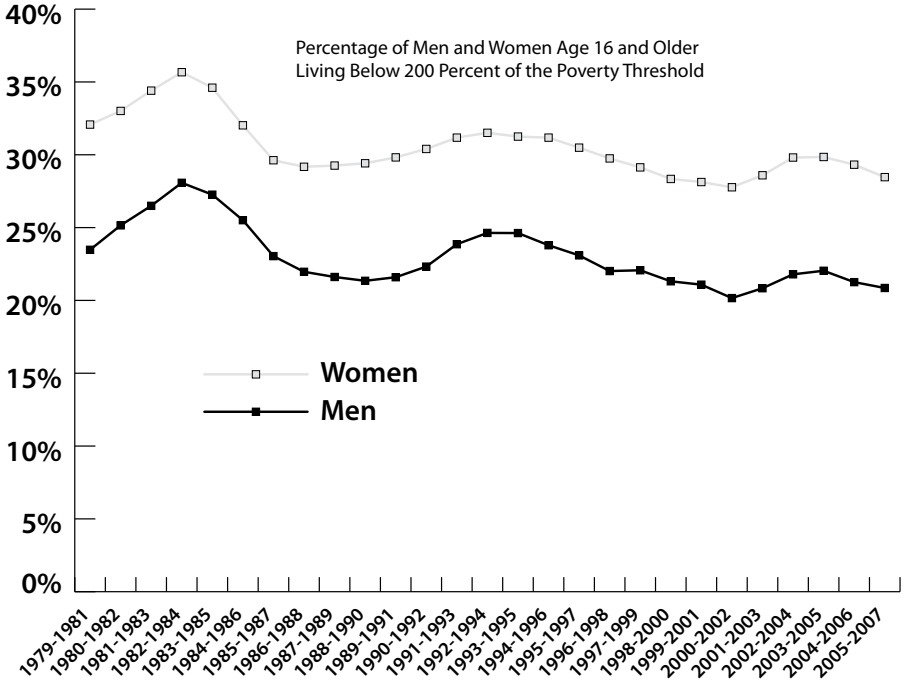
Women Are Now More Educated Than Men

One factor that often correlates with wage gaps among workers is education, with more highly educated workers enjoying higher earnings. When it comes to the gender wage gap in Pennsylvania, however, education does not appear to explain why men earn less than women. In fact, measured by the share of adults 25-64 with a college degree, Pennsylvania women are now slightly more educated than Pennsylvania men (Figure 5).

All across the educational spectrum, in fact, Pennsylvania women are now more educated than men (Table 1). A higher share of Pennsylvania women than men have "some college" education (at least some courses beyond high school) as well as a college degree. A lower share of Pennsylvania women than men have only a high school education or no high school diploma at all. Taking both of these last two groups combined, over half of Pennsylvania men (51.3%) have no more than a high-school degree, whereas only 46% of women have no more than a high-school degree.

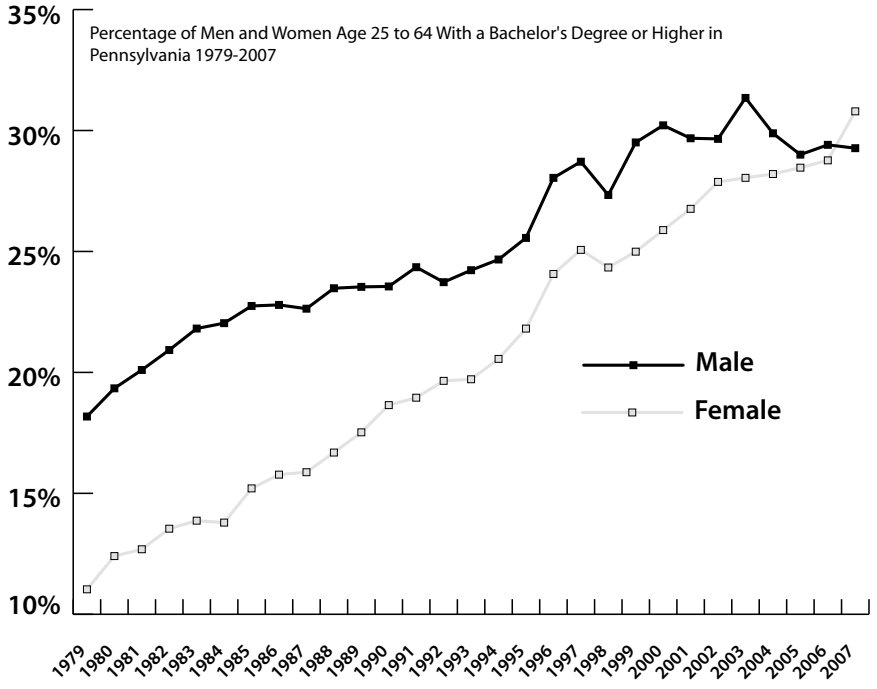
The gender wage gap persists in Pennsylvania at each level of education considered separately. For example,

Figure 4. The Share of Men and Women With Incomes Below 200% of the Poverty Line Has Changed Little Since 1979



Note. Sample is limited to all civilians age 16 and older.
Source. Keystone Research Center analysis of the March CPS

Figure 5. Women in Pennsylvania Are Now As Likely to Have at Least Bachelor's Degree or Higher



Source. KRC analysis of CPS data

among women employed full-time, year-round, those with a bachelor's degree earn $43,277 or just 71% of the $60,714 annual pay earned by the typical man with a bachelor's degree (Table 3).[9] Women with advanced degrees fare no better, earning $57,945 or just 69% of the pay of a typical male with an advanced degree. In general, women with higher educational attainment earn a bit less than men one or two educational tiers lower. For example, women with a bachelor's degree earn a bit less than men with an associate's degree. Women with an associate's degree earn less than men with a high school degree or less.

Table 1. Educational Attainment, Pennsylvania 1979-2007, Men and Women Age 25 to 64

Year	Female				Male			
	Less than high school	High school graduate	Some college	Bachelor's degree or higher	Less than high school	High school graduate	Some college	Bachelor's degree or higher
1979	26.4%	51.6%	11.0%	11.0%	27.7%	40.8%	13.4%	18.2%
1980	25.7%	50.9%	11.0%	12.4%	25.9%	40.8%	14.0%	19.3%
1981	25.3%	50.0%	12.1%	12.7%	24.4%	42.2%	13.3%	20.1%
1982	23.4%	51.4%	11.6%	13.5%	22.8%	43.5%	12.7%	20.9%
1983	21.3%	52.5%	12.3%	13.9%	20.9%	43.1%	14.2%	21.8%
1984	19.7%	53.7%	12.8%	13.8%	18.9%	43.6%	15.4%	22.0%
1985	18.3%	53.7%	12.8%	15.2%	18.4%	43.7%	15.2%	22.7%
1986	16.5%	53.6%	14.1%	15.8%	19.0%	43.2%	15.1%	22.8%
1987	15.6%	53.3%	15.3%	15.9%	18.5%	43.6%	15.2%	22.6%
1988	15.1%	52.7%	15.4%	16.7%	17.6%	44.1%	14.9%	23.5%
1989	15.6%	52.6%	14.3%	17.5%	15.7%	44.6%	16.1%	23.5%
1990	13.5%	52.2%	15.6%	18.6%	15.1%	44.6%	16.8%	23.6%
1991	12.5%	51.7%	16.8%	19.0%	13.9%	44.9%	16.9%	24.3%
1992	12.0%	49.9%	18.5%	19.7%	13.1%	45.0%	18.1%	23.7%
1993	12.1%	49.0%	19.3%	19.7%	12.6%	44.4%	18.9%	24.2%
1994	12.1%	47.1%	20.3%	20.6%	13.0%	43.8%	18.6%	24.7%
1995	11.3%	45.6%	21.3%	21.8%	12.6%	42.6%	19.2%	25.6%
1996	10.9%	44.7%	20.4%	24.1%	12.5%	40.8%	18.7%	28.0%
1997	10.0%	45.4%	19.5%	25.1%	10.9%	41.6%	18.8%	28.7%
1998	10.5%	44.7%	20.5%	24.3%	11.2%	42.2%	19.2%	27.3%
1999	9.5%	44.5%	20.9%	25.0%	10.2%	42.0%	18.3%	29.5%
2000	9.0%	42.9%	22.2%	25.9%	9.6%	41.4%	18.8%	30.2%
2001	8.9%	41.9%	22.5%	26.8%	9.3%	41.3%	19.7%	29.7%
2002	8.6%	41.6%	21.9%	27.9%	8.7%	41.5%	20.1%	29.7%
2003	8.2%	41.9%	21.8%	28.0%	9.1%	40.0%	19.5%	31.3%
2004	8.2%	41.9%	21.7%	28.2%	9.3%	40.5%	20.3%	29.9%
2005	8.4%	40.7%	22.4%	28.5%	9.4%	40.8%	20.8%	29.0%
2006	7.7%	40.0%	23.6%	28.8%	8.2%	42.2%	20.2%	29.4%
2007	7.2%	38.8%	23.3%	30.8%	8.9%	42.4%	19.4%	29.3%

Source. KRC analysis of CPS data

Men and Women Tend to Work in Different Occupations

If education doesn't explain why women earn less than men, what does explain the gender wage gap? One important candidate is occupational segregation, the heavy concentration of women and men in different occupations, women in lower paying and men in higher paying.

9. This report relies extensively on public use data from the American Community Survey (ACS) made available by Steven Ruggles, Matthew Sobek, Trent Alexander, Catherine A. Fitch, Ronald Goeken, Patricia Kelly Hall, Miriam King, and Chad Ronnander, Integrated Public Use Microdata Series: Version 4.0 [Machine-readable database] (Minneapolis, MN: Minnesota Population Center [producer and distributor], 2008). Data from and documentation for this source are available online at http://usa.ipums.org/usa/.

Table 2. Inflation-Adjusted Median Annual Earnings by Gender and Educational Attainment (2007 dollars)			
Educational Attainment	**Women**	**Men**	**Gap**
High school or less	$25,869	$35,821	72%
Some college, no degree	$26,799	$37,044	72%
Associate's degree	$34,621	$45,440	76%
Bachelor's degree	$43,277	$60,714	71%
Master's/Professional/Doctorate	$57,945	$84,389	69%
Note. Sample limited to workers employed full-time, year-round. *Source*. Keystone Research Center analysis of the 2005-2007 American Community Survey			

Table 3 has both goods news and bad news when it comes to occupational segregation. The table presents the female share of employment (including those employed part-time[10]) in 15 commonly recognized occupations between 1980 and 2005-2007. The good news: women in Pennsylvania have substantially expanded their share of many professional occupations and some managerial ones:

- The female share of teachers at colleges and universities rose from 33% in 1980 to 46% today.

- The female share of lawyers and physicians climbed from 13%-14% in 1980 to 30% and 32% respectively today.

- The female share of financial managers increased from 25% in 1980 to 53% today.

Table 3. Proportion of Women in 15 Occupations		
Occupation	**1980**	**2005-2007**
Automobile mechanics	0.4%	1%
Carpenters	1%	2%
Cashiers	85%	75%
Child care workers	93%	90%
Computer systems analysts	18%	32%
Engineers	4%	10%
Financial managers	25%	53%
Lawyers	14%	30%
Nurses	97%	91%
Physicians	13%	32%
Police and detectives	6%	15%
Social workers	60%	77%
Teachers, college and university	33%	46%
Teachers, elementary	69%	75%
Waiters and waitresses	92%	80%
Note. Sample includes all employed workers including those working only part-time. *Source*. Keystone Research Center analysis of the 1980 Census and the 2005-2007 American Community Survey		

10. The shares of men and women in different occupations (and reported in Table 3) do not change in a material way when the sample is limited to workers employed full-time, year-round as opposed to including all employed workers. (A worker employed "full-time, year-round" works at least 35 hours per week and at least 50 weeks per year.) In 1980, 41% of employed women and 64% of employed men worked full-time, year-round. By 2005-2007 the share of employed women working full-time, year-round increased to 50% while the share of men working full-time was unchanged at 64%.

However some occupations remain very heavily female- or male-dominated. For example:

- Nine of 10 child care workers are women.
- 80% of waiters and waitresses and 75% of cashiers are women.
- Just 2% of carpenters in Pennsylvania are women.

Moving beyond individual occupations to examine the overall extent of occupational segregation, we can compute the share of all female workers employed in occupations in which women make up a large majority—at least eight of 10—of workers. In 1980, 47% of all women were in such highly segregated occupations versus 39% of all women today (Figure 6). An even larger share of men than women work, and worked, in highly segregated occupations: 56% in 1980 and 45% today (Figure 7).[11]

Despite some reduction in occupational segregation, no occupation today is among the 10 occupations with the most employment for both women and men (Table 4).

Occupational Segregation Helps Explain the Wage Gap

Women are not only concentrated in different occupations than men, they are also concentrated in occupations that tend to pay less than male-dominated occupations. For example, the median pay for women employed in the top 10 female occupations between 2005 and 2007 was $35,417 a year (Table 4). This is only 84% of the annual earnings of $42,194 earned by the typical male in the 10 male occupations.

Box 1 (page 24) summarizes findings from more sophisticated research that attempts to explain the gender gap. In general, there is a consensus that occupational segregation is an important contributor to the gender gap but there is not a consensus on either how important a contributor it is or on the deeper question of how best to research this issue.

Women Also Earn Less Than Men Within Occupations

Occupational segregation does not entirely explain the gender wage gap: even within the same occupation, women still tend to earn less than men.

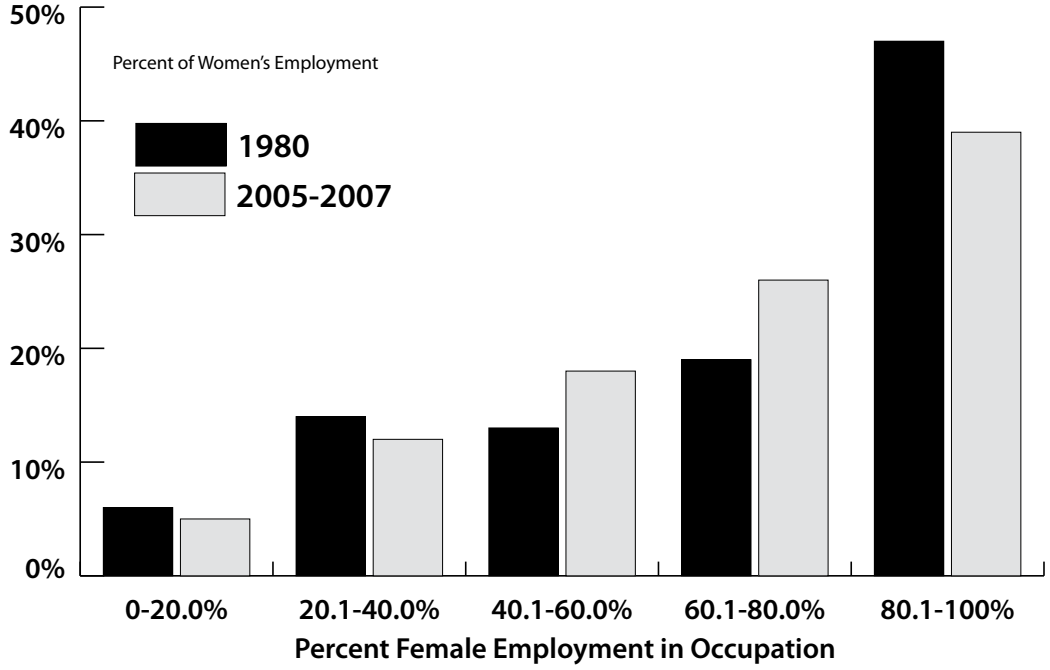
A gender wage gap exists within high-paying (Table 5) and low-paying (Table 6) occupations. For example, at the high end in Pennsylvania:

- Female lawyers and judges earn $75,734 a year, while their male counterparts earn $103,473.
- The median salary for female top executives is $98,300, only 90% of the median salary of $108,191 for male top executives.

11. In 2005-07, 52% of Pennsylvania women (or men) would have had to change occupations in order for the share of women in each occupation to match the share of women in total employment (48%). In 1980, 60% of Pennsylvania women would have had to change occupations in order for the share of women in each occupation to match the female share of total employment in that year (41%). For background on the methodology used to make these calculations, see O.D. Duncan and B. Duncan, "A Methodological Analysis of Segregation Indexes," *American Sociological Review*, 1955, vol. 20, pp. 210-17. For estimates for the United States, see Barbara H. Wotton, "Gender Differences in Occupational Employment," *Monthly Labor Review*, April 1997.

Figure 6. Over Time the Concentration of Women in Predominantly Female Occupations has Declined in Pennsylvania

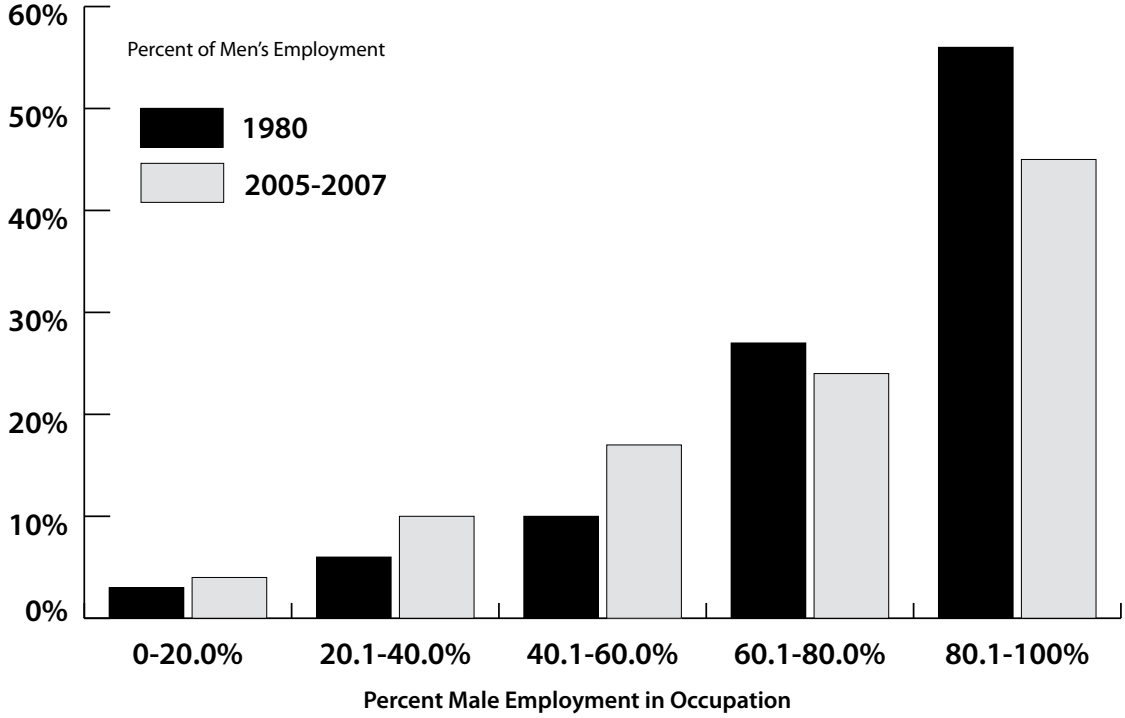
Distribution of female employment among occupations employing varying concentrations of women, 1980 and 2005-2007



Note. Sample includes both full- and part-time workers
Source. Keystone Research Center analysis of the 2005-2007 American Community

Figure 7. Over Time the Concentration of Men in Predominantly Male Occupations has also Declined in Pennsylvania

Distribution of male employment among occupations employing varying concentrations of male, 1980 and 2005-2007



Note. Sample includes both full- and part-time workers
Source. Keystone Research Center analysis of the 2005-2007 American Community Survey

Table 4. Ten Largest Occupations by Gender for Full-Time, Year-Round Workers in Pennsylvania

Women				Men			
Occupation	**Number of Women Employed in the Occupation**	**Percent Employed of Total Female Employment**	**Median Earnings for Women in the Occupation**	**Occupation**	**Number of Men Employed in the Occupation**	**Percent Employed of Total Male Employment**	**Median Earnings for Men in the Occupation**
Secretaries and Administrative Assistants	125,623	8.1%	$30,938	Driver/Sales Workers and Truck Drivers	96,329	4.6%	$40,476
Registered Nurses	71,212	4.6%	$56,260	Laborers and Freight, Stock, and Material Movers, Hand	62,458	3.0%	$31,042
Nursing, Psychiatric, and Home Health Aides	48,444	3.1%	$23,802	Miscellaneous Managers including Postmasters and Mail Superintendents	64,423	3.0%	$75,734
Elementary and Middle School Teachers	42,061	2.7%	$45,131	First-Line Supervisors/Managers of Retail Sales Workers	51,266	2.4%	$42,424
Customer Service Representatives	39,708	2.6%	$29,212	Janitors and Building Cleaners	44,859	2.1%	$26,506
First-Line Supervisors/Managers of Office and Administrative Support Workers	37,707	2.4%	$36,894	Sales Representatives, Wholesale and Manufacturing	39,534	1.9%	$64,915
First-Line Supervisors/Managers of Retail Sales Workers	37,314	2.4%	$28,536	First-Line Supervisors/Managers of Production and Operating Workers	33,999	1.6%	$48,686
Bookkeeping, Accounting, and Auditing Clerks	33,013	2.1%	$32,381	Other production workers including Semiconductor Processors and Cooling and Freezing Equipment operators	31,599	1.5%	$35,417
Miscellaneous Managers including Postmasters and Mail Superintendents	30,845	2.0%	$54,095	Retail Salespersons	35,445	1.7%	$35,417
Accountants and Auditors	28,926	1.9%	$44,524	Chief Executives and Legislators	30,608	1.4%	$108,191

Source. KRC analysis of the 2005-2007 ACS.

• The typical female physician earns $90,060 a year, less than half (43%) of the typical earnings of a male physician ($209,892). (Some of this gap reflects segregation within narrower occupations—e.g., women working more heavily as general practitioners and men working more as surgeons.)

Within low-paying occupations in Pennsylvania:

• The typical waitress earns $16,554 a year, just 70% of the annual earnings of the typical waiter.

• A woman employed as a sewing machine operator earns $18,625 a year, 80% of the $23,173 men in the same field earn.

• Female food preparation workers also earn $16,554 a year, 90% of the typical pay ($18,392) for men in this occupation.

Few Women Occupy the Best-Paid Managerial, Scientific, and Technical Jobs

One broad occupational category within which large gaps exist between male and female pay is management. As Figure 8 shows, women are especially under-represented in the highest-paying management jobs in Pennsylvania. While women make up more than half of the poorest third of managerial occupations

Table 5. Top 10 Highest Paying Occupations

Women			Men		
Occupation	**Median Earnings**	**Percent Employed**	**Occupation**	**Median Earnings**	**Percent Employed**
Chief Executives and Legislators	$98,300	0.39%	Physicians and Surgeons	$209,892	0.96%
Physicians and Surgeons	$90,060	0.59%	Dentists	$165,447	0.11%
Pharmacists	$88,988	0.22%	Chief Executives and Legislators	$108,191	1.45%
Lawyers, and Judges, Magistrates, and other Judicial Workers	$75,734	0.53%	Lawyers, and Judges, Magistrates, and other Judicial Workers	$103,473	0.91%
Computer and Information Systems Managers	$72,431	0.28%	Chiropractors	$101,191	0.05%
Chemists and Materials Scientists	$70,833	0.13%	Veterinarians	$101,191	0.05%
Computer Software Engineers	$67,257	0.29%	Pharmacists	$98,300	0.22%
Industrial Production Managers	$65,188	0.09%	Marketing and Sales Managers	$97,372	0.79%
Computer Programmers	$64,915	0.22%	Engineering Managers	$96,131	0.18%
Computer Scientists and Systems Analysts	$61,669	0.48%	Chemical Engineers	$96,131	0.13%

Note. Sample limited to workers employed full-time, year-round.
Source. KRC analysis of the 2005-2007 ACS.

Table 6. Bottom 10 Lowest Paying Occupations

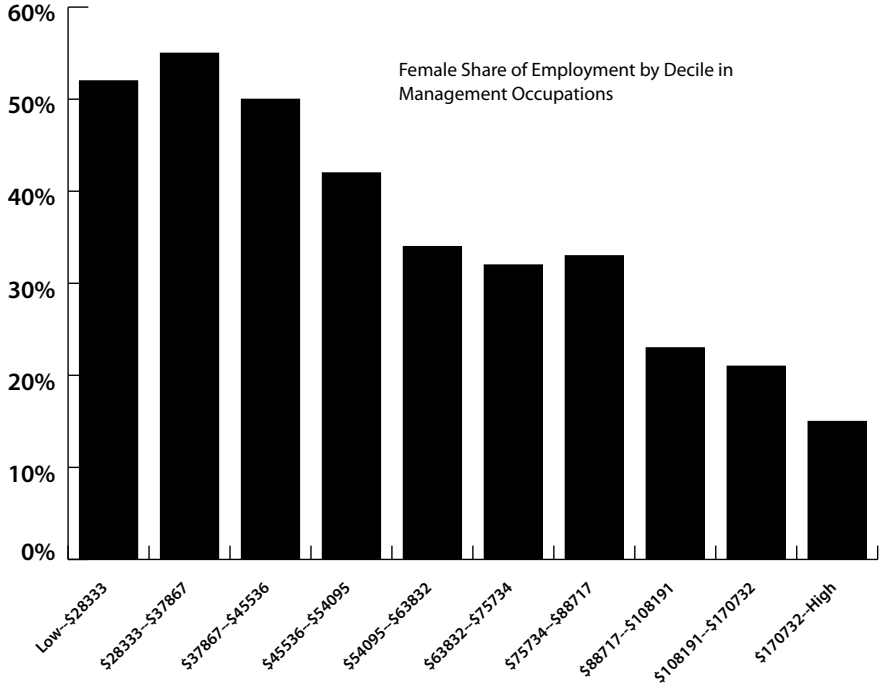
Women			Men		
Occupation	**Median Earnings**	**Percent Employed**	**Occupation**	**Median Earnings**	**Percent Employed**
Combined Food Preparation and Serving Workers, Including Fast Food	$15,179	0.27%	Dishwashers	$16,229	0.12%
Food Servers, Nonrestaurant	$16,142	0.19%	Food Preparation Workers	$18,392	0.15%
Bartenders	$16,229	0.25%	Personal and Home Care Aides	$20,695	0.12%
Food Preparation Workers	$16,554	0.29%	Farmers and Ranchers	$20,695	0.05%
Waiters and Waitresses	$16,878	0.95%	Cooks	$21,250	0.99%
Miscellaneous agricultural workers including animal breeders	$17,073	0.13%	Laundry and Dry-Cleaning Workers	$22,764	0.09%
Child Care Workers	$17,304	0.67%	Maids and Housekeeping Cleaners	$23,173	0.24%
Teacher Assistants	$17,304	0.52%	Sewing Machine Operators	$23,173	0.05%
Cashiers	$17,405	1.28%	Bartenders	$23,274	0.14%
Sewing Machine Operators	$18,625	0.29%	Waiters and Waitresses	$23,802	0.19%

Note. Sample limited to workers employed full-time, year-round.
Source. KRC analysis of the 2005-2007 ACS.

(paying below about $50,000 per year), they make up only 15 percent of the highest paid one-tenth, which pay more than $170,000 (Figure 8).

As in management occupations, Pennsylvania women are underrepresented in higher-paying scientific and technical occupations (Figure 9).

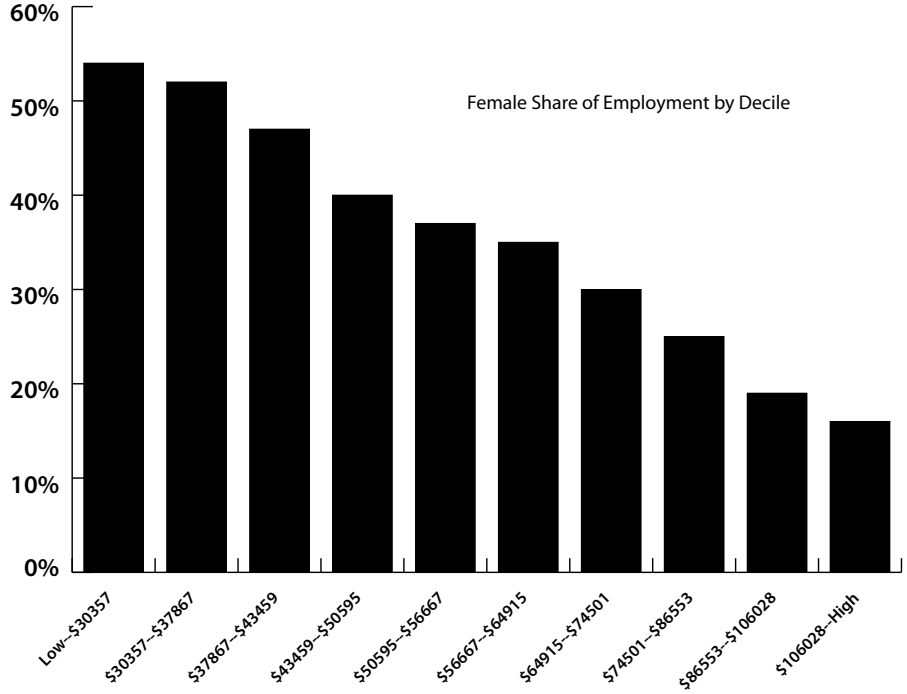
Figure 8. Women in Pennsylvania Are Underrepresented in the Highest Paid Managerial Jobs



Note. For a complete list of the occupations included under management see occupations numbered 1 through 43 in Appendix Table A1 .

Source. KRC analysis of 2005-2007 ACS

Figure 9. Women in Pennsylvania Are Underrepresented in the Highest Paid Jobs Among Professionals in Finance, Engineering and Science



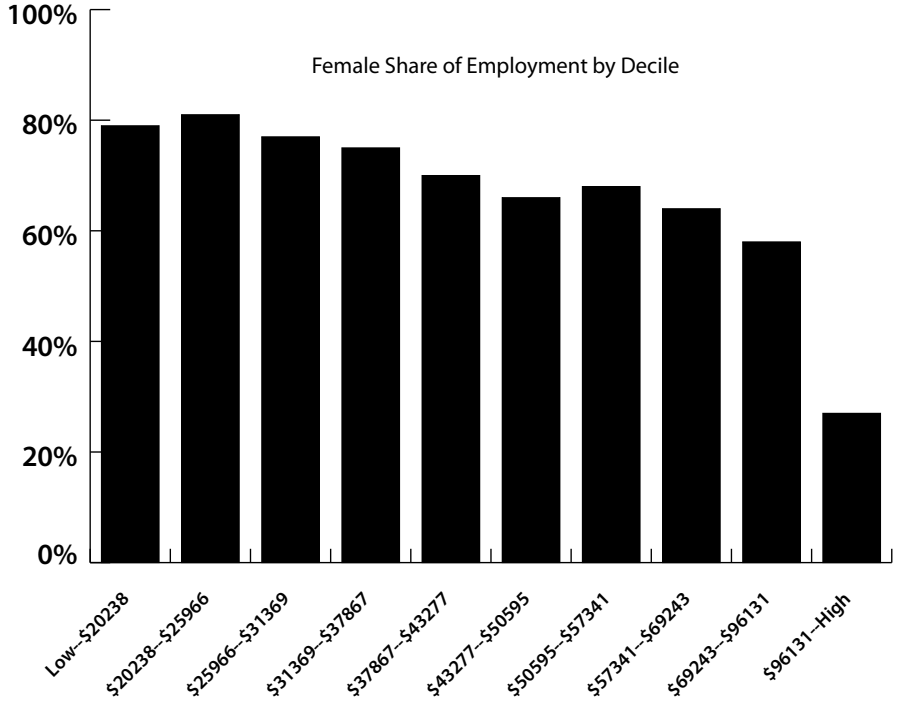
Note. Jobs in Finance, Engineering and Science include Business Operations Specialists, Financial Specialists, Computer and Mathematical Occupations, Architecture and Engineering Occupations and Life, Physical, and Social Science Occupations. See occupations numbered 50 through 196 in Appendix Table A1.

Source. KRC analysis of 2005-2007 ACS

Women Now Dominate a Broad Group of Other Professions

The low share of women in high paying managerial, technical, and scientific occupations contrasts with the high share of women in a group of mostly professional occupations in education, health, law, social service, and the arts (see Figure 10). In these professions, except for the highest-paying decile, women's share of jobs far exceeds their share in the workforce as a whole. The group of professions in which women now represent a majority is substantially broader than the smaller subset of this group (e.g., nursing, elementary school teaching, and librarians) in which women have long dominated.

Figure 10. Women in Pennsylvania Make Up a Greater Share of Higher Paying Jobs in Education, Health, Legal, Social Service and Arts Occupations



Note. Jobs in Education, Health, Legal, Social Service and Arts occupations include workers employed in Community and Social Services Occupations, Legal Occupations, Education, Training, and Library Occupations, Arts, Design, Entertainment, Sports, and Media Occupations, Healthcare Practitioners and Technical Occupations, Healthcare Support Occupations, and Protective Service Occupations. For a complete list of the occupations included above see the occupations numbered between 200 and 395 in Appendix Table A1.

Source. KRC analysis of 2005-2007 ACS

Regional Differences in the Status of Women in the PA Workforce

The Washington, D.C.-based Institute for Women's Policy Research (IWPR) has developed a set of tools which can be used to compare the economic and social status of women across the states.[12] In this section, we adapt IWPR's tools to enable comparison of the economic and social status of women in different counties and multi-county regions of Pennsylvania.

The first IWPR tool for measuring the socio-economic status of women, "the composite employment and earnings index," takes into account four factors: women's median earnings, the gender wage gap, the percent of women in the labor force, and the percent of women employed in managerial and professional occupations. According to IWPR's composite employment and earnings index, published in December 2006, Pennsylvania ranks 34th out of 51 states plus Washington, D.C.—i.e., Pennsylvania is somewhat below average as a state based on women's employment and earnings status.

The second IWPR tool, "the composite social and economic autonomy index," takes into account another four factors: the percent of women with health insurance, the percent of women with four or more years of college, the percent of women-owned businesses, and the percent of women living above poverty. According to IWPR, Pennsylvania ranked 28th based on these measures of the social status and economic autonomy of women.

To adapt the two IWPR tools so that the economic status of women in 40 different parts of Pennsylvania can be compared, we rely on newly available data from the U.S. Census Bureau's American Community Survey (ACS).[13] Counties or groups of counties that scored in the top 10 in both indices are listed in Table 7 and Table 8.[14] We find that:

- The counties ranked in the top 10 measured by both indices were Chester, Montgomery, Bucks, Delaware, Dauphin, Cumberland, Perry, Allegheny, and Northampton.

- Earnings in these counties range from a high of $45,536 in Chester to a low of $33,111 in Dauphin and Northampton.

- On average women in these counties earned 73% of men's earnings in these counties. 61% of women participated in the labor force in these counties.

- 18% of women were employed in managerial and professional/technical occupations.

- 90% of women live above poverty in these counties.

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12. Heidi Hartman, Olga Sorokina, and Erica Williams, *The Best and Worst State Economies for Women*, Institute For Women's Policy Research , December 2006, available online at www.iwpr.org

13.Unlike IWPR's index, the index in this paper does not include data on the percent of women with health insurance because sub-state data on health coverage by gender is not currently available for Pennsylvania. Calculating the index of social and economic autonomy by state without the percent of women with health insurance coverage, we find that Pennsylvania was ranked 30th out of 50 states and the District of Columbia. Our index also relies on the ACS rather than the March CPS.

14. To protect confidentiality the public use microdata of ACS combines observations from Pennsylvania counties with small populations. As a result while this report identifies workers in all 68 of Pennsylvania counties it is only possible to identify those workers as part of 40 counties or groups of counties.

- 25% of businesses were owned by women.

- 32% of women have at least a college degree.

Counties or groups of counties that ranked in the bottom 10 measured by both indices include Montour, Northumberland, Bradford, Sullivan, Tioga, Schuylkill, Bedford, Fulton, Huntingdon, Clarion, Forest, Venango, Armstrong, Indiana, Fayette, Clearfield, and Jefferson. In these counties

- Median earnings for women employed full-time, year-round were $25,438 in the worst counties for women.

- Among workers employed full-time and year-round, median earnings for women were 69% of median earnings for men.

- Labor force participation averaged just 52%.

- 9% of women in these counties were employed in managerial and professional occupations.

- 85% of women lived above poverty.

- 23% of businesses were women-owned.

- 15% of women had a college-degree.

Both of these indices and their component parts for each of Pennsylvania's counties are presented in Appendix Table A1 and Table A2.

Table 7. Composite Employment and Earnings Index

County	Median Annual Earnings Full-Time, Year-Round for Employed Women	Earnings Ratio Between Full-Time, Year-Round Employed Women and Men	Percent of Women in the Labor Force	Percent of Employed Women, Managerial and Professional/Technical Occupations	Composite Employment and Earnings Index
Counties or County Groups in the Top 10¥	$38,043	73%	61%	18%	4.23
Chester	$46,564	69%	62%	22%	4.73
Montgomery	$43,277	75%	62%	21%	4.65
Bucks	$40,476	72%	62%	17%	4.28
Delaware	$40,476	76%	60%	16%	4.23
Dauphin	$33,111	77%	62%	18%	4.15
Allegheny	$34,871	75%	56%	17%	4.03
Cumberland, Perry	$32,457	71%	62%	17%	4.02
Northampton	$33,111	67%	62%	14%	3.77
Counties or County Groups in the Bottom 10¥	$25,438	69%	52%	9%	3.11
Montour, Northumberland	$27,048	71%	55%	9%	3.25
Bradford, Sullivan, Tioga	$24,626	69%	52%	11%	3.18
Schuylkill	$27,048	71%	52%	9%	3.17
Bedford, Fulton, Huntingdon	$25,298	71%	53%	9%	3.16
Clarion, Forest, Venango	$24,834	68%	53%	9%	3.11
Armstrong, Indiana	$25,966	68%	53%	9%	3.10
Fayette	$24,884	70%	47%	9%	2.99
Clearfield, Jefferson	$23,799	66%	51%	8%	2.96

¥There are fewer than 10 counties (or county groups) in the top and bottom 10 because each county had to rank in the top or bottom 10 of both the composite index of employment and earnings and the composite index of social and economic autonomy (see also Table 8).
Source. KRC analysis based on 2005-2007 ACS

Table 8. Composite Social and Economic Autonomy Index

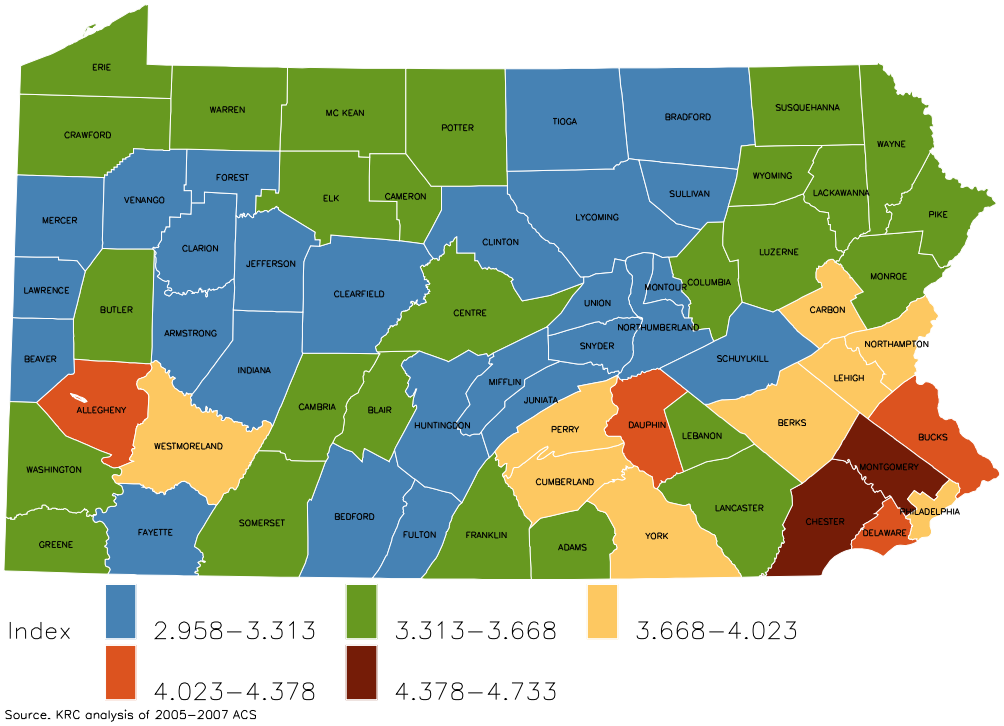
County	Percent of Women Living Above Poverty	Percent of Women With Four or More Year of College	Percent of Businesses that Are Women-Owned	Composite Social and Economic Autonomy Index
Counties or County Groups in the Top 10[¥]	92%	32%	25%	6.34
Chester	94%	44%	28%	6.94
Montgomery	95%	40%	24%	6.72
Bucks	95%	32%	22%	6.35
Delaware	91%	32%	25%	6.28
Dauphin	90%	24%	25%	5.94
Allegheny	88%	30%	26%	6.10
Cumberland, Perry	93%	29%	24%	6.22
Northampton	93%	23%	29%	6.15
Counties or County Groups in the Bottom 10[¥]	85%	15%	23%	5.27
Montour, Northumberland	87%	16%	23%	5.41
Bradford, Sullivan, Tioga	86%	16%	21%	5.30
Schuylkill	87%	14%	21%	5.23
Bedford, Fulton, Huntingdon	86%	13%	25%	5.31
Clarion, Forest, Venango	85%	15%	23%	5.26
Armstrong, Indiana	84%	17%	25%	5.40
Fayette	82%	14%	19%	4.99
Clearfield, Jefferson	85%	13%	24%	5.24

[¥]There are fewer than 10 counties (or county groups) in the top and bottom 10 because each county had to rank in the top or bottom 10 of both the composite index of social and economic autonomy and the composite index of employment and earnings (see also Table 7).

Source. Keystone Research Center estimates based on 2005-07 American Community Survey. Data on percent of women owned businesses from the Survey of Business Owners, 2002

Map 1. Composite Index of Women's Earnings and Employment

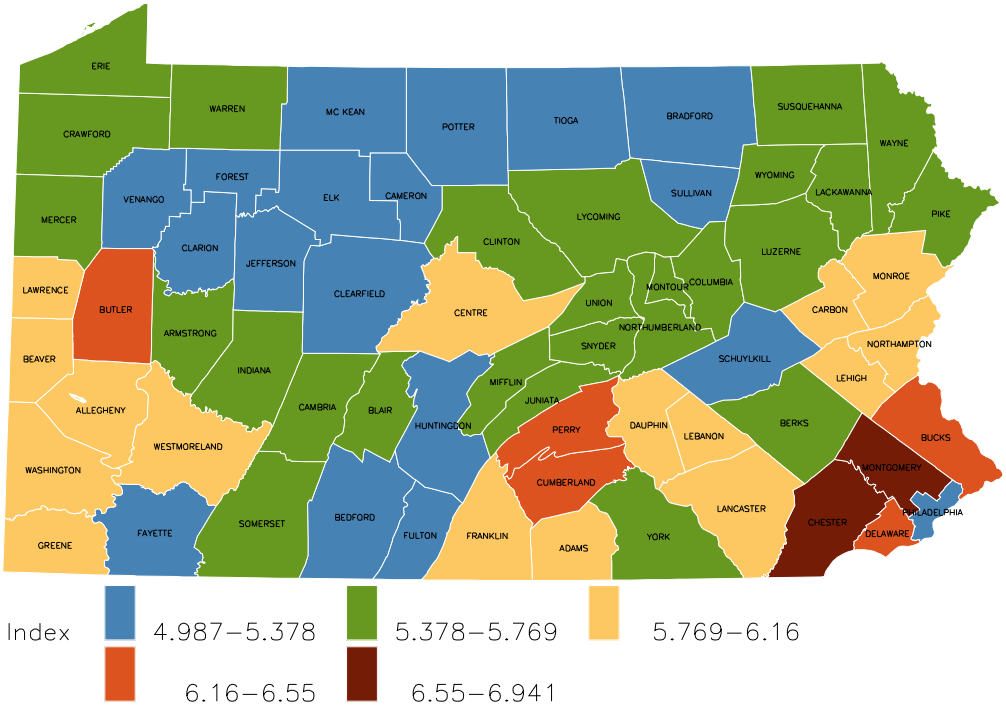
Index of women's earnings, the gender wage gap, women's labor force participation and the share of women in managerial and professional/technical occupations



Source. KRC analysis of 2005–2007 ACS

Map 2 Composite Index of Women's Economic and Social Autonomy

Index of the percent of women above poverty, women's college degree attainment, and the percentage of women–owned businesses.



Source. KRC analysis of 2005–2007 ACS and the 2002 Survey of Business Owners

What Explains the Gender Wage Gap?

What explains the gender wage gap? A common way that economists seek to answer this question is by using statistical methods to tease out how much of the gap can be explained by various worker characteristics (education, work experience, age, race, gender, etc.), and job characteristics (industry, occupation, union status, public or private sector, share of women in the occupation, firm size, employer size, etc.).

Using this approach, Boraas and Rodgers concluded that, in 1999 (the most recent year they analyzed), the share of women in an occupation was the largest contributor to the gender pay gap.[1] The President's Council of Economic Advisers in June 1998 cited a study estimating that one-third of the gender pay gap in the late 1980s was explained by differences in education and experience between men and women, and 28% by differences in occupation, industry, and union status. More than 40% of the gender pay gap was unexplained by any of the variables included in this statistical analysis.[2]

Summarizing similar studies, the Congressional Research Service concluded that perhaps one-half of the wage gap can be explained by differences in male and female education and experience levels.[3] If women were like men in terms of their individual and job characteristics, CRS inferred, they might earn about 90% as much as men.

One limitation of the standard approaches is that, because it makes the statistics easier to do, the statistical models usually assume very specific (and relatively simple) mathematical relationships between the wage gap and the individual and job variables—e.g., they assume that each variable has a separate and independent (and straight-line) impact on the wage gap, except for random error terms. These assumptions likely miss the complex (and non-linear) interactions among different variables.

A second limitation is that the standard models assume that individual and job characteristics have the same basic relationship to wages and the gender gap throughout the entire labor market. In fact, there is a good deal of evidence that the relationship between wages and job and individual characteristics (including gender) is different in different parts of the labor market.[4] Having a PhD, for example, may increase wages far more for chemists than for janitors. Years of experience may increase earnings more for financial analysts than for hotel housekeepers.

The challenge for researchers, once the existence is acknowledged of distinct labor markets for different types of workers (low-wage service workers, professionals, middle-wage earners in bureaucracies etc.) , is to try to identify the important distinct types and then to model how compensation and other job outcomes are determined for each. This is difficult to do, not easily undertaken with the standard statistical toolkit and individualistic models of most economists—one reason there isn't a lot of this type of research on labor market structure.

One recent study did attempt to explicitly explore the structure of the contemporary labor market

1. Stephanie Boraas and William M. Rodgers III, "How Does Gender Play a Role in the Earnings Gap: An Update," Monthly Labor Review (Washington, DC: Bureau of Labor Statistics, 2003), March, p. 14.

2. Francine Blau and Lawrence Kahn, "Swimming Upstream: Trends in the Gender Wage Differential in the 1980s," Journal of Labor Economics 15(1, Part 1), pp. 1-42 cited in "Explaining Trends in the Gender Wage Gap," a report by the Council of Economic Advisors, June 1998, online at http://clinton4.nara.gov/WH/EOP/CEA/html/gendergap.html.

3. Linda Levine, The Gender Wage Gap and Pay Equity: Is Comparable Worth the Next Step? (Washington, DC: Congressional Research Service, December 2004), online at http://holt.house.gov/pdf/CRS_on_pay_equity_Dec2004.pdf

4. Classic studies that documented two distinct (or "segmented") labor markets in the U.S. were conducted by William Dickens and Kevin Lang. These economists showed that, at least until the 1980s, one labor-market segment (the primary labor market) operated in a fairly standard way, with higher pay for those with more education and experience. The second labor market segment contained classic low-wage, dead-end jobs, in which educated and experienced workers earned only a little more than less educated and experienced workers. See William Dickens and Kevin Lang, "Labor Market Segmentation: Reconsidering the Evidence," in William Darity, ed., Labor Economics: Problems in Analyzing Labor Markets (Boston: Kluwer Academic Publishers, 1993).

and the impact of this structure on women. Using a sample of nearly 3,000 men and women over 15 years, Stephen Rose and Heidi Hartman identified three tiers in the labor market: elite jobs (professional, executive, and scientific), good jobs (skilled blue collar workers, police and firefighters, and clerical workers), and less-skilled jobs (factory jobs, sales clerks, and personal service jobs). At each tier, separate groups of mostly male and mostly female occupations were identified yielding a total of six groups of jobs.[5] In all six groups at least 75% of the workers were of one gender. At each tier, in addition, the male jobs paid better than the female. Indeed, the male jobs on each tier typically paid more than the female jobs one tier higher up.

In the bottom two tiers (good and less-skilled jobs), men may earn more than women because they work in larger employers, in more capital-intensive jobs (so cutting labor costs is less important), and in occupations with high unionization rates recently enough to still have an impact on today's wages. In the top tier, men likely benefit relative to women from having greater power within their organizations and in some cases substantial influence over their own salaries (e.g., in partnerships or at the top management level).

Once one recognizes the existence of quite distinct labor markets, one challenge for women—and men—is not to get stuck in a part of the labor market with poor jobs and poor mobility prospects. The challenges for policymakers include improving job quality in the worst labor-market segments, reducing the gap in job quality among segments, and, if possible, creating more opportunities to advance from a less-good group of jobs into a better group.

5. Stephen J. Rose and Heidi I. Harman, *Still a Man's Labor Market: The Long-Term Earnings Gap* (Washington, DC: Institute for Women's Policy Research, 2004).

Policy: Improving Jobs for Women

What will happen to the gender wage gap in the future? Over the next 10-15 years, we expect it will shrink somewhat. One reason is that women may achieve greater equity in higher-paying managerial, scientific, financial, and technical occupations. Despite the dominance of men in the highest-earning jobs, there are cracks in the glass ceiling in these fields. A generational change in the next decade will also put in charge of most corporations, non-profits, and government organizations men and women who went to college after the mid-1970s. The networks of these "new boys"—and "new girls"—will include more women, so more women will get real consideration in decisions to promote to upper echelon jobs.

It is also possible that women may progress in relative terms because less educated men slide further backwards economically. Such a slide could happen if the number of manufacturing jobs continues to decline and if wages in remaining male-dominated blue-collar jobs (in manufacturing, trucking and distribution, and construction) stagnate or fall. One recent example of blue-collar wage erosion is the ratcheting down of wages at auto parts plants that used to be part of the Big Three (GM, Ford, and Chrysler).

If our speculations prove correct, socio-economic status—class—will become more important in the labor market in the next 10-15 years and gender somewhat less important. Without a deliberate change of direction, the United States and Pennsylvania may continue on a path towards an unprecedented level of stratification based on education, income, and where people live.

As well as threatening core American values (such as fair reward for hard work and a belief in widespread mobility), such stratification could hurt the U.S. economically. It is well documented, for example, that productivity growth is faster in nations with low levels of income inequality. Why? One reason is that high inequality correlates with failure to invest adequately in education and skills for middle- and low-income families, a clear and present danger in Pennsylvania already.

To reduce social stratification, to improve long-run economic prosperity, and to improve the economic status of women, we must raise compensation in occupations dominated by low-wage working women and enhance mobility out of these occupations. Below are three ways to do this.

1. Raise wage levels at the low end of the labor market directly through public policy.

A powerful way to accomplish this would be by raising the minimum wage to $10 per hour, with further annual increases indexed to inflation plus one half the rate of productivity growth. (These annual increases would still trail the increases from the 1940s to the late 1960s, which equaled inflation plus 100% of productivity growth.) Increases in the minimum wage over and above the rate of inflation would allow low-wage women workers to share some of the benefits of an expanding economic pie.

Policymakers could also lift up the low end of the labor market by establishing wage and benefit standards for occupations funded substantially through public funds, such as caregiving, health care, and non-teaching occupations in education. We already have such standards in the male-dominated construction industry via prevailing wage laws; so why not in female dominated occupations? In caregiving as in construction, higher wage levels deliver a double benefit—a more skilled and experienced workforce as well as more family-sustaining jobs. In caregiving, the more skilled and experienced workforce that results from higher

wages and benefits leads to improved care quality for consumers.

2. Strengthen career paths that enable low-wage women to work their way up into family-supporting jobs.

Across the 50 states, Pennsylvania is implementing perhaps the nation's largest-scale reform of workforce training programs. One objective of this reform is to improve career advancement for low-wage workers in the state's key industries.[15] A new administration in Washington should make the strengthening of career paths out of low-wage jobs a national priority. One way to do this would be through passage of the proposed federal Sectors (Strengthen Employment Clusters to Organize Regional Success) Act of 2008, modeled in part on Pennsylvania's workforce strategy. One important way to improve career advancement for women is to expand access to jobs in traditionally male occupations such as construction, manufacturing, and some technical fields. More opportunities for women in traditionally male occupations are especially needed in rural regions with few professional jobs.

3. Strengthen workers rights' to choose union representation.

A particularly powerful way to improve jobs for low-wage women would be to give all workers in low-wage "non-mobile" service industries within a particular geographical area the opportunity to choose union representation at one time. (A "non-mobile" service industry is one which cannot move to another geographical area or country because it has to locate near its customers—e.g., health care providers and child care centers need to locate near the patients and children that they serve.)

Achieving representation across whole areas enables unions to lift regional wage and benefit standards (e.g., from $8 per hour without benefits to $12 per hour with benefits). It does this without disadvantaging any individual employers because wages are taken out of competition locally and, in addition, non-mobile service industries do not, by definition, compete against employers in other regions or countries. Area-wide unionization also makes it possible for unions to collaborate with employers to increase training and strengthen career ladders throughout the regional industry, potentially improving productivity as well as the quality of services and jobs.[16]

The policies above that address wages and career paths should be complemented by additional reforms spelled out in section 4, below, that would make it easier for women to take advantage of expanded job-market opportunities.

15. For details on Pennsylvania's workforce strategy, see Marianne Bellesorte and Stephen Herzenberg, *Investing in Pennsylvania's Families: Economic Opportunity for All* (Swarthmore: PathwaysPA, 2007), chapter 2; online at http://www.keystoneresearch.org/presspdf/Investing%20PA%20Family-FINAL.pdf?item=BP13050104. For more detail, see Stephen Herzenberg, Howard Wial, and Sandi Vito, "Building the Human Capital Infrastructure of a Productive and Equitable 21st Century Economy: Lessons from Pennsylvania," paper presented to the 20th annual conference of the Society for Advancement of Socio-Economics, July 2008; available from Stephen Herzenberg by e-mailing herzenberg@keystoneresearch.org.

16. One fresh example of unionization that encompasses all of a low-wage service industry in a geographical area is the statewide unionization of family child care providers in Pennsylvania and other states. For more details on this example in Pennsylvania, see http://www.keystoneresearch.org/scorecard/A%20Moral%20Economy.pdf.
, pp. 7-8. For details on the national child care unionization movement, see the materials prepared by Keystone Research Center and others for the Wisconsin Early Childhood Association forum on Unions and Child Care, online at http://wecanaeyc.org/advocacy/index.php?category_id=3265.

4. Update social policies to reflect the reality that most women now work.

Astonishingly, despite a "quiet revolution"[17] in women's relationship to the job market, U.S. social policies have not meaningfully changed since the 1960s in ways that help women—and men — balance family and work responsibilities. Our social policies continue to be ungenerous, helping a few low-income families a little. Some high-wage workers, on the other hand, enjoy paid family leave, flex time, and access to high-quality, affordable—sometimes company subsidized—child care. In the broad middle class, families remain stressed. Many women, still shouldering the larger share of responsibility for housework and child raising, face stark trade-offs between family responsibilities and long-term earnings, the latter often maximized by working full-time or more than full time. To reduce these trade-offs, to avoid underutilizing talented women, and to enable both men and women to better balance work and family, policymakers should:

• Implement paid family leave and sick leave: When they have a child or a sick family member, workers should not have to choose between sacrificing their family and quitting, or at the least giving up advancement opportunities. Paid leave would help more women avoid this choice. In addition, paid leave would not only raise women's long-term earnings and reduce the gender wage gap; it would also cost employers little, because it reduces turnover and often increases productivity.

• Promote flexible work schedules: Flexible work schedules have been shown to increase employee commitment and improve retention. They also make it easier for workers to manage family and work responsibilities. At present, workplace flexibility is more widely available to professional and upper managerial occupations but less available to middle- and lower-wage workers. Government, business, and unions all have a role to play in making flexible schedules more common: Government can disseminate research documenting that flex time works for employers as well as for employees; businesses can actively seek out peer businesses that have experimented successfully with flex time; unions can make work-family balance, including flexible schedules and paid leave, priorities in collective bargaining.

• Expand access to high-quality child care and early childhood education: Rational social policy in a world of single-parent and dual-earner families should make high-quality early childhood education for pre-kindergarten children affordable for the middle class. Careful research has demonstrated that investment in quality early childhood education pays for itself many times over. Beyond this payback, quality early childhood education enables parents to focus on their jobs during the work day, and to maintain steady employment rather than having to stay home or quit because of unreliable or unsatisfactory child care. It thus improves productivity for employers, while potentially increasing women's earnings over the long term. Quality early child care and education would also allow women in low-wage jobs in retail, education, and healthcare—fields often attractive to women because of their "mother-friendly" working hours—to venture into higher paying careers, because women would know their children were in safe and reliable programs.

To sum up, it is not just in the area of financial market regulation that America's economic policies are out

17. Claudia Golden, "The Quiet Revolution That Transformed Women's Employment, Education, and Family," op. cit., footnote 4 above.

of date. Our labor market and social policies need to be modernized to help working families in general and women in the workforce in particular. Updating our employment and social policies as outlined above would reduce the gender wage gap, expand opportunity for women, and improve the lives of these women's families. It would also expand opportunity and reduce work-family stress for tens of millions of men.

Technical Appendix

Data

The primary source unless otherwise noted for each of the variables used to calculate the composite employment and earnings index and the composite social and economic autonomy index is a pooled sample of public use microdata from the U.S. Census Bureau's 2005, 2006 and 2007 American Community Survey.[18] All dollar values are expressed in 2007 dollars based on the Consumer Price Index Research Series (CPI-U-RS).

Composite Employment and Earnings Index

This composite index takes into account four factors: women's median annual earnings, the gender wage gap, the percent of women in the labor force, and the percent of women employed in managerial and professional/technical occupations. To construct the index each of the four factors for each of Pennsylvania's counties (county group) was divided by comparable value for the nation as a whole. The resulting four values were summed to generate a composite score for each county (county group) and ranked from highest to lowest. The assumptions employed in calculating each of the four factors are as follows:

- Women's median annual earnings is calculated for women age 16 and older who worked full-time (at least 35 hours a week), year-round (at least 50 weeks).

- The gender wage gap is calculated as the ratio of women's to men's median annual earnings

- The median's for both men and women are calculated for workers age 16 and older employed full-time, year-round.

- Women's labor force participation is calculated as the percent of all women age 16 and older who were employed or looking for work.

- Women in managerial and professional/technical occupations is calculated as the percent of all women age 16 and older employed in the following broad occupational categories: management occupations, business operations specialists, financial specialists, computer and mathematical occupations, architecture and engineering occupations, and life, physical, and social science occupations (for a more detailed list of occupations see the numbered occupations from 1 to 196 in Table A1).

Composite Social and Economic Autonomy Index

This composite index takes into account three[19] factors: the percent of women with four or more years of college, the percent of women-owned businesses, and the percent of women living above poverty. To

18. This and other data from the Census Bureau is reformatted for use by researchers and distributed as the Integrated Public Use Microdata Series (IPUMS) by the Minnesota Population Center of the University of Minnesota Available online at http://usa.ipums.org/usa/.

19. The state by state composite index of women's social and economic autonomy calculated by the Institute for Women's Policy Research (IWPR) included data on the percent of women with health insurance. Because sub-state data on health coverage by gender is not currently available for Pennsylvania this variable was not included in the county by county index included in this report. The Pennsylvania Insurance Department is currently conducting a statewide survey of health insurance coverage which in the future will likely make it possible to include women's health insurance coverage in a county by county index.

construct the index each of the three factors for each of Pennsylvania's counties (county group) was divided by comparable value for the nation as a whole. The value for the share of women within incomes above the poverty line is multiplied by four in order to give it more weight in the final index.[20] The resulting values were summed to generate a composite score for each county (county group) and ranked from highest to lowest. The assumptions employed in calculating each of the four factors are as follows:

- The percent of women with four or more years of college is calculated for all women age 25 or older in each county.

- The percent of women-owned businesses is derived from the 2002 Survey of Business Owners (SBO) conducted by the U.S. Census Bureau.[21] For all but the following Pennsylvania counties a precise estimate of the number of women's owned businesses was reported in the 2002 SBO: Cameron, Sullivan, Juniata, Montour, Forest and Snyder. As a result, it was not possible to estimate the percent of women-owned businesses for these counties. Because each of these counties is part of a larger group of counties, it is still possible to construct the composite index missing from the data on the number of businesses owned by women.[22]

- The percent of women with incomes above the poverty line is calculated for all women age 16 and older.

20. Since 2002 the share of women with incomes above the poverty line has also been weighted by a factor of four by the Institute of Women's Policy Research in its state by state composite index of women's social and economic autonomy.

21. SBO data is available online at http://www.census.gov/csd/sbo/. For a detailed summary of the assumptions used to calculate the number of businesses owned by women see page 37 of Erica Williams, *The Economic Status of Women in New York State*, Institute for Women's Policy Research, June 2008, available online at http://www.iwpr.org/pdf/R343.pdf.

22. Cameron is grouped with Warren, Sullivan is grouped with Bradford and Tioga, Juniata and Snyder are grouped with Clinton, Mifflin and Union, Montour is grouped with Northumberland, Forest is grouped with Clarion and Venango.

Table A1. List of Occupations

Management Occupations	
1	Chief executives and legislators
2	General and Operations Managers
4	Advertising and Promotions Managers
5	Marketing and Sales Managers
6	Public Relations Managers
10	Administrative Services Managers
11	Computer and Information Systems Managers
12	Financial Managers
13	Human Resources Managers
14	Industrial Production Managers
15	Purchasing Managers
16	Transportation, Storage, and Distribution Managers
20	Farm, Ranch, and Other Agricultural Managers
21	Farmers and Ranchers
22	Constructions Managers
23	Education Administrators
30	Engineering Managers
31	Food Service Managers
32	Funeral Directors
33	Gaming Managers
34	Lodging Managers
35	Medical and Health Services Managers
36	Natural Science Managers
41	Property, Real Estate, and Community Association Managers
42	Social and Community Service Managers
43	Miscellaneous managers including postmansters and mail superintendents
Business Operations Specialists	
50	Agents and Business Managers of Artists, Performers, and Athletes
51	Purchasing Agents and Buyers, Farm Products
52	Wholesale and Retail Buyers, Except Farm Products
53	Purchasing Agents, Except Wholesale, Retail, and Farm Products
54	Claims Adjusters, Appraisers, Examiners, and Investigators
56	Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation
60	Cost Estimators
62	Human Resources, Training, and Labor Relations Specialists
70	Logisticians
71	Management Analysts
72	Meeting and Convention Planners
73	Other Business Operations Specialists
Financial Specialists	
80	Accountants and Auditors
81	Appraisers and Assessors of Real Estate
82	Budget Analysts
83	Credit Analysts
84	Financial Analysts
85	Personal Financial Advisors
86	Insurance Underwriters
90	Financial Examiners
91	Loan Counselors and Officers
93	Tax Examiners, Collectors, and Revenue Agents
94	Tax Preparers
95	Financial Specialists, All Other
Computer and Mathematical Occupations	
100	Computer Scientists and Systems Analysts
101	Computer Programmers
102	Computer Software Engineers
104	Computer Support Specialists
106	Database Administrators
110	Network and Computer Systems Administrators
111	Network Systems and Data Communications Analysts
120	Actuaries
122	Operations Research Analysts
124	Miscellaneous mathematical science occupations, including mathematicians and statisticians
Architecture and Engineering Occupations	
130	Architects, Except Naval
131	Surveyors, Cartographers, and Photogrammetrists
132	Aerospace Engineers
134	Biomedical and agricultural engineers
135	Chemical Engineers
136	Civil Engineers
140	Computer Hardware Engineers
141	Electrical and Electronics Engineers
142	Environmental Engineers
143	Industrial Engineers, including Health and Safety
144	Marine Engineers and Naval Architects
145	Materials Engineers
146	Mechanical Engineers
152	Petroleum, mining and geological engineers, including mining safety engineers
153	Miscellaneous engineers including nuclear engineers
154	Drafters
155	Engineering Technicians, Except Drafters
156	Surveying and Mapping Technicians
Life, Physical, and Social Science Occupations	
160	Agricultural and Food Scientists
161	Biological Scientists

164	Conservation Scientists and Foresters
165	Medical Scientists
170	Astronomers and Physicists
171	Atmospheric and Space Scientists
172	Chemists and Materials Scientists
174	Environmental Scientists and Geoscientists
176	Physical Scientists, All Other
180	Economists
181	Market and Survey Researchers
182	Psychologists
184	Urban and Regional Planners
186	Miscellaneous social scientists including sociologists
190	Agricultural and Food Science Technicians
191	Biological Technicians
192	Chemical Technicians
193	Geological and Petroleum Technicians
196	Miscellaneous life, physical, and social science technicians, including social science research assistants and nuclear technicians
Community and Social Services Occupations	
200	Counselors
201	Social Workers
202	Miscellaneous Community and Social Service Specialists
204	Clergy
205	Directors, Religious Activities and Education
206	Religious Workers, All Other
Legal Occupations	
210	Lawyers, and judges, magistrates, and other judicial workers
214	Paralegals and Legal Assistants
215	Miscellaneous Legal Support Workers
Education, Training, and Library Occupations	
220	Postsecondary Teachers
230	Preschool and Kindergarten Teachers
231	Elementary and Middle School Teachers
232	Secondary School Teachers
233	Special Education Teachers
234	Other Teachers and Instructors
240	Archivists, Curators, and Museum Technicians
243	Librarians
244	Library Technicians
254	Teacher Assistants
255	Other Education, Training, and Library Workers
Arts, Design, Entertainment, Sports, and Media Occupations	
260	Artists and Related Workers
263	Designers
270	Actors
271	Producers and Directors
272	Athletes, Coaches, Umpires, and Related Workers
274	Dancers and Choreographers
275	Musicians, Singers, and Related Workers
276	Entertainers and Performers, Sports and Related Workers, All Other
280	Announcers
281	News Analysts, Reporters and Correspondents
282	Public Relations Specialists
283	Editors
284	Technical Writers
285	Writers and Authors
286	Miscellaneous Media and Communication Workers
290	Broadcast and Sound Engineering Technicians and Radio Operators, and media and communication equipment workers, all other
291	Photographers
292	Television, Video, and Motion Picture Camera Operators and Editors
Healthcare Practitioners and Technical Occupations	
300	Chiropractors
301	Dentists
303	Dieticians and Nutritionists
304	Optometrists
305	Pharmacists
306	Physicians and Surgeons
311	Physician Assistants
312	Podiatrists
313	Registered Nurses
314	Audiologists
315	Occupational Therapists
316	Physical Therapists
320	Radiation Therapists
321	Recreational Therapists
322	Respiratory Therapists
323	SpeechLanguage Pathologists
324	Therapists, All Other
325	Veterinarians
326	Health Diagnosing and Treating Practitioners, All Other
330	Clinical Laboratory Technologists and Technicians
331	Dental Hygienists
332	Diagnostic Related Technologists and Technicians
340	Emergency Medical Technicians and Paramedics
341	Health Diagnosing and Treating Practitioner Support Technicians
350	Licensed Practical and Licensed Vocational Nurses
351	Medical Records and Health Information Technicians

352	Opticians, Dispensing
353	Miscellaneous Health Technologists and Technicians
354	Other Healthcare Practitioners and Technical Occupations
Healthcare Support Occupations	
360	Nursing, Psychiatric, and Home Health Aides
361	Occupational Therapist Assistants and Aides
362	Physical Therapist Assistants and Aides
363	Massage Therapists
364	Dental Assistants
365	Medical Assistants and Other Healthcare Support Occupations, except dental assistants
Protective Service Occupations	
370	First-Line Supervisors/Managers of Correctional Officers
371	First-Line Supervisors/Managers of Police and Detectives
372	First-Line Supervisors/Managers of Fire Fighting and Prevention Workers
373	Supervisors, Protective Service Workers, All Other
374	Fire Fighters
375	Fire Inspectors
380	Bailiffs, Correctional Officers, and Jailers
382	Detectives and Criminal Investigators
384	Miscellaneous law enforcement workers
385	Police Officers
390	Animal Control Workers
391	Private Detectives and Investigators
392	Security Guards and Gaming Surveillance Officers
394	Crossing Guards
395	Lifeguards and Other Protective Service Workers

Note. A full list of the occupations available in the Integrated Public Use Microdata Series distributed by the Minnesota Population Center is available online at http://usa.ipums.org/usa/volii/c2ssoccup.shtml

Table A2. Composite Employment and Earnings Index

	Women's Median Annual Earnings		Ratio of Women's to Men's Median Annual Earnings		Percent of Women in the Labor Force		Percent of All Women Employed in Managerial and Professional/ Technical Occupations		Composite Employment and Earnings Index	
Area	**Dollars**	**Rank**	**Wage Gap**	**Rank**	**Percent**	**Rank**	**Percent**	**Rank**	**Score**	**Rank**
National	$33,972		78%		59%		15%		4.00	
Pennsylvania	$32,891		74%		57%		14%		3.79	
County/County Group										
Adams, Franklin	$30,357	21	73%	16	58%	13	10%	25	3.49	20
Allegheny	$34,871	6	75%	10	56%	18	17%	6	4.03	6
Armstrong, Indiana	$25,966	34	68%	36	53%	32	9%	38	3.10	38
Beaver, Lawrence	$28,333	27	68%	34	54%	30	10%	28	3.26	30
Bedford, Fulton, Huntingdon	$25,298	36	71%	27	53%	34	9%	31	3.16	34
Berks	$31,375	15	72%	21	61%	8	13%	13	3.72	12
Blair	$28,333	27	74%	13	56%	20	10%	24	3.40	25
Bradford, Sullivan, Tioga	$24,626	39	69%	32	52%	35	11%	23	3.18	32
Bucks	$40,476	4	72%	22	62%	4	17%	4	4.28	3
Butler	$31,456	14	62%	40	58%	16	12%	18	3.45	23
Cambria, Somerset	$26,310	32	74%	11	52%	38	11%	19	3.32	28
Cameron, Elk, McKean, Potter	$28,941	25	75%	8	56%	21	9%	37	3.33	26
Carbon, Lehigh	$32,457	10	74%	15	60%	11	14%	9	3.80	9
Centre	$28,972	24	70%	28	57%	17	12%	17	3.47	22
Chester	$46,564	1	69%	31	62%	5	22%	1	4.73	1
Clarion, Forest, Venango	$24,834	38	68%	35	53%	33	9%	33	3.11	36
Clearfield, Jefferson	$23,799	40	66%	38	51%	39	8%	39	2.96	40
Clinton, Juniata, Mifflin, Snyder, Union	$25,749	35	73%	17	54%	26	7%	40	3.11	35
Columbia, Luzerne	$30,357	21	80%	2	55%	25	11%	20	3.56	16
Crawford, Warren	$26,903	31	78%	3	54%	27	9%	30	3.33	27
Cumberland, Perry	$32,457	10	71%	25	62%	3	17%	5	4.02	7
Dauphin	$33,111	8	77%	5	62%	7	18%	3	4.15	5
Delaware	$40,476	4	76%	6	60%	10	16%	7	4.23	4
Erie	$30,357	21	75%	9	56%	19	13%	11	3.66	14
Fayette	$24,884	37	70%	30	47%	40	9%	35	2.99	39
Greene, Washington	$30,525	17	69%	33	55%	22	12%	16	3.48	21
Lackawanna, Wyoming	$30,008	22	73%	19	55%	24	10%	26	3.42	24
Lancaster	$31,066	16	73%	20	60%	12	11%	21	3.57	15
Lebanon	$30,357	21	74%	12	61%	9	10%	27	3.54	19
Lycoming	$26,903	31	74%	14	58%	14	9%	36	3.30	29
Mercer	$25,966	34	65%	39	52%	36	10%	29	3.10	37
Monroe	$32,381	12	71%	26	58%	15	11%	22	3.55	17
Montgomery	$43,277	2	75%	7	62%	2	21%	2	4.65	2
Montour, Northumberland	$27,048	29	71%	24	55%	23	9%	32	3.25	31
Northampton	$33,111	8	67%	37	62%	6	14%	8	3.77	10
Philadelphia	$35,417	5	88%	1	54%	29	13%	12	3.92	8
Pike, Susquehanna, Wayne	$29,212	23	77%	4	54%	31	12%	15	3.54	18
Schuylkill	$27,048	29	71%	24	52%	37	9%	34	3.17	33
Westmoreland	$32,381	12	73%	18	54%	28	13%	10	3.68	13
York	$31,766	13	70%	29	64%	1	13%	14	3.75	11

Source. Keystone Research Center estimates based 2005-2007 American Community Survey

Table A3. Composite Index of Women's Economic and Social Autonomy

Area	Percent of Women Living Above Poverty		Percent of Women with Four or More Years of College		Percent of Businesses that are Women-Owned		Composite Social and Economic Autonomy Index	
	Percent	Rank	Percent	Rank	Percent	Rank	Score	Rank
United States	87%		26%		28%		6.00	
Pennsylvania	88%		24%		25%		5.86	
Adams, Franklin	91%	9	18%	24	29%	4	5.87	13
Allegheny	88%	22	30%	6	26%	14	6.10	8
Armstrong, Indiana	84%	37	17%	28	25%	19	5.40	32
Beaver, Lawrence	89%	16	18%	26	30%	2	5.82	17
Bedford, Fulton, Huntingdon	86%	34	13%	40	25%	21	5.31	33
Berks	90%	15	21%	17	25%	25	5.75	20
Blair	87%	29	16%	31	26%	15	5.49	28
Bradford, Sullivan, Tioga	86%	33	16%	32	21%	36	5.30	35
Bucks	95%	1	32%	5	22%	35	6.35	3
Butler	91%	10	28%	8	28%	8	6.21	6
Cambria, Somerset	87%	28	15%	34	25%	16	5.47	29
Cameron, Elk, McKean, Potter	87%	27	14%	37	21%	37	5.28	36
Carbon, Lehigh	90%	14	22%	14	28%	5	5.92	11
Centre	80%	39	40%	3	19%	39	5.86	15
Chester	94%	3	44%	1	28%	11	6.94	1
Clarion, Forest, Venango	85%	36	15%	35	23%	32	5.26	37
Clearfield, Jefferson	85%	35	13%	39	24%	27	5.24	38
Clinton, Juniata, Mifflin, Snyder, Union	89%	19	16%	33	28%	10	5.64	24
Columbia, Luzerne	88%	24	19%	22	25%	22	5.63	25
Crawford, Warren	88%	25	16%	30	23%	29	5.46	30
Cumberland, Perry	93%	4	29%	7	24%	28	6.22	5
Dauphin	90%	12	24%	10	25%	17	5.94	10
Delaware	91%	11	32%	4	25%	18	6.28	4
Erie	87%	26	24%	9	22%	33	5.68	23
Fayette	82%	38	14%	36	19%	40	4.99	40
Greene, Washington	89%	17	22%	13	27%	13	5.86	16
Lackawanna, Wyoming	86%	32	21%	16	22%	34	5.50	27
Lancaster	91%	8	23%	11	27%	12	6.02	9
Lebanon	91%	6	18%	25	28%	9	5.87	14
Lycoming	89%	18	17%	27	28%	7	5.72	21
Mercer	88%	21	20%	21	25%	23	5.68	22
Monroe	88%	20	20%	20	31%	1	5.91	12
Montgomery	95%	2	40%	2	24%	26	6.72	2
Montour, Northumberland	87%	31	16%	29	23%	31	5.41	31
Northampton	93%	5	23%	12	29%	3	6.15	7
Philadelphia	77%	40	20%	18	28%	6	5.31	34
Pike, Susquehanna, Wayne	88%	23	19%	23	25%	20	5.61	26
Schuylkill	87%	30	14%	38	21%	38	5.23	39
Westmoreland	90%	13	21%	15	25%	24	5.80	18
York	91%	7	20%	19	23%	30	5.77	19

Source. KRC estimates based 2005-2007 ACS. Data on percent of women owned businesses from the Survey of Business Owners, 2002

Table A4. Earnings by Occupation and Gender for Full-Time, Year-Round Workers

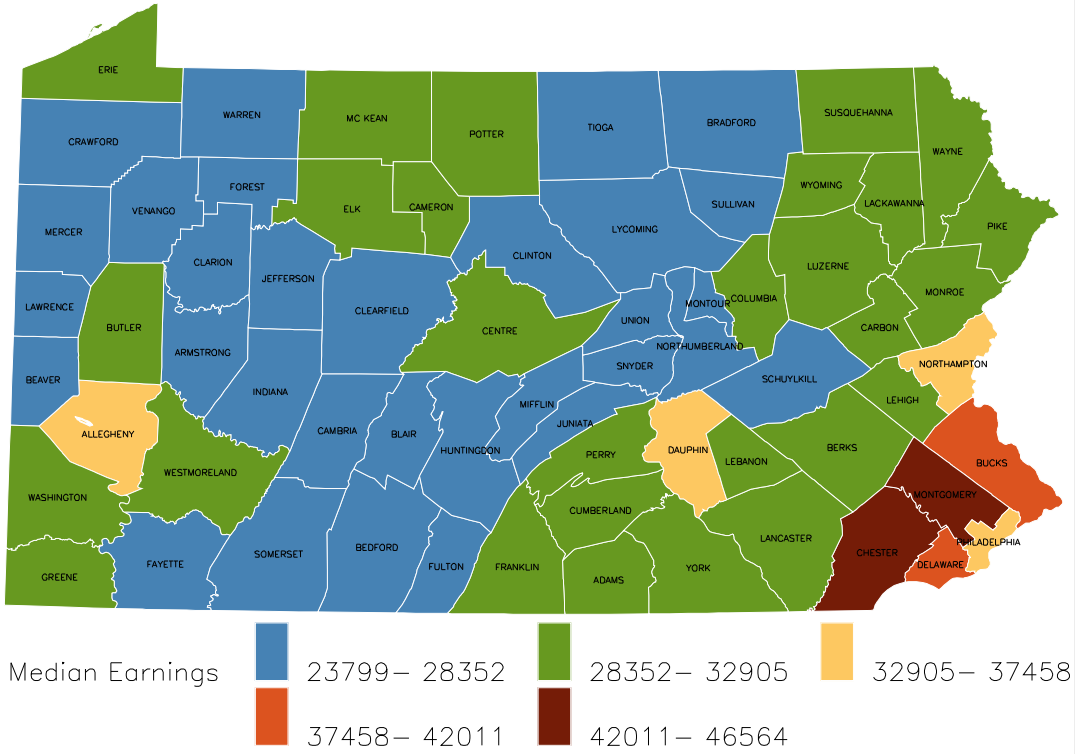
Occupations	Female Earnings	Male Earnings	Gender Gap	Female Share of Employment
Accountants and Auditors	$44,524	$62,751	71%	49%
Administrative Services Managers	$46,564	$62,085	75%	37%
Advertising Sales Agents	$40,476	$48,686	83%	52%
Architects, Except Naval	$51,737	$67,257	77%	25%
Bailiffs, Correctional Officers, and Jailers	$38,452	$43,277	89%	13%
Bakers	$22,351	$28,129	80%	50%
Bartenders	$16,229	$23,274	70%	58%
Bill and Account Collectors	$28,333	$40,562	70%	69%
Billing and Posting Clerks and Machine Operators	$29,800	$32,457	92%	94%
Biological Scientists	$47,560	$54,841	87%	57%
Bookkeeping, Accounting, and Auditing Clerks	$32,381	$33,393	97%	89%
Bus Drivers	$23,802	$39,382	60%	29%
Butchers and Other Meat, Poultry, and Fish Processing Workers	$21,149	$28,972	73%	18%
Cashiers	$17,405	$24,834	70%	70%
Chefs and Head Cooks	$29,345	$30,357	97%	16%
Chemical Technicians	$53,806	$51,737	104%	40%
Chemists and Materials Scientists	$70,833	$64,762	109%	33%
Chief executives and legislators	$98,300	$108,191	91%	17%
Civil Engineers	$57,679	$70,324	82%	11%
Claims Adjusters, Appraisers, Examiners, and Investigators	$40,476	$52,772	77%	62%
Clergy	$39,837	$37,441	106%	16%
Clinical Laboratory Technologists and Technicians	$41,390	$47,929	86%	76%
Compliance Officers, Except Agriculture, Construction, Health and SAfety, and Transportation	$49,786	$63,119	79%	35%
Computer Operators	$32,077	$37,867	85%	58%
Computer Programmers	$64,915	$65,774	99%	21%
Computer Scientists and Systems Analysts	$61,669	$63,832	97%	32%
Computer Software Engineers	$67,257	$75,893	89%	19%
Computer Support Specialists	$44,929	$47,805	94%	34%
Computer and Information Systems Managers	$72,431	$82,779	88%	27%
Cooks	$19,226	$21,250	91%	39%
Correspondent clerks and order clerks	$29,212	$31,042	94%	69%
Counselors	$35,316	$35,923	98%	59%
Customer Service Representatives	$29,212	$35,417	83%	71%
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	$22,180	$33,111	67%	18%
Data Entry Keyers	$26,903	$34,621	78%	85%
Database Administrators	$50,702	$72,431	70%	37%
Designers	$35,182	$47,560	74%	43%
Diagnostic Related Technologists and Technicians	$46,564	$54,841	85%	73%
Dispatchers	$31,042	$40,354	77%	42%
Drafters	$31,042	$41,390	75%	13%
Driver/Sales Workers and Truck Drivers	$25,869	$40,476	64%	3%
Editors	$43,709	$53,806	81%	51%
Education Administrators	$50,595	$72,431	70%	57%

Occupations	Female Earnings	Male Earnings	Gender Gap	Female Share of Employment
Electrical, Electronics, and Electromechanical Assemblers	$23,802	$34,621	69%	55%
Elementary and Middle School Teachers	$45,131	$51,737	87%	71%
Emergency Medical Technicians and Paramedics	$28,455	$37,867	75%	28%
Engineering Technicians, Except Drafters	$47,604	$52,695	90%	12%
Farm, Ranch, and Other Agricultural Managers	$27,048	$33,540	81%	23%
File Clerks	$27,048	$29,345	92%	84%
Financial Managers	$46,564	$77,605	60%	53%
First-Line Supervisors/Managers of Food Preparation and Serving Workers	$21,638	$28,972	75%	54%
First-Line Supervisors/Managers of Housekeeping and Janitorial Workers	$25,869	$35,417	73%	38%
First-Line Supervisors/Managers of Non-Retail Sales	$47,560	$57,341	83%	28%
First-Line Supervisors/Managers of Office and Administrative Support Workers	$36,894	$50,595	73%	67%
First-Line Supervisors/Managers of Personal Service Workers	$31,042	$43,459	71%	54%
First-Line Supervisors/Managers of Production and Operating Workers	$35,417	$48,686	73%	18%
First-Line Supervisors/Managers of Retail Sales Workers	$28,536	$42,424	67%	42%
Food Batchmakers	$21,729	$27,321	80%	58%
Food Preparation Workers	$16,554	$18,392	90%	58%
Food Service Managers	$30,834	$40,476	76%	44%
General and Operations Managers	$54,643	$70,833	77%	22%
Hairdressers, Hairstylists, and Cosmetologists	$20,665	$27,048	76%	87%
Health Diagnosing and Treating Practitioner Support Technicians	$26,310	$32,381	81%	81%
Human Resources Managers	$56,260	$80,952	70%	58%
Human Resources, Training, and Labor Relations Specialists	$42,500	$54,095	79%	67%
Industrial Production Managers	$65,188	$68,810	95%	14%
Industrial Truck and Tractor Operators	$31,042	$31,042	100%	9%
Inspectors, Testers, Sorters, Samplers, and Weighers	$27,321	$37,867	72%	35%
Insurance Claims and Policy Processing Clerks	$31,369	$36,216	87%	85%
Insurance Sales Agents	$39,837	$58,691	68%	41%
Insurance Underwriters	$50,849	$62,751	81%	65%
Janitors and Building Cleaners	$21,523	$26,506	81%	20%
Laborers and Freight, Stock, and Material Movers, Hand	$23,802	$31,042	77%	17%
Laundry and Dry-Cleaning Workers	$19,660	$22,764	86%	57%
Lawyers, and judges, magistrates, and other judicial workers	$75,734	$103,473	73%	30%
Licensed Practical and Licensed Vocational Nurses	$36,216	$45,440	80%	93%
Loan Counselors and Officers	$37,251	$62,751	59%	50%
Lodging Managers	$32,381	$42,500	76%	51%
Maids and Housekeeping Cleaners	$19,583	$23,173	85%	77%
Mail Clerks and Mail Machine Operators, Except Postal Service	$22,262	$27,423	81%	55%
Management Analysts	$54,643	$74,501	73%	40%
Market and Survey Researchers	$60,714	$77,605	78%	56%
Marketing and Sales Managers	$52,772	$97,372	54%	38%
Medical Assistants and Other Healthcare Support Occupations, except dental assistants	$24,834	$29,851	83%	90%
Medical Scientists	$51,932	$81,143	64%	54%

Occupations	Female Earnings	Male Earnings	Gender Gap	Female Share of Employment
Medical and Health Services Managers	$55,655	$65,774	85%	67%
Miscellaneous Assemblers and Fabricators	$24,834	$31,042	80%	39%
Miscellaneous Community and Social Service Specialists	$32,457	$43,459	75%	59%
Miscellaneous Health Technologists and Technicians	$29,212	$48,686	60%	60%
Miscellaneous Legal Support Workers	$31,042	$42,195	74%	79%
Miscellaneous agricultural workers including animal breeders	$17,073	$25,298	68%	19%
Miscellaneous engineeers including nuclear engineers	$57,341	$77,605	74%	10%
Miscellaneous life, physical, and social science technicians, including social science research assistants and	$41,112	$50,595	81%	45%
Miscellaneous managers including postmansters and mail superintendents	$54,095	$75,734	71%	32%
Miscellaneous metal workers and plastic workers including milling and planing machine setters, and multiple mac	$28,129	$34,146	82%	15%
Miscellaneous office and administrative support workers including desktop publishers	$32,457	$43,459	75%	73%
Network Systems and Data Communications Analysts	$50,849	$55,875	91%	25%
Network and Computer Systems Administrators	$55,875	$53,806	104%	22%
News Analysts, Reporters and Correspondents	$41,112	$44,080	93%	55%
Nursing, Psychiatric, and Home Health Aides	$23,802	$26,310	91%	87%
Office Clerks, General	$29,212	$37,036	79%	82%
Operations Research Analysts	$56,260	$72,857	77%	39%
Other Business Operations Specialists	$39,274	$62,085	63%	64%
Other Teachers and Instructors	$38,452	$47,604	81%	51%
Other production workers including semiconductor processors and cooling and freezing equipment operators	$28,333	$35,417	80%	30%
Packaging and Filling Machine Operators and Tenders	$23,477	$32,381	73%	68%
Packers and Packagers, Hand	$21,729	$25,765	84%	54%
Personal Financial Advisors	$40,476	$80,952	50%	34%
Personal and Home Care Aides	$20,557	$20,695	99%	79%
Pharmacists	$88,988	$98,300	91%	43%
Physical Scientists, All Other	$58,980	$87,952	67%	39%
Physical Therapists	$59,505	$70,324	85%	67%
Physician Assistants	$54,841	$62,085	88%	68%
Physicians and Surgeons	$90,060	$209,892	43%	31%
Police Officers	$50,595	$56,911	89%	9%
Postal Service Clerks	$46,253	$49,667	93%	38%
Postal Service Mail Carriers	$48,571	$50,849	96%	21%
Postal Service Mail Sorters, Processors, and Processing Machine Operators	$51,607	$49,877	104%	39%
Postsecondary Teachers	$51,737	$70,324	74%	40%
Private Detectives and Investigators	$35,417	$52,619	67%	38%
Production, Planning, and Expediting Clerks	$31,917	$45,536	70%	55%
Property, Real Estate, and Community Association Managers	$37,867	$60,714	62%	44%
Psychologists	$48,115	$56,260	86%	51%
Public Relations Specialists	$56,260	$56,911	99%	61%
Purchasing Agents, Except Wholesale, Retail, and Farm Products	$40,476	$52,772	77%	52%
Purchasing Managers	$44,726	$70,833	63%	45%

Occupations	Female Earnings	Male Earnings	Gender Gap	Female Share of Employment
Real Estate Brokers and Sales Agents	$36,216	$46,523	78%	55%
Receptionists and Information Clerks	$25,966	$28,972	90%	92%
Recreation and Fitness Workers	$27,627	$32,457	85%	68%
Registered Nurses	$56,260	$59,505	95%	89%
Respiratory Therapists	$48,686	$49,552	98%	59%
Retail Salespersons	$22,764	$35,417	64%	41%
Sales Representatives, Services, All Other	$45,839	$62,085	74%	29%
Sales Representatives, Wholesale and Manufacturing	$48,686	$64,915	75%	25%
Sales and Related Workers, All Other	$43,277	$56,911	76%	57%
Secondary School Teachers	$46,564	$54,643	85%	58%
Secretaries and Administrative Assistants	$30,938	$36,935	84%	97%
Securities, Commodities, and Financial Services Sales Agents	$46,649	$77,605	60%	33%
Security Guards and Gaming Surveillance Officers	$28,333	$30,008	94%	15%
Sewing Machine Operators	$18,625	$23,173	80%	80%
Shipping, Receiving, and Traffic Clerks	$27,048	$31,042	87%	26%
Social Workers	$35,699	$40,476	88%	76%
Social and Community Service Managers	$44,358	$56,911	78%	67%
Stock Clerks and Order Fillers	$23,799	$28,333	84%	40%
Supervisors, Transportation and Material Moving Workers	$34,621	$45,536	76%	22%
Therapists, All Other	$37,768	$47,820	79%	72%
Transportation, Storage, and Distribution Managers	$41,792	$47,598	88%	15%
Waiters and Waitresses	$16,878	$23,802	71%	79%
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	$26,903	$41,112	65%	61%
Welding, Soldering, and Brazing Workers	$27,048	$35,811	76%	5%
Wholesale and Retail Buyers, Except Farm Products	$38,452	$46,446	83%	52%
Word Processors and Typists	$28,972	$27,938	104%	90%
Writers and Authors	$45,549	$46,564	98%	54%
Note. Data on earnings, the gender wage Gap and female share of employment were only reported above for occupations which had a least 30 unweighted observations between 2005-2007				
Source. Keystone Research Center analysis of the 2005-2007 American Community Survey				

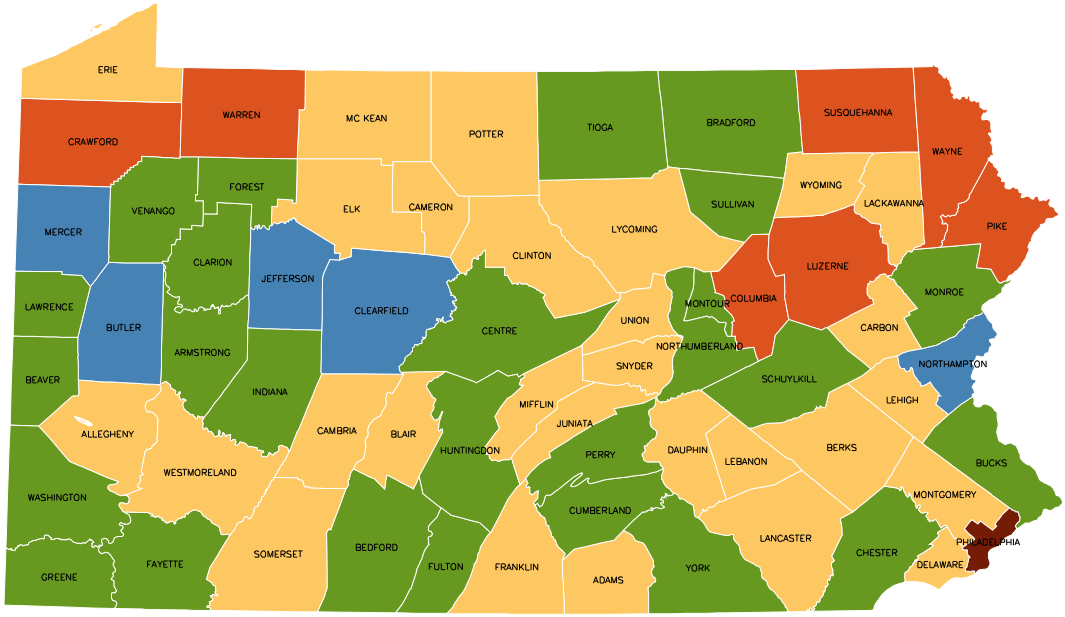
Map 3 Women's Median Earnings in Pennsylvania



Note. Earnings data are for workers employed full–time (at least 35 hours a week), year–round (at least 50 weeks).

Source. KRC analysis of 2005–2007 ACS

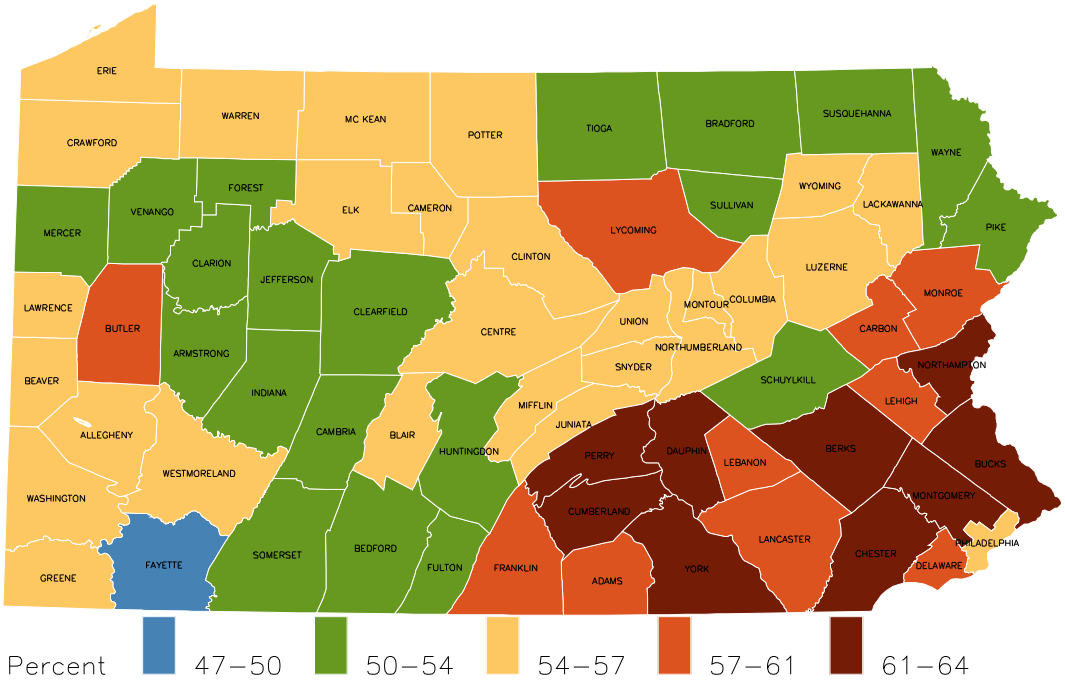
Map 4 Ratio of Women's to Men's Earnings in Pennsylvania



Note. The gender wage gap is calculated as the ratio of women's median annual earnings to men's median annual earnings for workers employed full–time, year–round.

Source. KRC analysis of 2005–2007 ACS

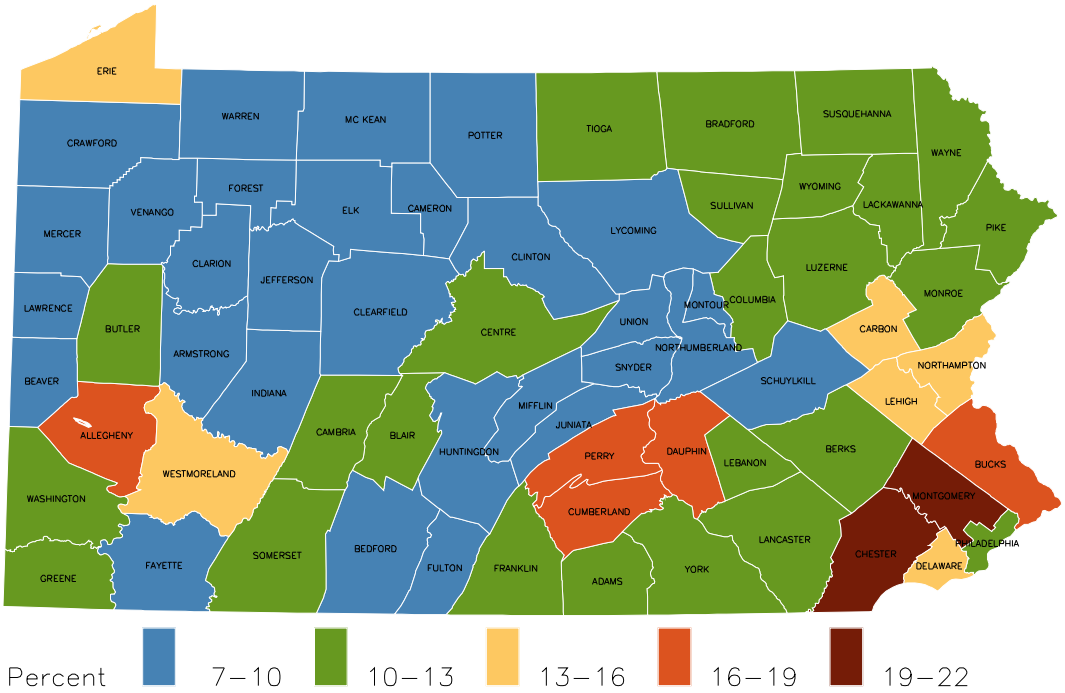
Map 5 Women's Labor Force Participation



Note. Percent of all women age 16 and older employed or looking for work.

Source. KRC analysis of 2005–2007 ACS

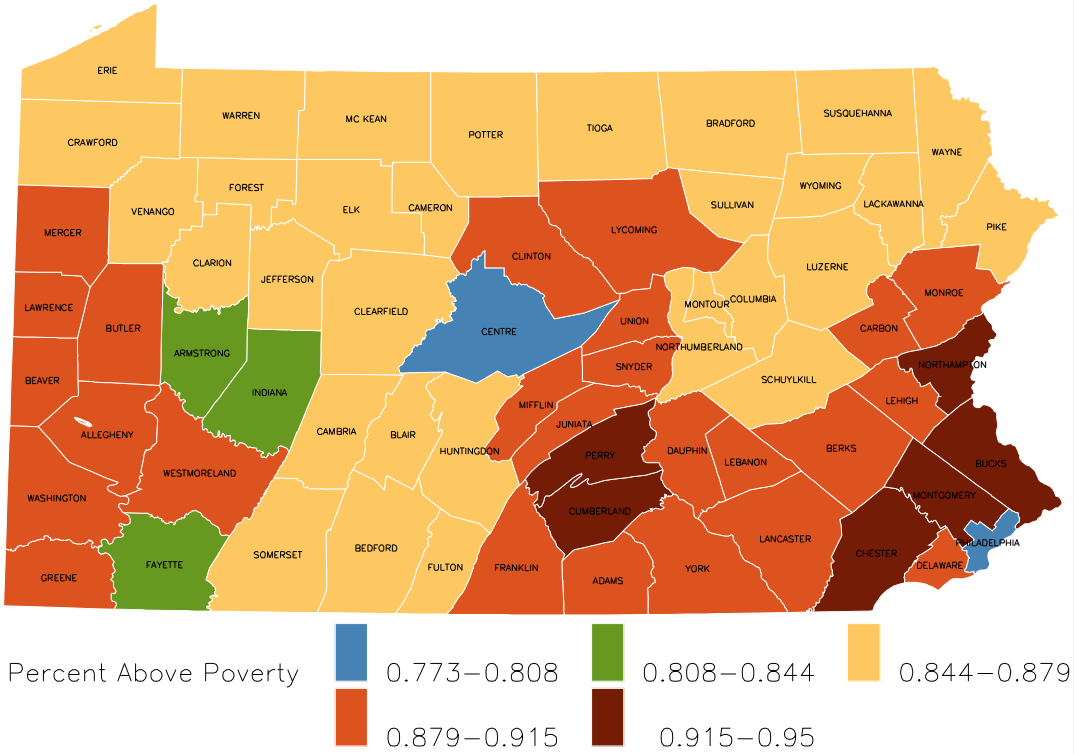
Map 6 Share of All Women Employed in Managerial and Professional/Technical Occupations



Note. Managerial and professional/technical occupations include management occupations, business operations specialists, financial specialists, computer and mathematical occupations, architecture and engineering occupations, and life, physical, and social sciences.

Source. KRC analysis of 2005–2007 ACS

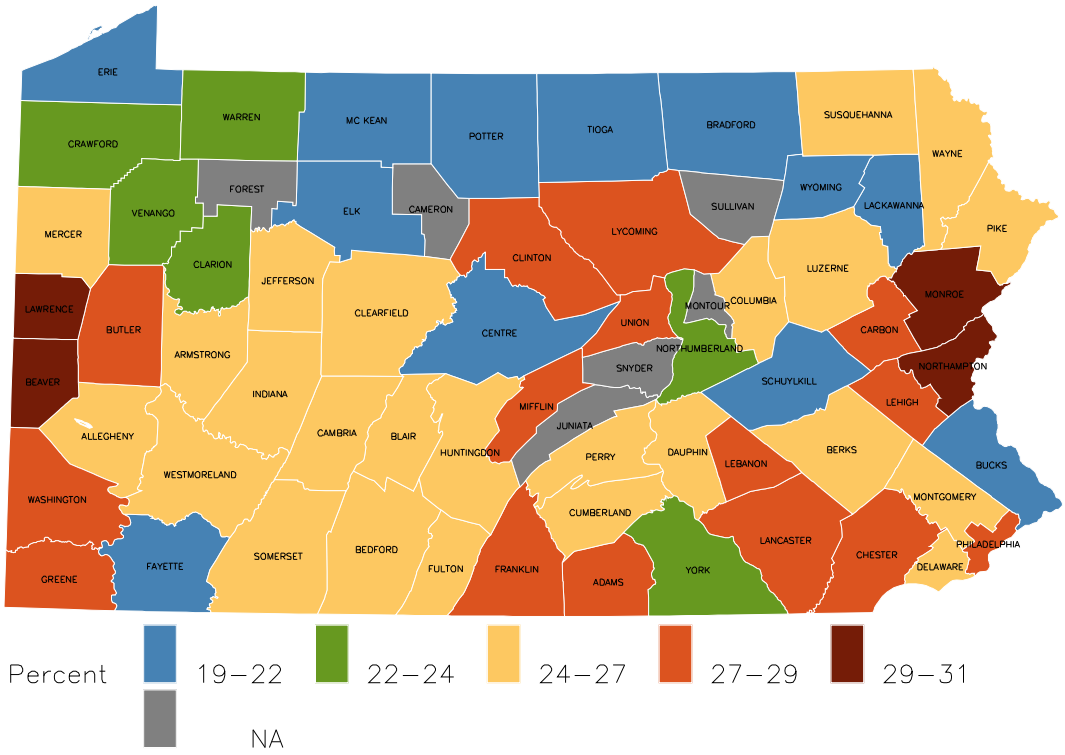
Map 7 Percent of Women Above Poverty



Note. Sample limited to all women age 16 and older.

Source. KRC analysis of 2005–2007 ACS

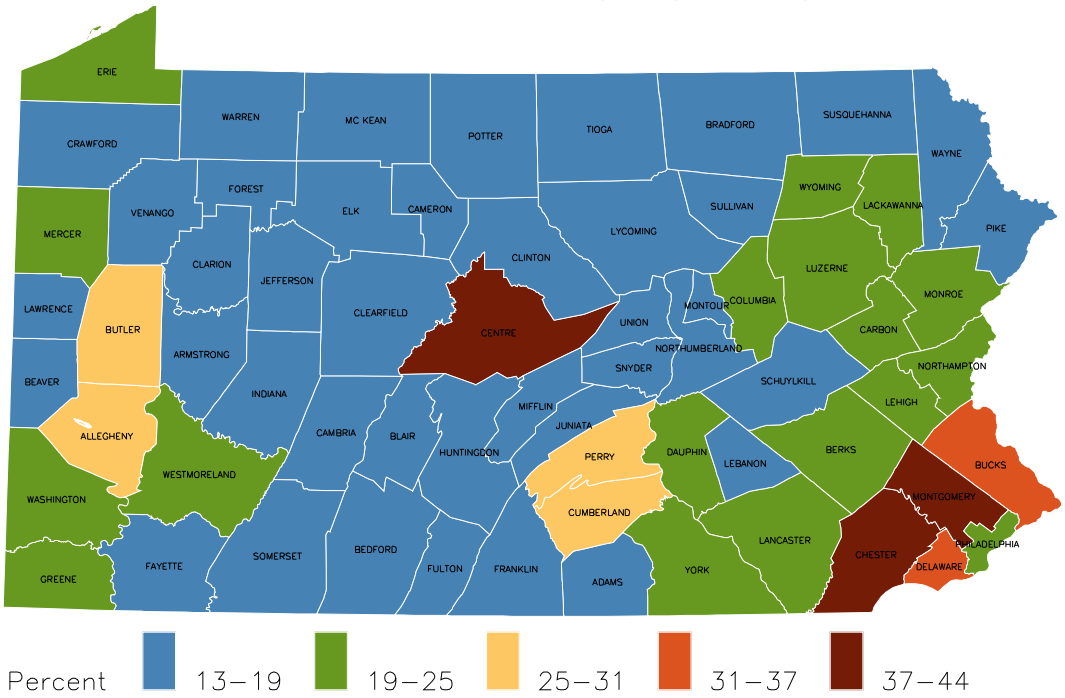
Map 8 Percent of Women–Owned Businesses



Estimates of the number of women–owned businesses were not available for Cameron, Sullivan, Juniata, Montour, Forest and Snyder county

Source. 2002 Survey of Business Owners

Map 9 Percent of Women with a 4–Year College Degree or Higher



Note. Sample limited to women 25 years of age or older.

Source. KRC analysis of 2005–2007 ACS