

America's slow-motion wage crisis

Four decades of slow and unequal growth

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For the last four decades, the United States has been experiencing a slow-motion wage crisis. From the end of World War II through the late 1970s, the U.S. economy generated rapid wage growth that was widely shared.¹ Since 1979, however, average wage growth has decelerated sharply, with the biggest declines in wage growth at the bottom and the middle. The same pattern of slow and unequal growth continues in the ongoing recovery from the Great Recession.

This report lays out the basic facts of the wage crisis. In the first section, we document trends in earnings over the last 70 years. We focus on three periods: First, we look at the immediate postwar period, from 1947 through 1979, when wage growth was rapid for all workers, including workers at the bottom and the middle. Next, we look at the period from 1979 through the present, when wage growth was much slower, especially for low- and middle-wage workers. Finally, we take a closer look at the period since 2009, which marked the beginning of the economic recovery from the Great Recession.

Our analysis centers primarily on the hourly wage: the payment workers receive, excluding benefits, for an hour of work.² We also examine data on hourly compensation: the payment workers receive for an hour of work, including nonwage benefits. We do so primarily to demonstrate that including benefits does not significantly alter any of the conclusions we draw about wage trends over the last four decades. Unless otherwise noted, all numbers in the text, tables, and figures have been adjusted for inflation.³

In the second section of this report, we set these wage trends since the late 1970s against the backdrop of enormous changes in the composition of the U.S. workforce over the same period. American workers today are, on average, older (and so potentially more experienced) and much better educated than their earlier counterparts. Women, workers of color, and immigrants now make up a much larger share of the workforce.⁴ The workforce has also largely shifted out of manufacturing and into the service industries; out of unionized workplaces and into nonunionized workplaces; and out of the Northeast and Midwest and into the West and South.

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In the final section, we examine differences in wages and employment across U.S. regions, categorized to emphasize several parts of the country where manufacturing remains particularly important. The most striking feature of the regional analysis is how varied the workforce and wage rates are across the regions. There are substantial regional differences in the educational attainment and racial/ethnic makeup of the workforce; the share of immigrants in the workforce; unionization levels; the importance of manufacturing; and the wages paid to workers. Of particular interest, the biggest declines in relative employment occurred in the Great Lakes region as manufacturing declined.

Wage trends

The postwar period, 1947–1979: A period of strong, shared wage growth

As we document below, wage growth has been slow and unequal for the last four decades, a tendency that has continued through most of the economic recovery following the Great Recession. But the current pattern of slow and unequal growth is far from an inevitable feature of the U.S. economy. In the three decades from the end of World War II through the 1970s, wage growth was much more rapid and much more widely shared.

U.S. statistical agencies have collected a wide range of data on workers' pay. These data are particularly rich for roughly the last four decades, allowing us to paint a detailed picture of trends since the late 1970s, including differences by gender, race and ethnicity, educational attainment, and other worker characteristics. For the immediate postwar period through the 1960s, however, the available data are more limited and generally don't allow us to distinguish between different kinds of workers.

Nevertheless, the available data, summarized in **Table 1**, are sufficient to confirm that wage growth was both more rapid and more equally shared during the three decades after World War II than has been the case over the four most recent decades. Given these data constraints in the earlier period, we present four different measures of earnings, each of which allows us to see different aspects of workers earnings.

The first measure is an estimate of the average inflation-adjusted hourly earnings for all workers in the economy (row 1), based on data taken from the Bureau of Economic Analysis's National Income and Product Accounts.⁵ Between 1947 and 1979, the average real hourly wage grew 2.2 percent per year. From 1979 to the present, average growth fell to 0.7 percent per year, only one-third of the average rate in the earlier postwar period.

The second measure is the average hourly earnings of production and nonsupervisory workers (row 2), which is tracked by the Bureau of Labor Statistics in a monthly survey of employers. This group makes up about 80 percent of all workers in the economy and is a good proxy for the wage experience of the bottom 80 percent of workers.⁶ From 1947 through 1979, the hourly wage of nonsupervisory workers increased at a 2.0 percent

annual rate. Since 1979, however, the rate has decelerated sharply, to just 0.3 percent per year, about 13 percent of its earlier rate.

These first two measures of hourly wage data both show a steep decline in wage growth in recent decades. A comparison of the growth rate for all workers (row 1) with the corresponding rate for nonsupervisory workers (row 2) also lets us draw some conclusions about developments in wage inequality in the two different periods. In the immediate postwar period, the annual growth rate in wages for nonsupervisory workers was 2.0 percent, not far behind the 2.2 percent annual average for all workers, which includes generally better-paid supervisors. In the more recent period, wage growth decelerated for all workers and for nonsupervisory workers, but the falloff was steeper for nonsupervisory workers, suggesting that wage growth has been substantially more unequal in recent years.

The third pay measure in Table 1 is average *annual* earnings for all workers (row 3), based on data collected by the Social Security Administration.⁷ These data are not adjusted for the hours worked in a year, but they provide some independent corroboration of the hourly wage trends in the first two series. Between 1947 and 1979, average growth in annual earnings was 2.1 percent, right in the middle of the average rates in the first two series (2.0 to 2.2 percent per year). Between 1979 and 2016, however, the average growth rate fell by more than half, to 0.9 percent per year. Published earnings tables from the Social Security Administration allow us to look separately at the earnings growth over the same two periods for the bottom 90 percent of earners (row 4). The average growth rate for the bottom 90 percent of workers also declined substantially, from 2.0 percent per year between 1947 and 1979, to 0.5 percent per year from 1979 to 2016. As with the earlier comparison of the experience of the total workforce to roughly the bottom 80 percent, the Social Security data also suggest that earnings growth has been substantially more unequal in recent decades than in the earlier postwar period. In the recent period, earnings growth for the bottom 90 percent of earners fell more steeply (to 26.2 percent of its earlier rate) than it did for the workforce as a whole (42.5 percent), a group that includes the experience of the highest earners.

The final pay measure in Table 1 is an estimate of growth in annual earnings from work for all households (row 5) and the bottom 90 percent of households (row 6), based on an analysis by Thomas Piketty and Emmanuel Saez of income tax return data from the Internal Revenue Service covering the period 1947 through 2011.⁸ The IRS data tell a similar story. The growth rate for annual earnings from work dropped substantially for all working households (from 1.9 percent per year in the 1947–1979 period, to 0.9 percent per year for 1979–2011) and even more steeply for working households in the bottom 90 percent (from 1.8 percent per year in the first period to 0.6 percent per year in the second period). Once again, wage growth was much faster and much more equally shared until about 1979, when a prolonged period of slow and unequal growth became the norm.

The last four decades, 1979–present: A period of slow and unequal wage growth

For three decades after World War II wages grew rapidly across the board. But since the end of the 1970s, wages have grown slowly for most of the workforce, and the gap between the best-paid workers and the rest of the workforce has widened significantly. We can illustrate both of these trends by showing the cumulative inflation-adjusted growth since 1979 in the hourly wages paid to three different kinds of workers (**Figure A**): low-wage workers, which we define here as workers in the 10th percentile of the wage distribution (that is, workers who make more than the bottom 10 percent of workers but less than the top 90 percent of workers); middle-wage workers (which we define as 50th-percentile or median workers, who make more than the bottom half of workers and less than the top half of workers); and high-wage or 90th-percentile workers (who earn more than 90 percent of all workers but less than the top 10 percent).

We draw the data on low-, middle-, and high-wage workers—and much of the rest of the analysis presented here—from the Current Population Survey (CPS), a monthly survey of about 60,000 U.S. households conducted by the Census Bureau for the Bureau of Labor Statistics. A major feature of the CPS is that it provides a careful measure of workers' weekly and hourly earnings along with detailed information on workers' characteristics, including age, gender, race and ethnicity, educational attainment, state of residence, country of birth, industry, occupation, and union membership.⁹

The first key trend since 1979 is the historically slow growth in real wages. In 2017, middle-wage workers earned just 16.8 percent more than their counterparts almost four decades earlier. This corresponds to an annualized inflation-adjusted growth rate over the 38-year period of just 0.4 percent per year. The real wage increase for low-wage workers (those at the 10th percentile) was even slower: 8.9 percent over 38 years, or a 0.2 percent annualized growth rate. As noted earlier, we do not have comparable wage data for the 1947–1979 period. But if the deceleration in wage growth at the 10th and the 50th percentiles between the immediate postwar period and the most recent four decades was proportional to what happened to the deceleration in hourly wages experienced by nonsupervisory workers (or in annual earnings of the bottom 90 percent of wage and salary workers in the Social Security or IRS data), then we can estimate that average real wage growth for low- and middle-wage workers would have been between three and seven times faster between 1947 and 1979 than it has been since.

This slow growth is particularly disappointing for two reasons. First, as we will see in the next section, U.S. workers today are generally older (and hence potentially more experienced) and substantially better educated than workers were at the end of the 1970s.¹⁰ Second, for workers at the bottom and the middle, most of the increase in real wages over the entire period took place in the short window between 1996 and the early 2000s. For the large majority of workers over the last four decades, wages were essentially flat or falling apart from a few short bursts of growth.¹¹

The second key trend that stands out in Figure A is the widening gap between workers at the top and the rest of workforce. Wage growth for workers at the 90th percentile was much faster—a cumulative increase of 46.9 percent, or about 1.0 percent per year on a compounded basis—than it was for those at the 50th and 10th percentiles. In 1979, the 90th-percentile worker already made significantly more than the worker at the middle (2.0 times more, \$31.10 at the top, compared to \$15.41 at the middle, both in 2017 dollars), but the faster growth at the top than at the middle meant that the 90th-percentile worker made 2.5 times more than the middle-wage worker by 2017 (\$45.67 at the top, compared to \$18.00 at the middle).¹² Relative to low-wage workers at the 10th percentile, the earnings for those at top increased from a ratio of 3.5 in 1979 to a ratio of 4.7 in 2017.

The Current Population Survey data, however, almost certainly understate the actual increase in wage inequality. One limitation of the Current Population Survey data analyzed here is that the survey does not adequately capture the earnings of very highly paid workers, such as many CEOs and top corporate managers, lawyers, doctors, and other highly paid professionals. Research on top 1 percent incomes (which include wages, but also other forms of income) by Thomas Piketty and Emmanuel Saez demonstrates that income growth was much more robust for the top 1 percent than it was for the rest of the top 10 percent. If the CPS were able to collect wage data accurately at the very top, the gap between the top and the rest would almost certainly be even higher than what appears in Figure A.¹³

So far, the wage data we've seen have referred to the workforce as a whole, but trends differ in important ways by gender. **Figures B** and **C** present wage growth in the same format as Figure A, but now separately for men and women. For both men and women, we see the same widening of wage inequality over time. The biggest difference, however, is that real wage growth was much higher for the typical woman (up 33.8 percent between 1979 and 2017) than for the typical man (up 8.1 percent) and for high-wage women (up 73.0 percent) relative to high-wage men (up 37.0 percent). To be clear, throughout the entire period, men at the bottom, middle, and top of the male wage distribution consistently earned more than women in the same position of the female wage distribution. In 2017, for example, men at the 90th percentile of men's wages earned about 25 percent more than women at the 90th percentile of women's wages (\$50.00 for men, \$40.00 for women); at the median, the difference was about 21 percent (\$20.00 for men, \$16.50 for women); and at the 10th percentile, about 11 percent (\$10.00 for men, \$9.00 for women). What has happened over the last four decades is that each position in the women's wage distribution has moved somewhat closer to the corresponding position in the men's distribution, likely reflecting a combination of much greater participation of women in paid work, their substantial increase in educational attainment relative to men (women as a group are now better educated than men), and women's entry into higher-paying professions.¹⁴

The growth of wage inequality is also evident in the pattern of wage growth by education. **Figure D** summarizes trends in wages for the typical worker at five different levels of educational attainment. For workers with less than a four-year college degree (over 60 percent of the workforce in 2017), real wages for the typical (median) worker were lower in 2017 than they had been in 1979. In 2017, workers with less than a high school diploma

made 9.6 percent less than what similar workers made in 1979; for workers with a high school diploma, the decline was 2.7 percent relative to their 1979 counterparts; and for workers with some college, but not a four-year degree, the decline was 1.1 percent. Meanwhile, the median real wage grew for workers with a four-year college degree (up 15.9 percent) and for those with an advanced degree (up 30.0 percent).

The wage trends in Figure D reveal a clear increase in inequality. But focusing on the median wage earner in each education category masks another important dimension of growing wage inequality. It isn't simply that wage inequality grew *between* workers with *different* levels of formal education; it is also the case that wage inequality grew *within* groups of workers that had the *same* educational qualifications. To illustrate this point, we can measure the spread of the wage distribution just among college graduates by comparing the wage of the 90th-percentile college graduate to that of the 10th-percentile college graduate, first in 1979 and then in 2017. Between 1979 and 2017, the ratio of what a high-paid college graduate (at the 90th percentile of college graduates) earned relative to what a low-paid college graduate (at the 10th percentile) earned increased substantially, from 3.6 to 4.8. In real terms, the spread between the 10th- and 90th-percentile wages grew from \$29.53 in 1979 to \$45.69 in 2017, with the 10th-percentile college graduate's wage growing by less than \$0.50 in total over the entire 38-year period. As a result, inequality increased markedly, even if we limit our analysis just to college graduates (with no advanced degree).

Wage inequality also rose sharply across racial and ethnic groups. **Figure E** displays wage trends for the median worker in each of four mutually exclusive race and ethnicity groups: white non-Hispanic, black non-Hispanic, Hispanic of any race, and Asian American/Pacific Islander non-Hispanic.¹⁵ Wage growth for the median African American and Hispanic worker was slowest: up 10.1 percent for African American workers and 11.9 percent for Hispanic workers. The increase in median wages was roughly double (up 23.3 percent) for the median white worker and more than three times higher for the median Asian American/Pacific Islander worker (up 36.7 percent).

The current economic recovery, 2009–present: A period of persistent slow wage growth

The period since 2009, which coincides with the economic recovery from the Great Recession, is of particular interest. Between 2009 and 2014, inflation-adjusted wages were flat or falling across a range of available wage measures. In the more recent period, real wages grew, but, as we shall see, growth rates for recovery as a whole still trail far behind the 2.0–2.2 percent annual rates of the earlier postwar period from 1947–1979.

For the shorter time period since 2009, we can supplement the CPS data we have focused on so far with several wage (and compensation) measures not available for the full period since 1979. **Table 2** summarizes inflation-adjusted wage and compensation data for several different measures covering the period from 2009 to 2017. The first three columns reproduce the CPS hourly wage data for low-, middle-, and high-wage workers, the same series referenced in Figure A. The fourth column shows another series we have

already seen—hourly wage data for nonsupervisory workers from the Current Employment Statistics (CES) survey of employers. The fifth column presents hourly wages from the same CES source, now for all workers, including supervisory workers; we haven't used this wage series before because it is only available from 2006. The sixth column shows the growth in wages and salaries for all workers in the Bureau of Labor Statistics' Employer Costs for Employee Compensation (ECEC) data. (The final column displays ECEC data including nonwage benefits, which we will turn to later.) **Figure F** presents the cumulative, inflation-adjusted growth for each of these measures, relative to the start of the recovery in 2009.

The first striking feature of the data for the current recovery is that all of the wage series were at or below their 2009 level continuously from 2010 through 2014. Over this period, wage declines were the steepest for low- and middle-wage workers (those at the 10th and the 50th percentiles), but even high-wage workers (at the 90th percentile) saw no real wage growth over these first five years of economic recovery. A second feature of the data in Figure F is the faster wage growth as the recovery continued, particularly in the period between 2014 and 2017. Wages for workers at the top (90th percentile), the average worker (which includes top earners) from the CES, the average nonsupervisory worker, the average worker from the ECEC, and even low-wage workers, all accelerated sharply after 2013 or 2014. The timing of this acceleration underscores the importance of sustained tight labor markets for generating rapid wage growth.¹⁶ The especially strong performance of wages for low-wage workers (10th percentile) likely also reflects the impact of a series of increases in the minimum wage over the same period.¹⁷ A final feature of the data is how slow wage growth has been in the current recovery. Even the long economic expansion since 2009 has not been sufficient to raise wages anywhere near the rates experienced on average across economic upturns and downturns in the three decades immediately following World War II.

Including benefits does not change the story

Most of the data we've presented so far have focused on wages, primarily drawn from an analysis of microdata from the Current Population Survey. The CPS is one of the most widely used and authoritative sources of information on workers' wages. Unfortunately, the CPS contains little information on employee benefits, which constitute an important part of workers' total compensation.

A careful examination of the available data, however, suggests that incorporating benefits would do little to change the picture. The main reason is that total inflation-adjusted compensation for the *typical* (median) worker has not increased that much faster than wages for the same worker. A recent analysis by the Economic Policy Institute, for example, estimates that total compensation—wages plus nonwage benefits—for the median worker rose only 10.1 percent between 1979 and 2016, compared with a 9.2 percent increase for median wages over the same period using a compatible wage measure.¹⁸ A similar pattern holds if we focus only on the current economic recovery. If we factor in the cost of nonwage benefits, between 2009 and 2017 total compensation for workers in the ECEC data did grow faster (Table 2, last column) than wages alone for the

same group (Table 2, next-to-last column), but the difference was small (0.7 percent per year vs. 0.4 percent per year) and the average growth rate was still well under 1 percent per year.

How can growth in benefits add so little to the growth in total compensation of the median worker—especially given the rising cost of health care benefits? The cost of employer-provided health insurance has indeed risen dramatically since the end of the 1970s, but the increase in costs has been at least partly offset by a large decline in the share of workers receiving employer-provided health insurance, along with an increase in the share of those rising costs borne by workers themselves through higher deductibles and co-pays. The decline in employer-provided coverage has also been much greater for low- and middle-wage workers than it has been for high-wage workers, reinforcing rather than mitigating the rise in inequality.¹⁹

A similar story holds for retirement plans, another major form of nonwage compensation. Employers have shifted retirement plans from defined-benefit (traditional pension) plans to defined-contribution (401(k)-style) plans,²⁰ and workers at the middle and the bottom have seen far bigger declines in access to employer-sponsored retirement plans than workers at the top.²¹ Both of these developments have slowed the growth of compensation, especially for low- and middle-wage workers.

The decline in manufacturing and unionization contributes to wage stagnation, inequality

Manufacturing has traditionally paid higher wages and benefits than other sectors, especially for workers with less than a college degree. The long-term decline in manufacturing employment, both as a share of total employment and, more recently, including the absolute number of workers in manufacturing (see **Figure G**), has contributed to wage stagnation and widening wage inequality. In a recent analysis, Lawrence Mishel documents that manufacturing still pays wages that are about 10 percent higher, and total compensation (including benefits) that is about 15 percent higher, than the nonmanufacturing private sector, even after controlling for key worker characteristics. But Mishel also notes that the manufacturing premium has declined by about 25 percent relative to what it was in the 1980s.²²

Collective bargaining also raises wages and benefits substantially.²³ As a result, the long-term decline in union membership and representation has played an important role in slow and unequal wage growth. On average, workers covered by a union contract earn about 13 percent more than similar workers in nonunion jobs.²⁴ Unions also help to raise wages of nonunion workers in areas where unionization rates are higher, primarily by setting wage standards that even nonunion employers feel obligated to follow for market reasons or in response to developing norms surrounding pay and benefits.²⁵

The changing composition of the U.S. workforce

The disturbing wage trends we highlight in the preceding section take place against a backdrop of major changes in the structure of employment in the United States. In this section, we describe these changes in the composition of the U.S. workforce by age, education, gender, race and ethnicity, nativity, industry, and union status. For the purposes of understanding wage trends, the most notable development of the last four decades is the large increase in the age and educational attainment of the workforce. The large increases in potential work experience and educational attainment that we document in this section are difficult to reconcile with the slow and unequal real wage growth that has characterized the last four decades. The data also show that the workforce today includes much larger shares of women, people of color, and immigrants. The workforce has also shifted out of manufacturing and into nonunion workplaces.

Age

In 1979, almost one-fourth (22.7 percent) of workers were between the ages of 16 and 24. By 2017, the share of young workers had dropped to just one in eight (12.5 percent) (**Figure H**). The share of what economists call “prime-age” workers (workers ages 25–54) increased from 62.5 percent in 1979 to 64.4 percent in 2017, but the biggest increases were among workers ages 55–64 (up to 17.1 percent in 2017, from 11.8 percent in 1979) and 65 and older (doubling their share, from 3.0 percent to 6.0 percent).

Education

Today’s workforce is also much better educated. In 1979, almost one-fourth (23.2 percent) of workers had less than a high school diploma (**Figure I**). By 2017, the share without a high school diploma had fallen to only 7.2 percent. The share of workers with a four-year college degree almost doubled, from 12.5 percent in 1979 to 23.7 percent in 2017; and the share with an advanced degree (master’s degree, doctorate, or law, dental, medical, or similar degree) jumped from 5.9 percent to 13.4 percent over the same period.

Gender, race, and ethnicity

The U.S. workforce is also remarkably more diverse in terms of gender, race, and ethnicity than it was in 1979. Women now make up close to half of all workers (46.9 percent in 2017, up from 41.7 percent in 1979) (**Figure J**). In 1979, workers of color made up 16.3 percent of the workforce; today they make up 36.6 percent (**Figure K**). Among workers of color, the largest increases have been among Hispanic workers, whose share in the workforce has more than tripled, from 4.8 percent in 1979 to 16.9 percent by 2017. The share of African American workers in the workforce is also up, from 9.4 percent in 1979 to 11.9 percent in

the most recent data.

The Current Population Survey, which is the source of the data we analyze here, did not allow respondents to identify as Asian American or Pacific Islander until 1989, but in 1979, 2.2 percent of the workforce identified as “Other” (not white, black, or Hispanic). This “Other” category included Asian Americans, Native Americans, Pacific Islanders, and other groups not captured in the three larger categories. From 1989 on, however, the survey did allow respondents to identify as Asian American/Pacific Islander. In Figure K, for 1979, we report the share in the broad “Other” category, which includes Asian American, Pacific Islander, Native American, and other groups; for 2017, we separate out the Asian American and Pacific Islander respondents from the “Other” category, which is now primarily Native Americans. The broadly defined “Other” group—which combines “Asian American/Pacific Islander” and “Other” in 2017—increased from 2.2 percent in 1979 to 7.9 percent in 2017, with a large share of the increase attributable to a rise in immigration from Asian countries.²⁶

Nativity

The share of immigrants in the U.S. workforce has increased substantially. In 1994 (the earliest year the Current Population Survey asked respondents if they were born outside the country), immigrants made up 9.7 percent of the workforce (**Figure L**). By 2017, the immigrant share had increased to 17.1 percent.²⁷

Industry

The structure of employment across industries has changed markedly over the last four decades. Perhaps most importantly, the share of workers in manufacturing has plummeted. In 1979, almost one-fourth (23.6 percent) of the workforce was in manufacturing (**Figure M**). Today, the manufacturing sector employs only a little over one in 10 (10.4 percent of) workers. Employment in the public sector (federal, state, and local government) has declined, although less sharply, from 15.8 percent in 1979 to 13.7 percent in 2017. Meanwhile, nonmanufacturing employment—overwhelmingly jobs in the service sector—rose from 60.5 percent to over three-quarters (75.9 percent) of all employment in 2017.

Union status

Workers today are also far less likely to be members of a union or to be represented by a union at their workplace (**Figure N**). In 1983 (the earliest year for which union status is available in the data), almost one-fourth (23.3 percent) of workers were unionized; today, the unionization rate (11.9 percent) is about half the 1983 level.²⁸

A regional perspective

So far, we have paid attention exclusively to trends for the national workforce. In this final section, we take a closer look at differences in employment and wages across regions.

States

Employment is heavily concentrated in a relatively small number of states. In 2017, California (11.9 percent) and Texas (8.4 percent) were the states with the largest share of the U.S. workforce (**Figure O**). Together, just nine states (California, Texas, Florida, New York, Illinois, Pennsylvania, Ohio, Georgia, and North Carolina) account for more than half of total employment. Twenty-one states (including the District of Columbia) each have 1.0 percent or less of the national workforce.

Between 1979 and 2017, the distribution of employment shifted across the states. In broad terms, employment shares fell in states in the Northeast and Midwest and rose in states in the South and West (**Figure P**). The biggest gainers were Florida (up 2.7 percentage points) and Texas (up 2.3). The biggest declines were in New York (down 1.6 percentage points), Ohio (down 1.3), Illinois (down 1.2), and Pennsylvania and Michigan (both down 1.1).

Regions

In what follows, we modify the standard Census regions and divisions to focus better on long-run trends related to manufacturing employment. The Census Bureau divides the states into four regions (Northeast, Midwest, South, and West) and nine “divisions” (Pacific, Mountain, West North Central, West South Central, East North Central, East South Central, New England, Middle Atlantic, and South Atlantic).²⁹ **Table 3** defines our alternative regional breakdown and lists the states that belong to each. The first region, following research by Andrew Stettner, Joel Yudken, and Michael McCormack,³⁰ is the “Great Lakes” region, which consists of the manufacturing-heavy states that border any of the Great Lakes (Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin). The second group is what we label the “Manufacturing Southeast” states (Alabama, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee), where manufacturing employment is high or rising relative to other states in the Southeast. Given their importance in national manufacturing, we treat California and Texas as their own regions. The remaining categories are Other Pacific (minus California), Other West (minus Texas), Other Midwest (minus the Great Lakes states), Other Southeast (minus the Manufacturing Southeast states), and Other Northeast (minus the Great Lakes states).

In 2017, the Great Lakes states together accounted for over one-fourth (26.7 percent) of total employment in the country (**Table 4**). The Manufacturing Southeast region (13.1 percent) had the second-largest workforce among our regions, followed closely by the Other Southeast states (12.9 percent). California, on its own, contained 11.9 percent of the

U.S. workforce. The Other Northeast states' share was almost as big (10.3 percent) as California's. Texas (8.4 percent) and the Other West states (7.4 percent) also had a substantial share of the nation's workforce. The two smallest groups in our categories were Other Midwest (5.1 percent) and Other Pacific (4.3 percent).

Organizing the states into these regions helps us see stark changes in the distribution of national employment over the last four decades (**Figure Q**). Between 1979 and 2017, the share of the U.S. workforce in the Great Lakes region fell 7.1 percentage points, more than four times the decline in Other Northeast (down 1.7) and Other Midwest (down 1.2). Meanwhile, employment shares grew in all other regions: Other West (up 2.7 percentage points), Texas (up 2.3), Other Southeast (up 2.2), California (up 1.3), Manufacturing Southeast (up 0.9), and Other Pacific (up 0.7).

Wages by regions

The hourly wage received by the typical worker varies by about 25 percent across the nine regions, from a low of \$16.20 per hour in the Manufacturing Southeast region to \$20.25 per hour in the Other Northeast region (**Figure R**). Typical wages are also relatively high in Other Pacific (\$19.00), California (\$18.69), and Great Lakes (\$18.00). Typical wages are lower in Texas (\$17.00), Other West (\$17.00), Other Southeast (\$16.88), and Other Midwest (\$16.71). (Note that in our discussion of the wage and employment trends in these regions, we have pooled the data from the Current Population Survey for 2015 through 2017 in order to improve the accuracy of our analysis; for simplicity, we refer to this period as “2017” in the text.)

The wage spread across regions is even higher in manufacturing (**Figure S**). The typical manufacturing worker in the Other Northeast region earns \$23.46 per hour, which is 36 percent higher than the \$17.21 per hour paid to the typical manufacturing worker in the Manufacturing Southeast region. The manufacturing-intensive Great Lakes region (\$19.47) is closer to the Manufacturing Southeast region at the bottom than it is to the Other Northeast states.

Regional workforce composition

As we noted earlier, the national workforce is considerably older today than it was four decades ago (Figure H). In 2017, our nine regions show some differences across regions in the age structure of the workforce, but the differences are relatively small (**Figure T**).

The national workforce is also much better educated now than it was in 1979 (Figure I), but fairly large differences in educational attainment persist across regions (**Figure U**). The Other Northeast region has the best-educated workforce, by a considerable margin. This region has the highest share of workers with an advanced degree (18.6 percent, compared with the Great Lakes region in second place at 13.8 percent); the highest share with a college degree (27.0 percent), compared with California and Other Pacific (tied for second place at 24.1 percent); and the lowest share of the workforce with less than a high school diploma (5.3 percent). Three regions—Great Lakes, California, and Other Pacific—cluster a bit behind the Other Northeast region, with about 37 percent of their workforce having

either a four-year college degree or an advanced degree; of these regions, the Great Lakes and Other Pacific regions also have among the lowest shares of workers with less than a high school diploma.

Texas stands out as the regional workforce with the lowest level of formal education. Only one-third (33.3 percent) of Texas workers have a four-year college degree or more, and 11.2 percent have less than a high school diploma. The Other West and Manufacturing Southeast regions also trail the rest of the regions with respect to educational attainment. In both of these regions, only about one-third of their workforce have a four-year college degree or more; 8.0 percent in Other West and 7.5 percent in Manufacturing Southeast have not completed a high school education.

California simultaneously has high shares of workers with college and advanced degrees (24.1 percent and 13.3 percent, respectively) and a high share of workers with less than a high school diploma (10.0 percent).

Across most of the regions, the share of women in the paid workforce is around 47–48 percent over the 2015–2017 period. The three regions where the share of women workers is lower are Texas (44.7 percent), California (45.2 percent), and Other West (45.4 percent) (**Figure V**).

The racial and ethnic composition of the workforce differs substantially across regions (**Figure W**). Most of the regions have a majority-white workforce; the largest shares of white workers are in the Other Midwest and Great Lakes regions (83.0 percent and 74.4 percent, respectively). In California and Texas, workers of color make up a majority of the workforce.

The distribution of African American, Hispanic, and Asian American/Pacific Islander workers varies widely across the country. The share of African American workers ranges from levels well below the national average (11.7 percent in 2015–2017) in Other Pacific (3.4 percent), Other West (4.1 percent), and California (5.6 percent), to almost one-fourth of the workforce in the Manufacturing Southeast region (23.1 percent). The range for Hispanic workers is even larger, from under 7 percent in the Manufacturing Southeast (6.9 percent) and Other Midwest (6.4 percent) regions, to over one-third of the workforce in California (35.7 percent) and Texas (36.1 percent). Asian American and Pacific Islander workers make up a substantial portion of the workforce in California (17.0 percent) and the Other Pacific region (15.4 percent), but a much smaller share in the rest of the country.

Almost one-third of workers in California (32.4 percent), almost one-fourth of workers in Texas (22.5 percent), and almost one-fifth in Other Northeast (19.9 percent) are immigrants (**Figure X**). The immigrant share of the workforce is also above the national average (17.0 percent) in Other Southeast (18.0 percent). Other Midwest (6.7 percent) and Manufacturing Southeast (9.3 percent) are the regions with the lowest share of immigrant workers.

In all nine regions, manufacturing is a major employer (**Figure Y**), but the share of regional employment in manufacturing varies from a low of about 8 percent in the Other Southeast (7.6 percent), Other Northeast (8.0 percent), and Other West (8.2 percent) regions, to about 13 percent in the Manufacturing Southeast (12.6 percent) and Great Lakes (13.2 percent)

regions. Even excluding the Great Lakes states, the Other Midwest region also has a high share of manufacturing employment (11.7 percent).

Large differences in the working populations of the nine regions obscure an important aspect of the distribution of manufacturing employment across the country. Only 13.2 percent of employment in the Great Lakes region is in manufacturing, but because of the size of the collective economies of the states in this region, this region accounts for almost one-third (31.2 percent) of all manufacturing employment in the United States. The Manufacturing Southeast region employs 15.4 percent of all manufacturing workers in the country.³¹

The unionization rate differs greatly across regions (**Figure Z**). In the Other Pacific region, 18.4 percent of workers are either a member of a union or covered by a union contract at their place of work. Other regions with a relatively high share of union workers are California (17.2 percent), Great Lakes (16.5 percent), and Other Northeast (14.5 percent). The regions with the lowest unionization rates are Texas (5.6 percent), Manufacturing Southeast (6.2 percent), and Other Southeast (7.0 percent).

Conclusion

This report seeks to lay out key elements of the wage crisis facing the U.S. economy. The two most salient features of wage trends over the last four decades are the slow growth in real wages for the large majority of workers and the increasingly unequal nature of the wage structure across multiple dimensions, including class, race, gender, and geography. These trends have played out against a backdrop of big increases in the educational attainment and work experience of the U.S. workforce, particularly among women. Both of these increases in the “human capital” of the workforce should have worked to raise wages and narrow inequalities.

But, clearly, other forces are pushing in the opposite direction—toward slower and more unequal wage growth. A complete analysis of those forces lies beyond the scope of this report, but three factors identified here are clearly implicated. The first is the long-term decline in manufacturing employment, which has traditionally been the sector of the economy that pays relatively high wages to the non-college-educated workers who still make up a large majority of the U.S. workforce. The second countervailing force is the long-term decline in union membership, which has had a negative effect on the pay and benefits of both union and nonunion workers. The third factor is the persistent failure to run the economy at full employment, which has undermined the important leverage workers have in tight labor markets.³²

Table 1

Average wage growth slowed after 1979, but wage growth for typical workers slowed even more

Annual growth in wage measures, 1947–1979 and 1979–latest year available

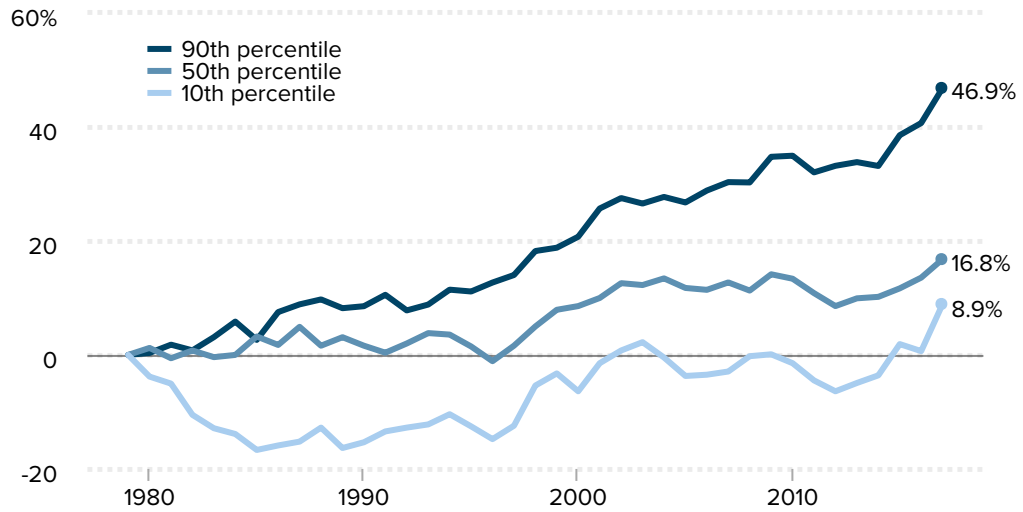
	Annual growth 1947–1979	Annual growth 1979–latest year available	Ratio: Late to early period growth rates
(1) <i>Average hourly wages, all workers</i>	2.2%	0.7%	32.6%
(2) <i>Average hourly wages, nonsupervisory workers</i>	2.0%	0.3%	13.0%
(3) <i>Average annual earnings, all workers</i>	2.1%	0.9%	42.5%
(4) <i>Annual annual earnings, bottom 90 percent</i>	2.0%	0.5%	26.2%
(5) <i>Average household earnings, all workers</i>	1.9%	0.9%	49.3%
(6) <i>Average household earnings, bottom 90 percent</i>	1.8%	0.6%	34.1%

Notes: In row 1, average hourly wages are calculated by dividing total wage and salary income from the National Income and Product Account (NIPA) data from the Bureau of Economic Analysis, Table 2.1, by total hours worked by full- and part-time workers from NIPA Table 6.9. This gives a nominal hourly wage, which is deflated by the CPI-U-RS (as are all subsequent wage and earnings measures in this table). In row 2, hourly wages for production and nonsupervisory workers are taken from the Current Employment Statistics (CES) of the Bureau of Labor Statistics. The nominal values from the CES are again deflated by the CPI-U-RS. In rows 3 and 4, annual earnings are obtained from the Social Security Administration data on wage statistics, combined with data from Kopczuk, Saez, and Song (2010). In rows 5 and 6, data on wage income by tax units is obtained from data updates to Piketty and Saez 2003.

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Figure A

Cumulative percent change in inflation-adjusted hourly wages for all workers at the 10th, 50th, and 90th percentiles, 1979–2017

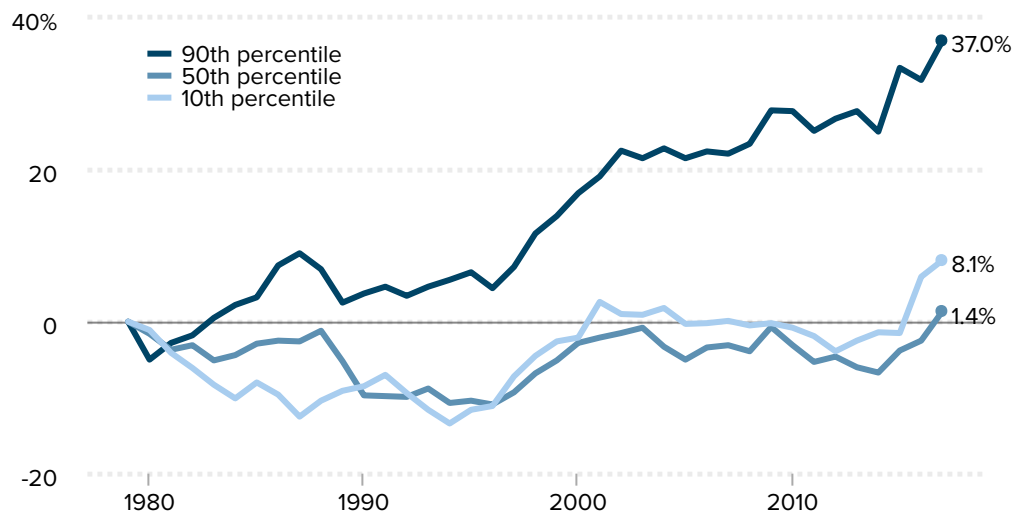


Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

Economic Policy Institute

Figure B

Cumulative percent change in inflation-adjusted hourly wages for men at the 10th, 50th, and 90th percentiles, 1979–2017

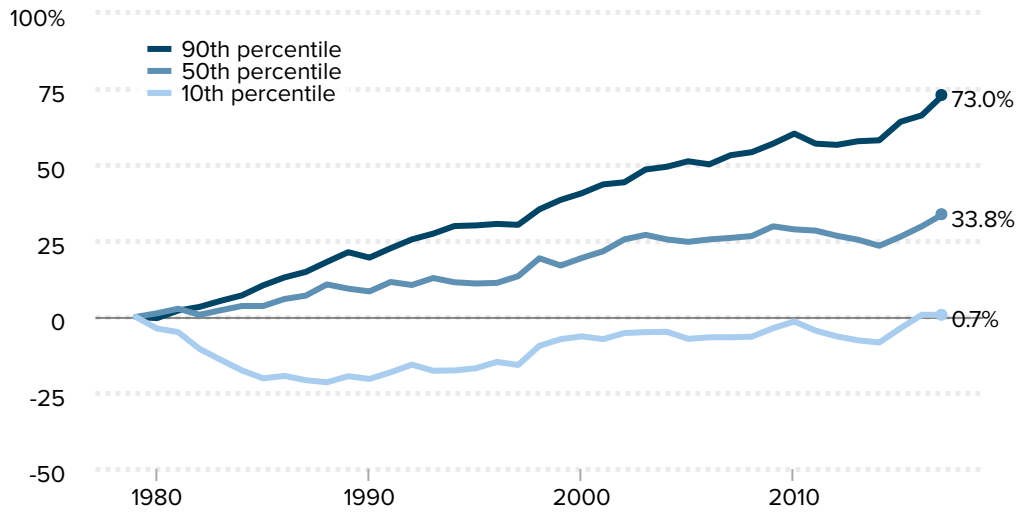


Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

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Figure C

Cumulative percent change in inflation-adjusted hourly wages for women at the 10th, 50th, and 90th percentiles, 1979–2017

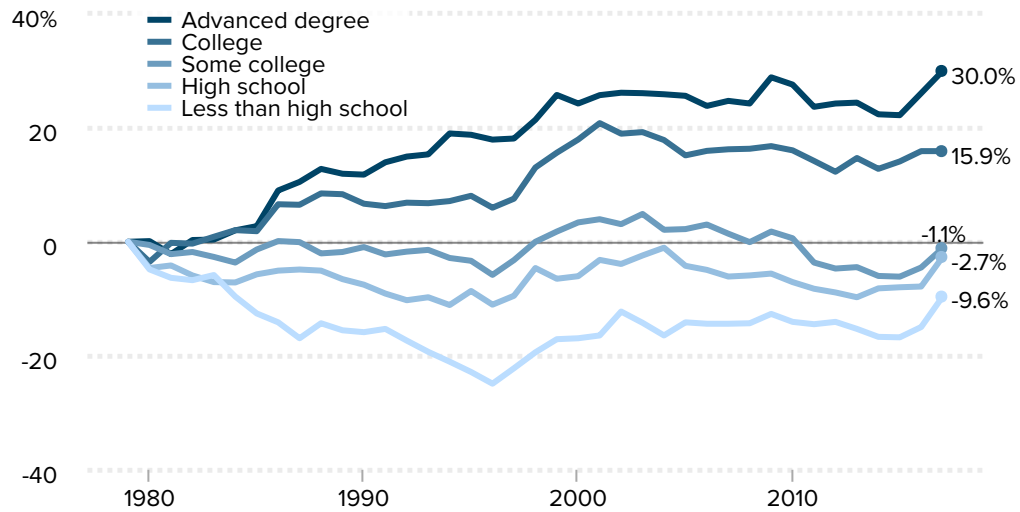


Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

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Figure D

Cumulative percent change in inflation-adjusted median hourly wages for all workers by education level, 1979–2017

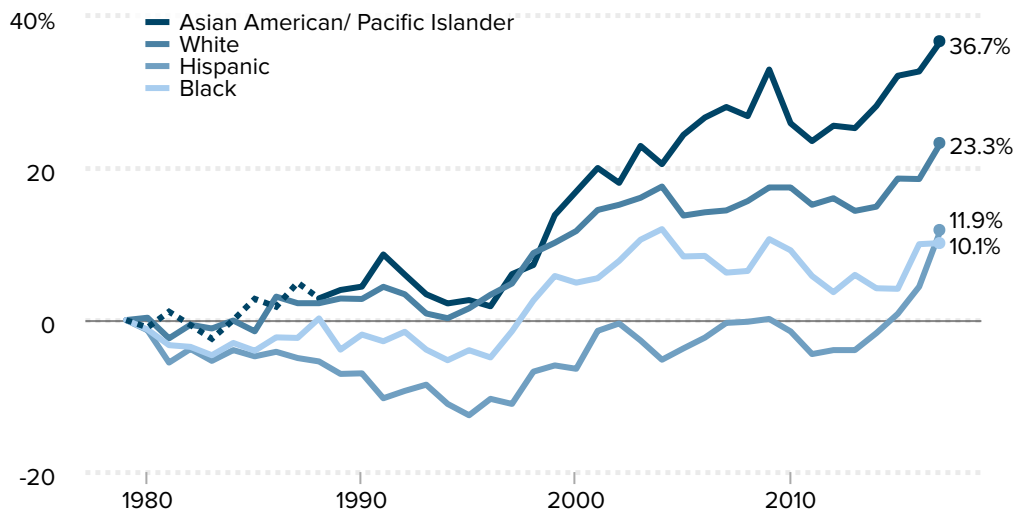


Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

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Figure E

Cumulative percent change in inflation-adjusted median hourly wages for all workers by race/ethnicity, 1979–2017



Note: Asian Americans and Pacific Islanders were included in the “Other” race category until 1989. From 1979 to 1989, we estimate wage growth for Asians Americans and Pacific Islanders using the “Other” category, which includes Asian Americans, Pacific Islanders, Native Americans, and other groups. Race/ethnicity categories are mutually exclusive (i.e., white non-Hispanic, black non-Hispanic, Asian American/Pacific Islander non-Hispanic, and Hispanic any race).

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

Economic Policy Institute

Table 2

Real wages and compensation, various measures, 2009–2017

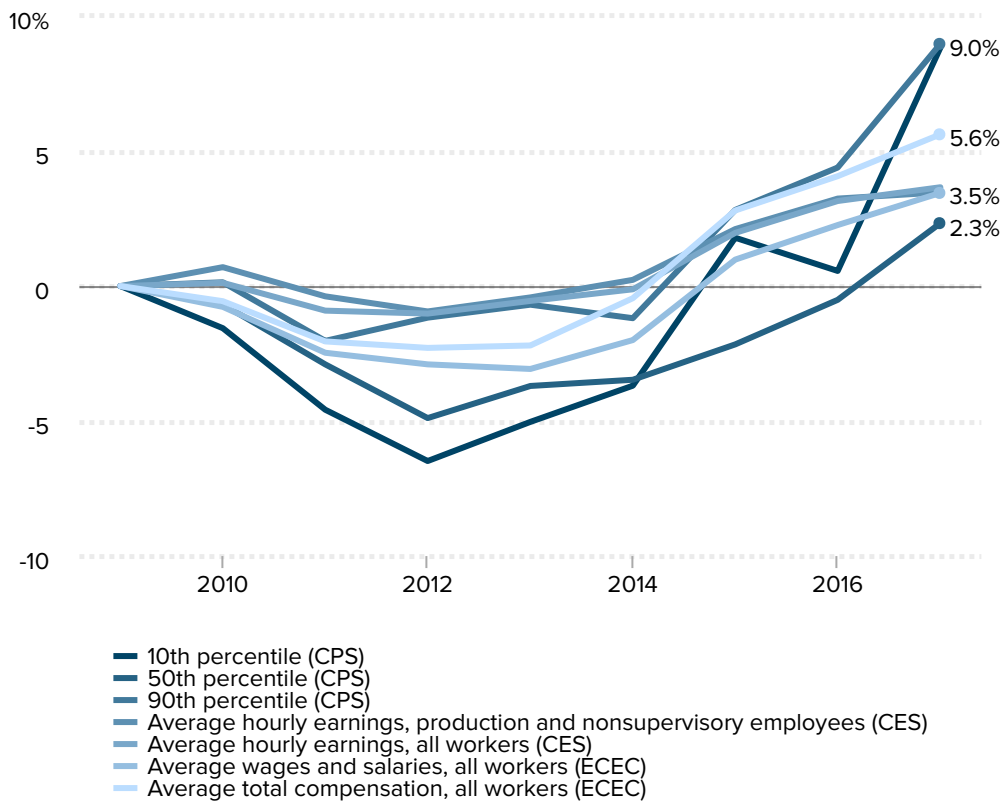
	10th percentile (CPS)	50th percentile (CPS)	90th percentile (CPS)	Average hourly earnings, production and nonsupervisory employees (CES)	Average hourly earnings, all workers (CES)	Average wages and salaries, all workers (ECEC)	Average total compensation, all workers (ECEC)
2009	\$8.95	\$17.59	\$41.91	\$21.31	\$25.39	\$23.45	\$33.63
2010	8.81	17.47	41.97	21.46	25.42	23.27	33.44
2011	8.54	17.08	41.06	21.23	25.16	22.87	32.94
2012	8.37	16.73	41.42	21.11	25.13	22.77	32.86
2013	8.50	16.94	41.62	21.22	25.25	22.73	32.89
2014	8.62	16.98	41.41	21.36	25.36	22.98	33.48
2015	9.11	17.21	43.09	21.76	25.89	23.68	34.57
2016	9.00	17.50	43.75	22.00	26.19	23.98	35.00
2017	9.74	18.00	45.67	22.05	26.32	24.26	35.52
Annualized percent change 2009–2017	11%	0.3%	1.1%	0.4%	0.4%	0.4%	0.7%

Source: EPI analysis of Current Population Survey (CPS) Outgoing Rotation Group microdata (columns 1–3), Current Employment Statistics (CES) published data series (columns 4–5), and Employer Costs for Employee Compensation (ECEC) published data series (columns 6–7)

Economic Policy Institute

Figure F

Real wages and compensation, various measures, 2009–2017

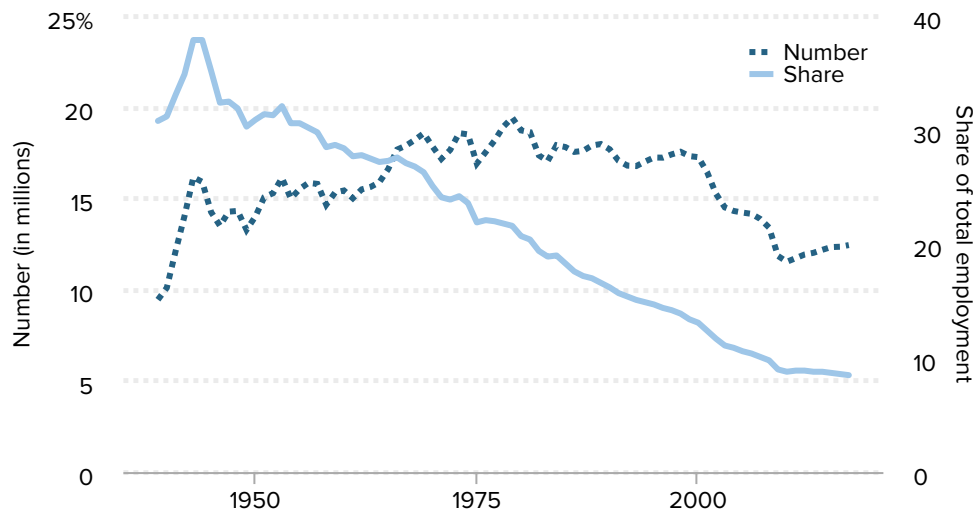


Source: EPI analysis of Current Population Survey (CPS) Outgoing Rotation Group microdata, Current Employment Statistics (CES) published data series, and Employer Costs for Employee Compensation (ECEC) published data series

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Figure G

Manufacturing employment, in millions, and as a share of total employment, 1939–2017

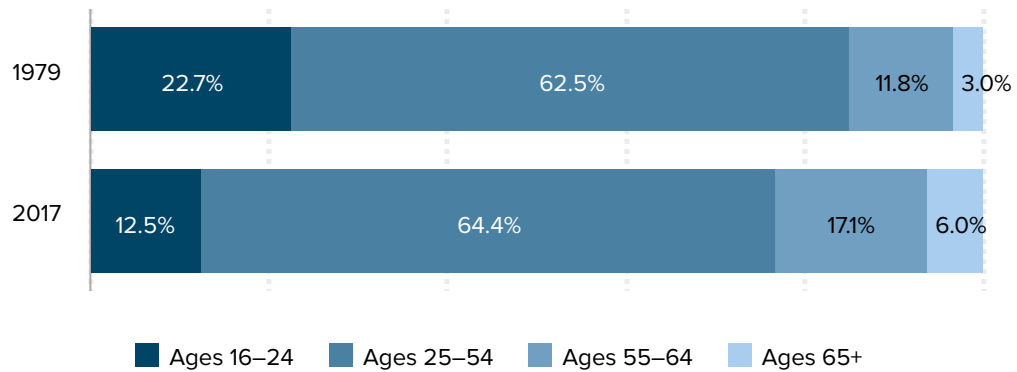


Source: EPI analysis of Current Employment Statistics published data series

Economic Policy Institute

Figure H

Composition of U.S. workforce by age, 1979 and 2017

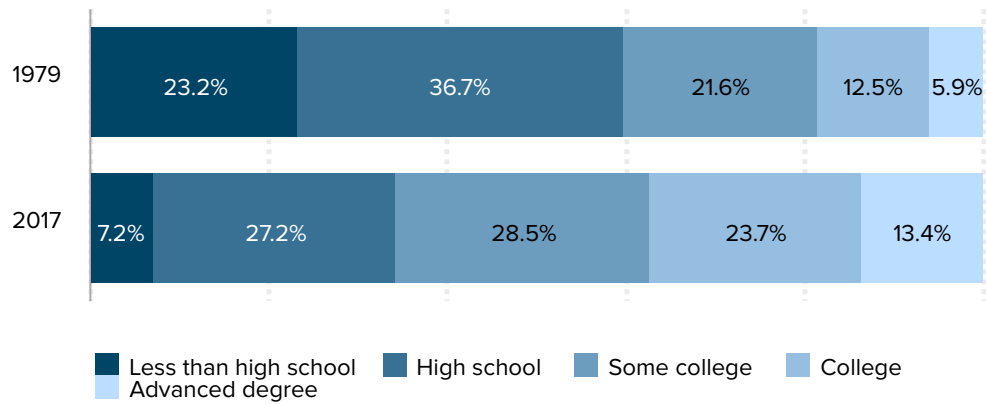


Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

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Figure I

Composition of U.S. workforce by education, 1979 and 2017

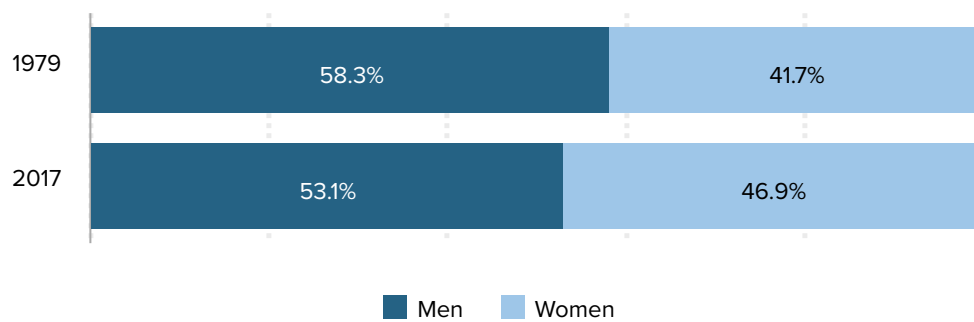


Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

Economic Policy Institute

Figure J

Composition of U.S. workforce by gender, 1979 and 2017

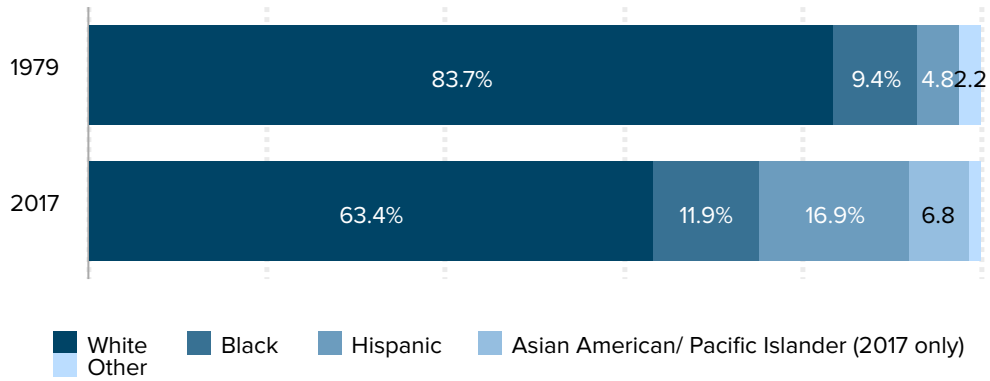


Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

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Figure K

Composition of U.S. workforce by race/ethnicity, 1979 and 2017



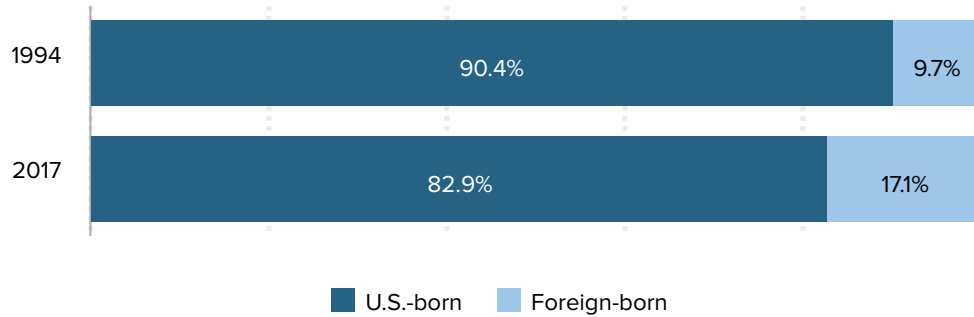
Notes: Asian Americans and Pacific Islanders are included in the “Other” race category in 1979 (the CPS survey did not have a separate “Asian American/Pacific Islander” category until 1989). Race/ethnicity categories are mutually exclusive (i.e., white non-Hispanic, black non-Hispanic, Asian American/Pacific Islander non-Hispanic, and Hispanic any race).

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

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Figure L

Composition of U.S. workforce by nativity, 1994 and 2017



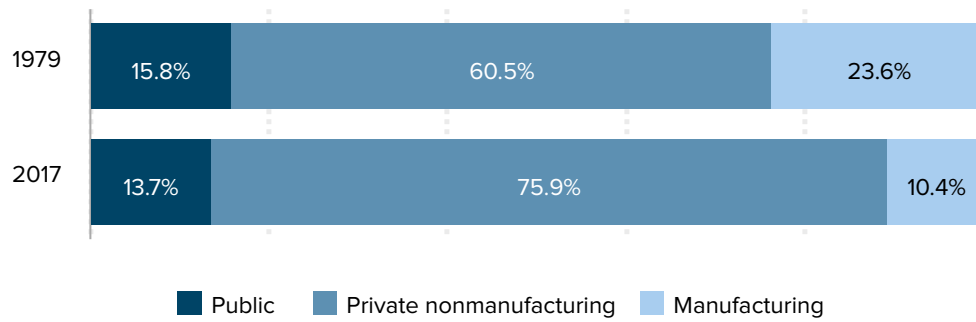
Note: The year 1994 is the earliest year for which the Current Population Survey asked respondents if they were born outside the country.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

Economic Policy Institute

Figure M

Composition of U.S. workforce by sector, 1979 and 2017

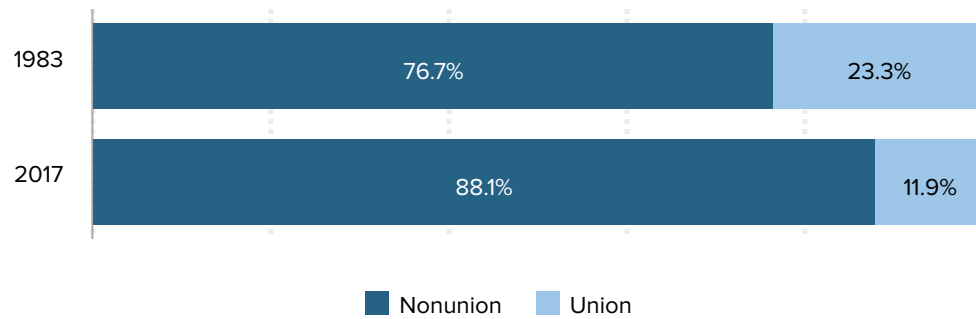


Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

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Figure N

Composition of U.S. workforce by union status, 1983 and 2017



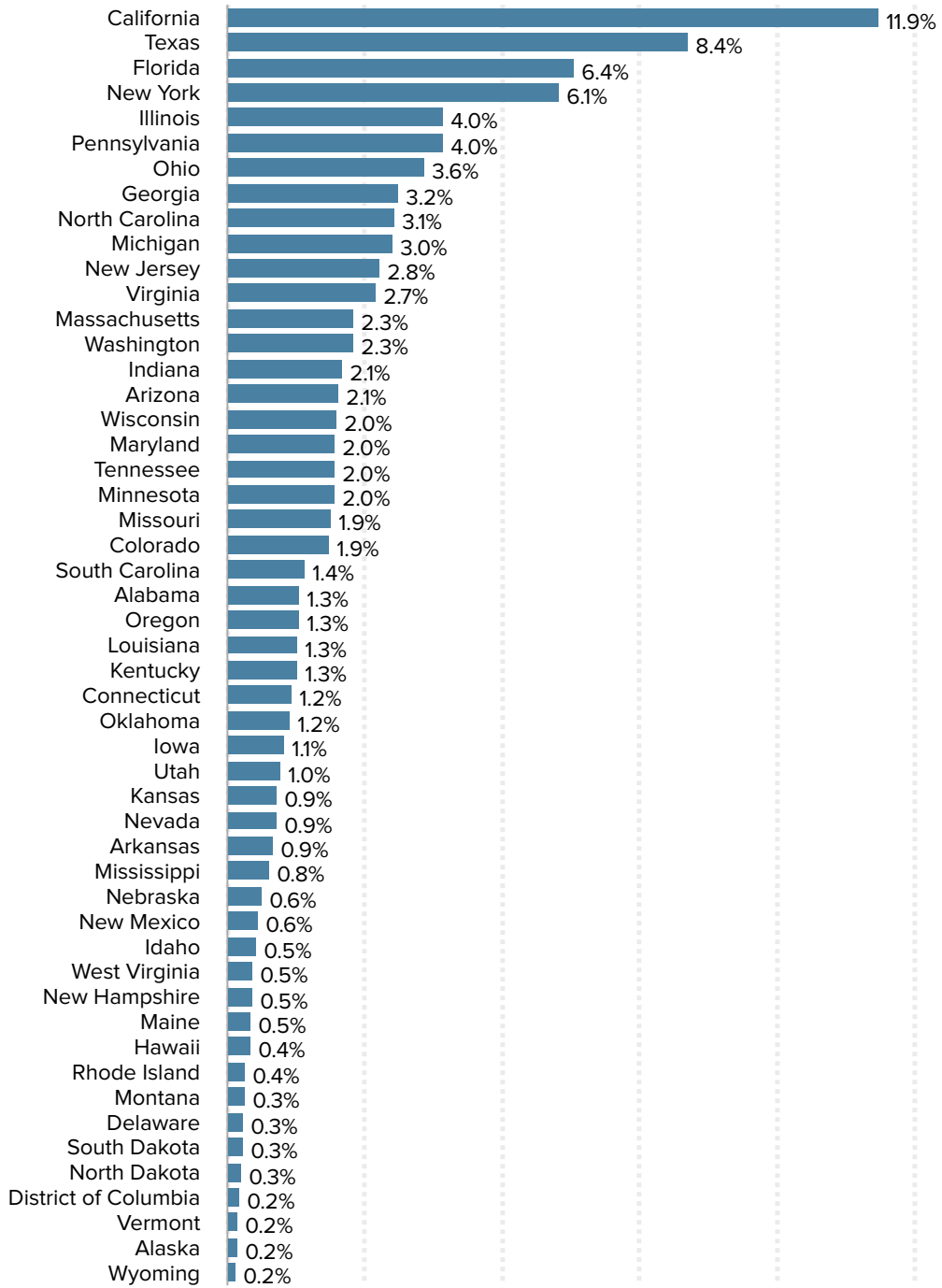
Note: The year 1983 is the earliest year for which union status is available in the data.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

Economic Policy Institute

Figure O

Composition of U.S. workforce by state, 2017



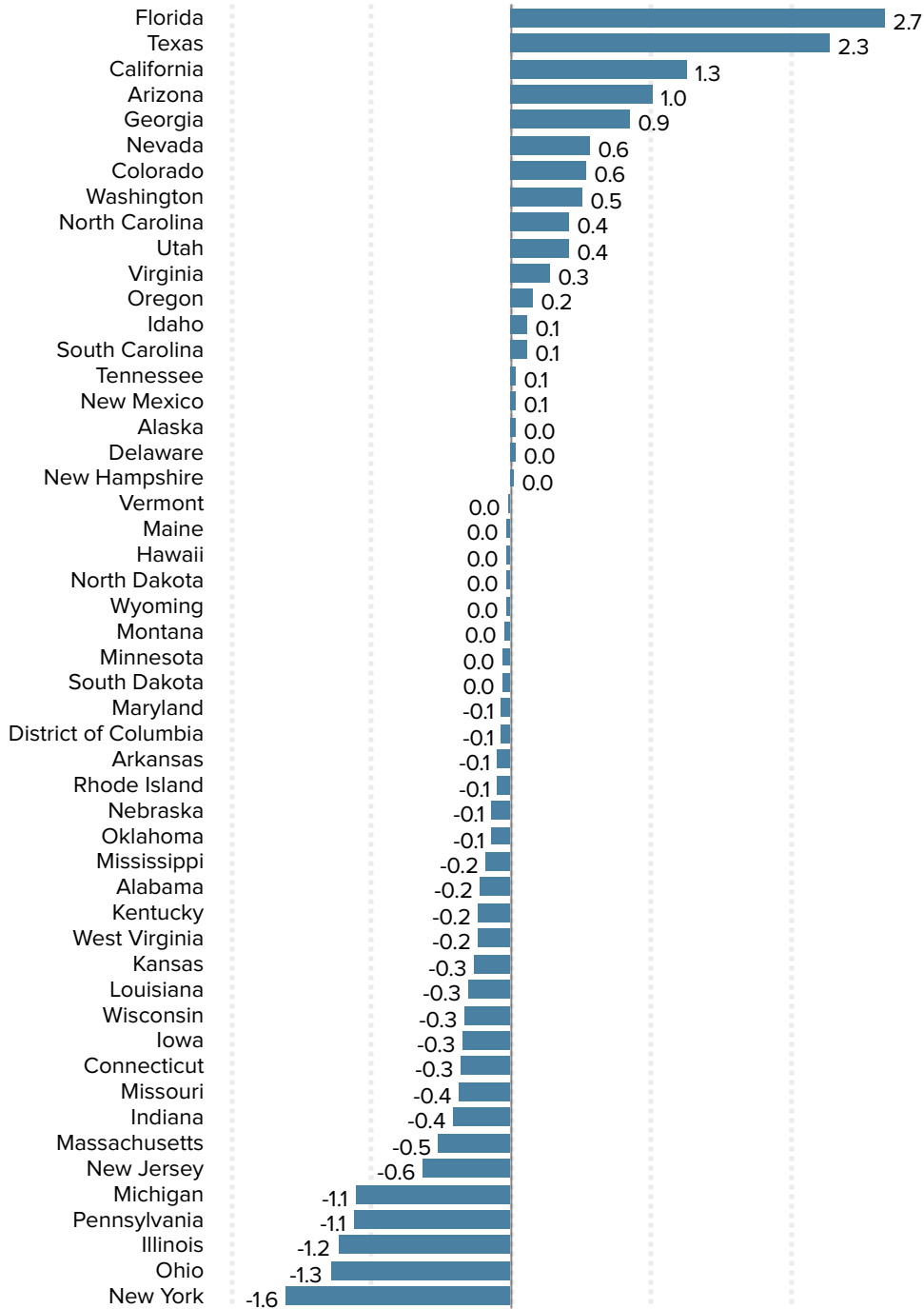
Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

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Figure P

Change in composition of U.S. workforce by state, 1979–2017

Percentage-point change in share of total U.S. employment



Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

Economic Policy Institute

Table 3

Regions

Region	States
Great Lakes	Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, Wisconsin
Manufacturing Southeast	Alabama, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee
California	California
Texas	Texas
Other Northeast	Connecticut, Delaware, District Of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, Rhode Island, Vermont
Other Southeast	Arkansas, Florida, Louisiana, Oklahoma, Virginia, West Virginia
Other Midwest	Iowa, Kansas, Missouri, Nebraska, North Dakota, South Dakota
Other Pacific	Alaska, Hawaii, Oregon, Washington
Other West	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming

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Table 4

Composition of U.S. workforce by region, 2017

Region	Share of U.S. workforce
Great Lakes	26.7%
Manufacturing Southeast	13.1%
Other Southeast	12.9%
California	11.9%
Other Northeast	10.3%
Texas	8.4%
Other West	7.4%
Other Midwest	5.1%
Other Pacific	4.3%
Total	100%

Notes: Numbers may not sum to 100% due to rounding. See Table 3 for a list of the states in each region.

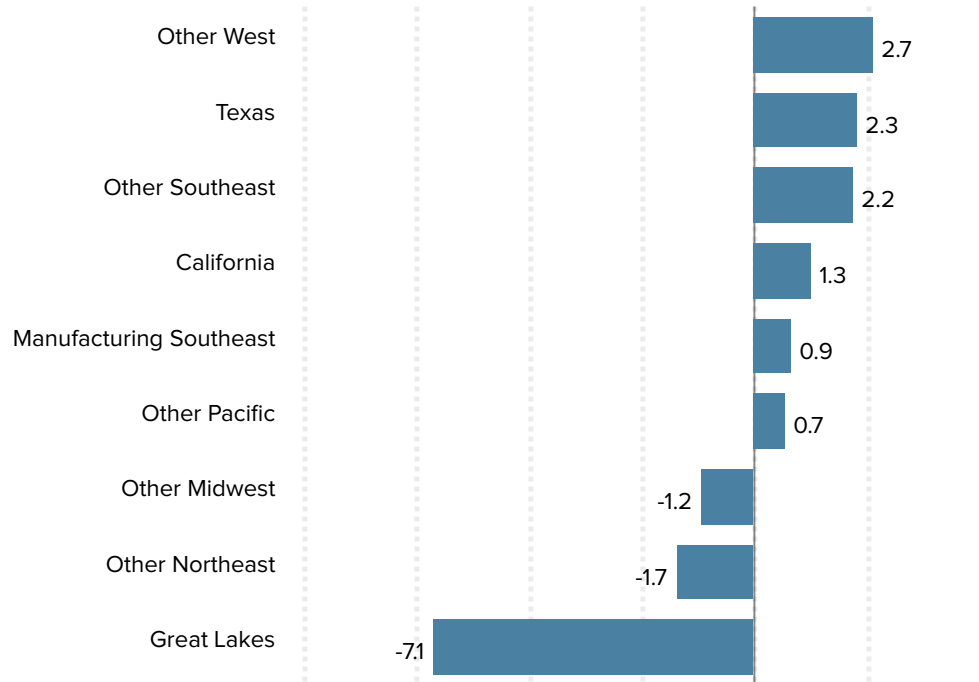
Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

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Figure Q

Change in composition of U.S. workforce by region, 1979–2017

Percentage-point change in share of total U.S. employment



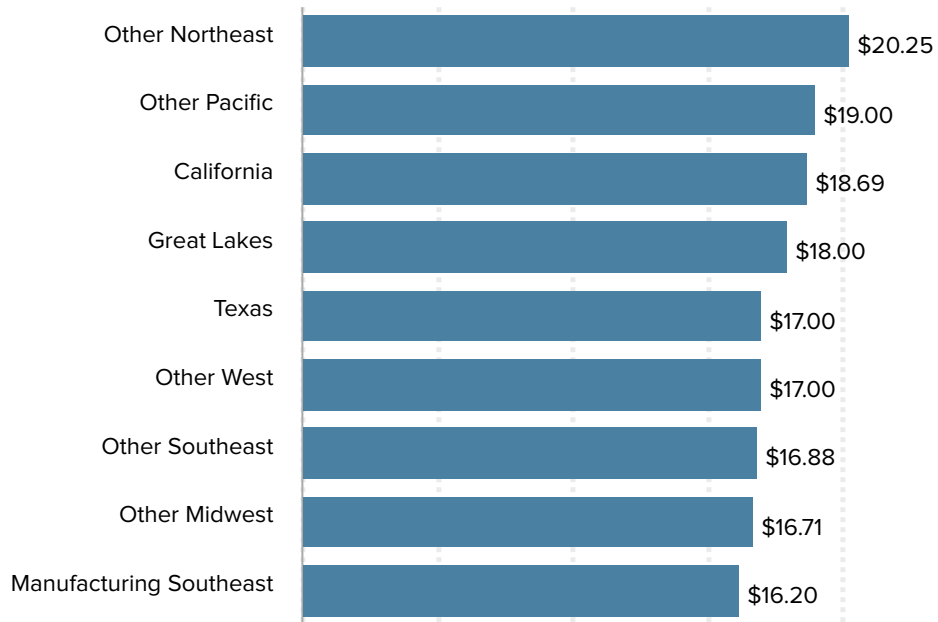
Note: See Table 3 for a list of the states in each region.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

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Figure R

Median hourly wages by region, 2015–2017 average



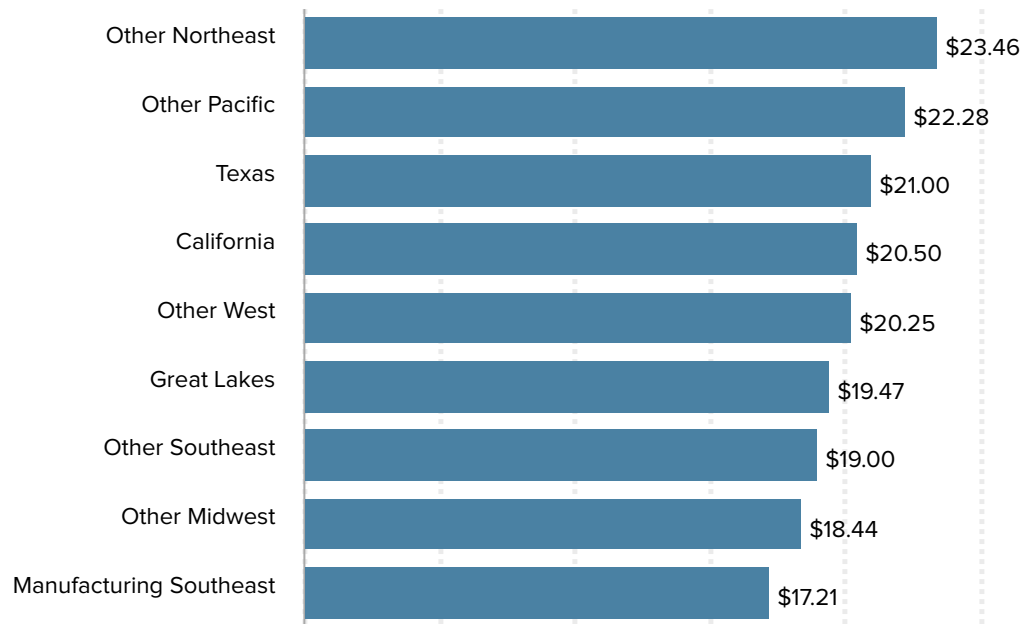
Notes: Calculations reflect pooled data for 2015 through 2017 to ensure sufficient sample sizes. Dollar values are constant 2017 dollars. See Table 3 for a list of the states in each region.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

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Figure S

Median hourly wages for manufacturing workers by region, 2015–2017 average



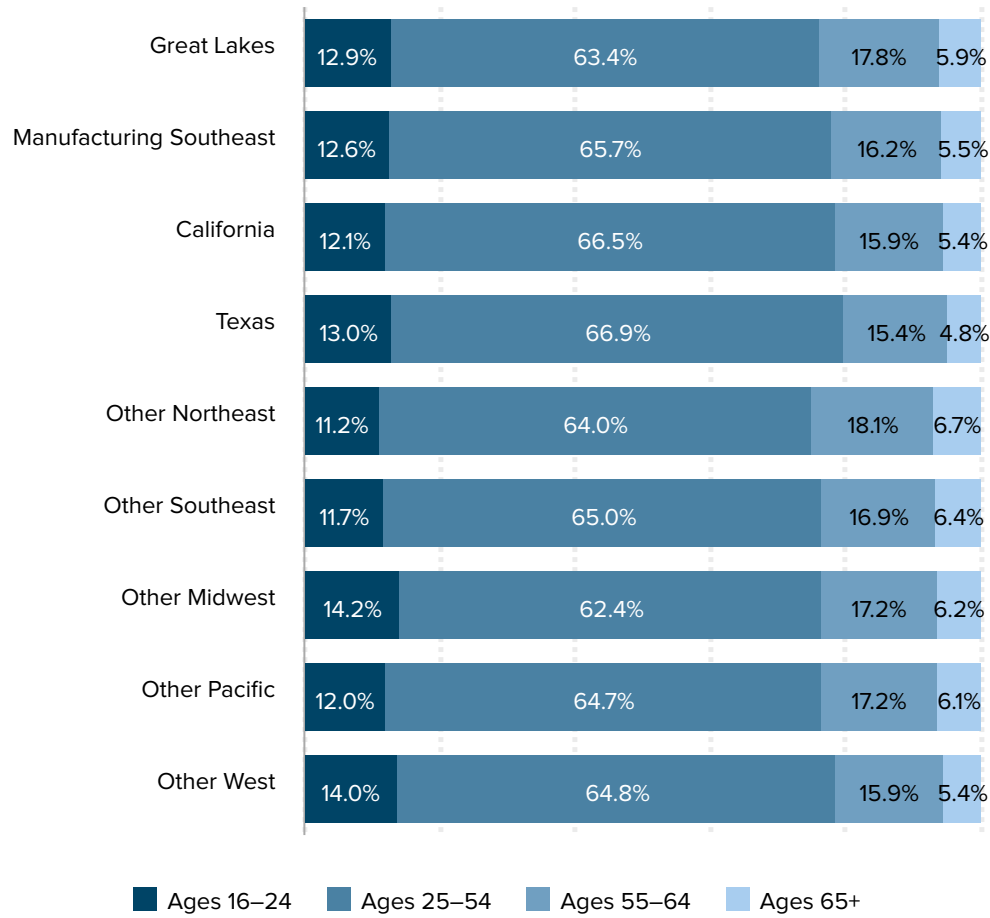
Notes: Calculations reflect pooled data for 2015 through 2017 to ensure sufficient sample sizes. Dollar values are constant 2017 dollars. See Table 3 for a list of the states in each region.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

Economic Policy Institute

Figure T

Composition of U.S. workforce by age and region, 2015–2017 average



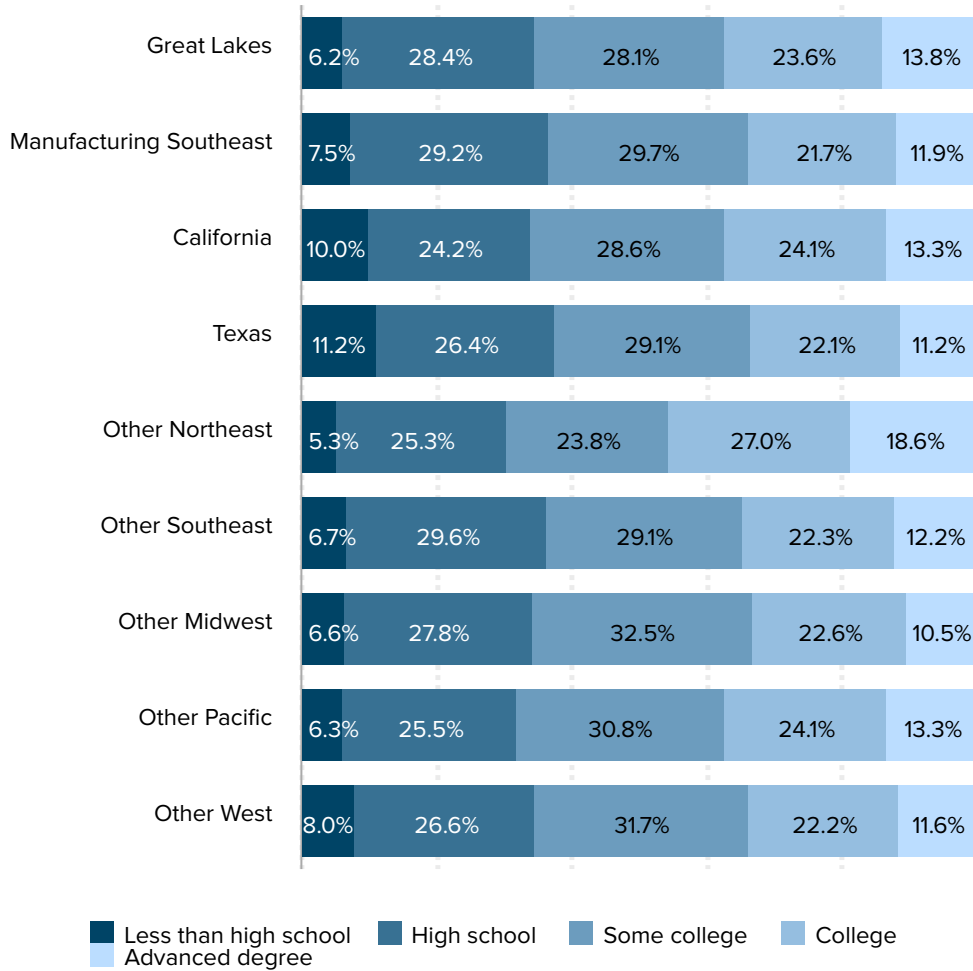
Notes: Calculations reflect pooled data for 2015 through 2017 to ensure sufficient sample sizes. See Table 3 for a list of the states in each region.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

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Figure U

Composition of U.S. workforce by education level and region, 2015–2017 average



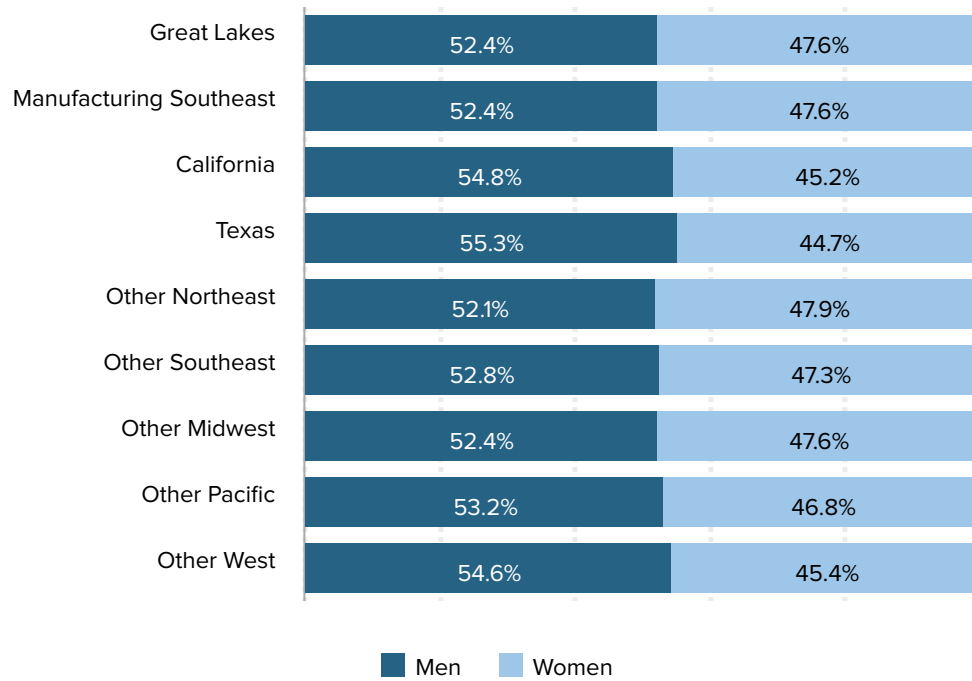
Notes: Calculations reflect pooled data for 2015 through 2017 to ensure sufficient sample sizes. See Table 3 for a list of the states in each region.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

Economic Policy Institute

Figure V

Composition of U.S. workforce by gender and region, 2015–2017 average



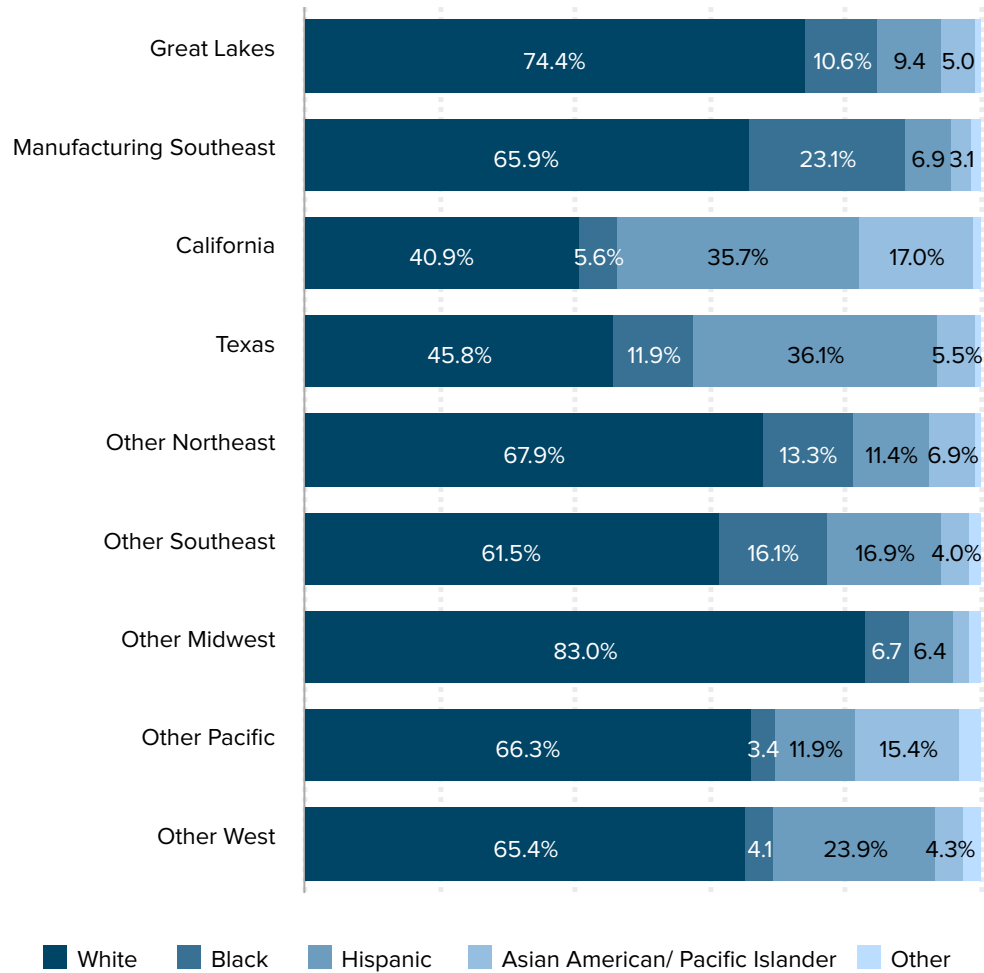
Notes: Calculations reflect pooled data for 2015 through 2017 to ensure sufficient sample sizes. See Table 3 for a list of the states in each region.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

Economic Policy Institute

Figure W

Composition of U.S. workforce by race/ethnicity and region, 2015–2017 average



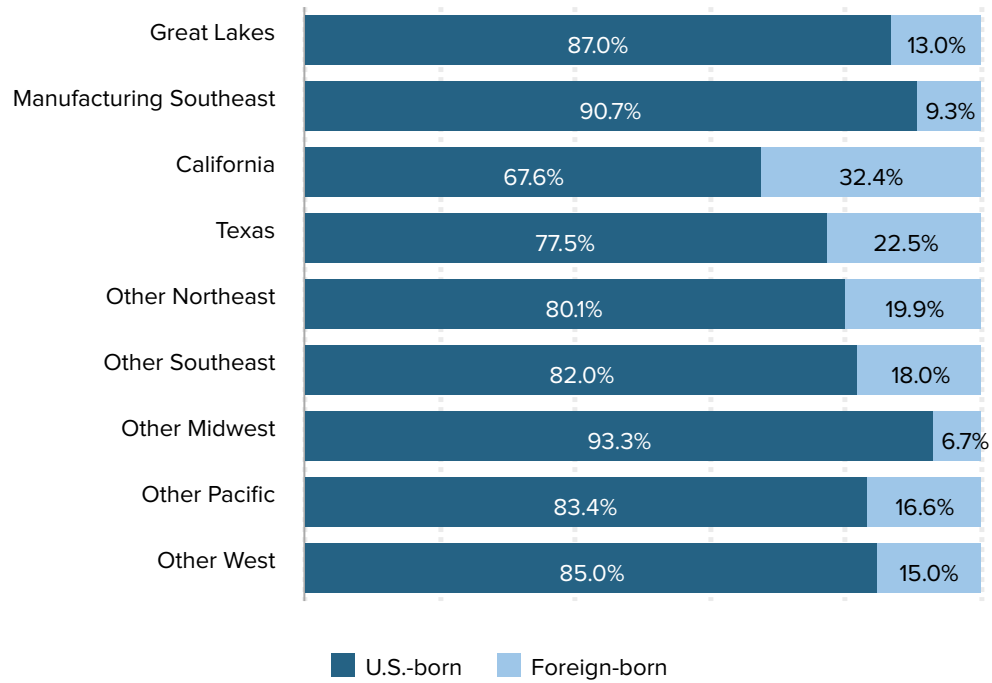
Notes: Calculations reflect pooled data for 2015 through 2017 to ensure sufficient sample sizes. Race/ethnicity categories are mutually exclusive (i.e., white non-Hispanic, black non-Hispanic, Asian American Pacific Islander non-Hispanic, and Hispanic any race). See Table 3 for a list of the states in each region.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

Economic Policy Institute

Figure X

Composition of U.S. workforce by nativity and region, 2015–2017 average



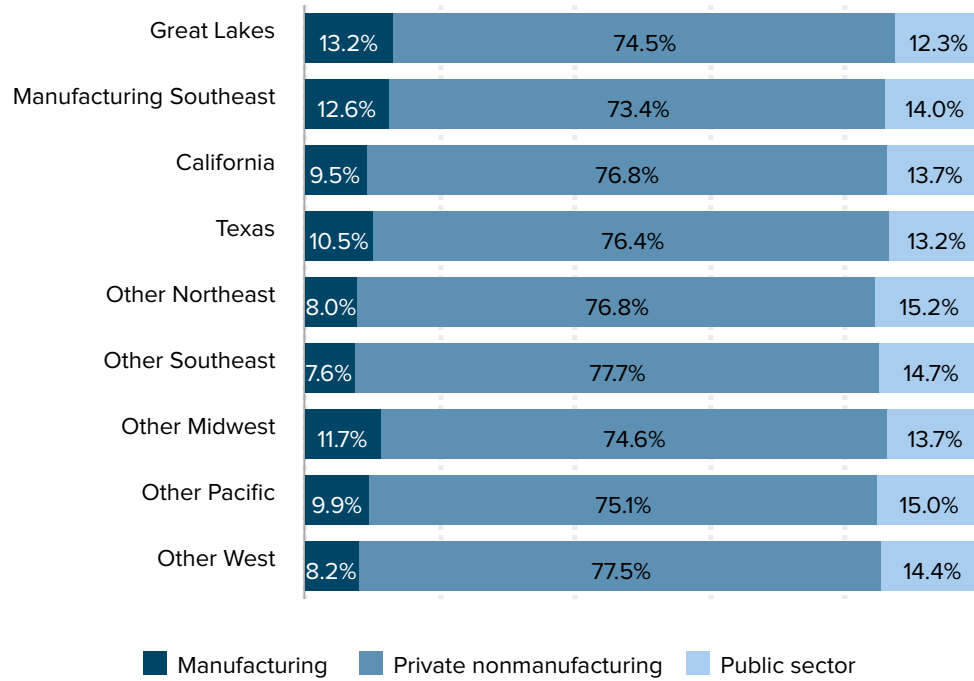
Notes: Calculations reflect pooled data for 2015 through 2017 to ensure sufficient sample sizes. See Table 3 for a list of the states in each region.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

Economic Policy Institute

Figure Y

Composition of U.S. workforce by sector and region, 2015–2017 average



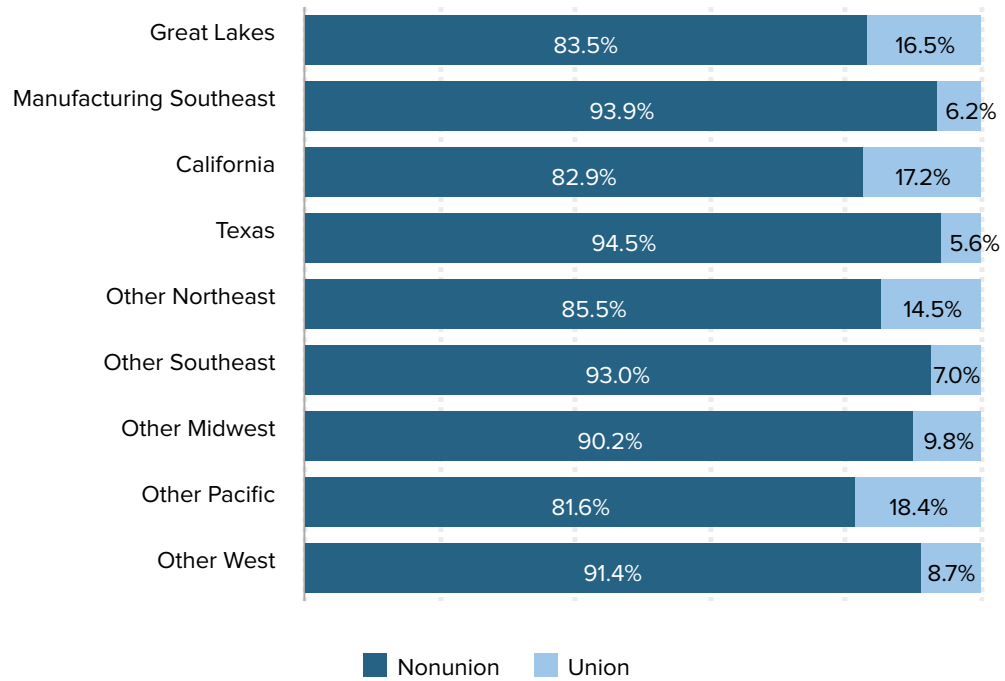
Notes: Calculations reflect pooled data for 2015 through 2017 to ensure sufficient sample sizes. See Table 3 for a list of the states in each region.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

Economic Policy Institute

Figure Z

Composition of U.S. workforce by union status and region, 2015–2017 average



Notes: Calculations reflect pooled data for 2015 through 2017 to ensure sufficient sample sizes. See Table 3 for a list of the states in each region.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata

Economic Policy Institute

Endnotes

1. For a comprehensive review of the historical data on wages and incomes, see Lawrence Mishel et al., *The State of Working America* (Ithaca, N.Y.: Cornell Univ. Press, 2012).
2. For salaried workers, we rely on estimates of hourly pay based on dividing an annual salary by the usual hours worked per year.
3. We use the CPI-U-RS, linked to the CPI-U-X1 and then the CPI-U, for years when the CPI-U-RS is not available
4. Together, women and workers of color are already a large majority of the U.S. workforce. Workers of color will make up the majority of the U.S. working class (defined as those without a four-year college degree) by 2032 (see Valerie Wilson, *People of Color Will Be a Majority of the American Working Class in 2032*, Economic Policy Institute, June 2016).
5. Bureau of Economic Analysis (BEA), National Income and Product Accounts, Tables 2.1 and 6.9, accessed August 2018 via BEA's [interactive data application](#).
6. Bureau of Labor Statistics, Current Employment Statistics [interactive data](#), average hourly earnings for production and nonsupervisory workers, series CES0500000008, accessed August 2018.
7. Social Security Administration, *Wage Statistics*, various years, accessed August 2018; and Kopczuk Wojciech, Emmanuel Saez, and Jae Song, "Earnings Inequality and Mobility in the United States: Evidence from Social Security Data Since 1937," *Quarterly Journal of Economics* 125, no. 1 (February 2010): 91–128. <https://doi.org/10.1162/qjec.2010.125.1.91>.
8. Thomas Piketty and Emmanuel Saez, Table B3, in Excel files downloadable at <https://eml.berkeley.edu/~saez/TabFig2015prel.xls> (published 2016, accessed August 2018); files are 2015 data updates to the tables and figures in Piketty and Saez, "Income Inequality in the United States, 1913–1998," *Quarterly Journal of Economics* 118, no. 1 (February 2003): 1–39. Mishel et al. provide evidence that the Piketty and Saez results reflect, in part, that households supplied more hours of work to the paid labor market beginning in 1979; as a result, household earnings growth was faster than individuals' earnings growth; see Lawrence Mishel et al., *The State of Working America* (Ithaca, N.Y.: Cornell Univ. Press, 2012).
9. The main source of data presented here is the Current Population Survey (CPS)'s Outgoing Rotation Group drawn from either the Center for Economic and Policy Research [extract](#) of the CPS Outgoing Rotation Group or from the Economic Policy Institute's *State of Working America Data Library*.
10. The increases in age and education hold for workers at the middle and the bottom of the pay scale. For more details, see Lawrence Mishel, *Low-Wage Workers Have Far More Education Than They Did in 1968, Yet They Make Far Less*, Economic Policy Institute, January 2014; and Cherrie Bucknor, *Low-Wage Workers: Still Older, Smarter, and Underpaid*, Center for Economic and Policy Research, May 2015.
11. See Josh Bivens and Ben Zipperer, *The Importance of Locking in Full Employment for the Long Haul*, Economic Policy Institute, August 2018; and Dean Baker and Jared Bernstein, *Getting Back to Full Employment: A Better Bargain for Working People*, Center for Economic and Policy Research, 2013.

12. See Table 2.
13. See Thomas Piketty and Emmanuel Saez, “Income Inequality in the United States, 1913–1998,” *Quarterly Journal of Economics* 118, no. 1 (February 2003): 1–39; see also the 2015 data updates to Piketty and Saez 2003, downloadable at <https://eml.berkeley.edu/~saez/TabFig2015prel.xls>.
14. For a detailed look at wage trends since 2000, see Elise Gould, *The State of American Wages 2017: Wages Have Finally Recovered from the Blow of the Great Recession but Are Still Growing Too Slowly and Unequally*, Economic Policy Institute, March 2018. For additional details on the closing of the gender pay gap, see Elise Gould, Jessica Schieder, and Kathleen Geier, *What Is the Gender Pay Gap and Is It Real?: The Complete Guide to How Women Are Paid Less Than Men and Why It Can't Be Explained Away*, Economic Policy Institute, October 2016.
15. These race and ethnicity categories are defined consistently throughout. For example, unless otherwise specified, “white” is used to mean “white non-Hispanic.” In this example, the “Asian American/Pacific Islander” group is Asian Americans and Pacific Islanders from 1989 through 2017, spliced to the “Other” category for 1979 to 1989, which includes Asian Americans, Pacific Islanders, Native Americans, and other groups.
16. For more on the relationship between a sustained tight labor market and wage growth, see Josh Bivens and Ben Zipperer, *The Importance of Locking in Full Employment for the Long Haul*, Economic Policy Institute, August 2018.
17. See Elise Gould, *The State of American Wages 2017: Wages Have Finally Recovered from the Blow of the Great Recession but Are Still Growing Too Slowly and Unequally*, Economic Policy Institute, March 2018.
18. See Economic Policy Institute, *State of Working America Data Library*, “Productivity and Hourly Compensation” and “Wage Ratios” (accessed August 2018).
19. See Economic Policy Institute, *State of Working America Data Library*, “Health Insurance Coverage” (accessed August 2018); and Hye Jin Rho and John Schmitt, *Health-Insurance Coverage Rates for US Workers, 1979–2008*, Center for Economic and Policy Research, March 2010.
20. Lawrence Mishel et al., *The State of Working America* (Ithaca, N.Y.: Cornell Univ. Press, 2012), Figure 4J.
21. Economic Policy Institute, *State of Working America Data Library*, “Pension Coverage” (accessed August 2018).
22. Lawrence Mishel, *Yes, Manufacturing Still Provides a Pay Advantage, but Staffing Firm Outsourcing Is Eroding It*, Economic Policy Institute, March 2018.
23. For more on the benefits of collective bargaining, see Josh Bivens et al., *How Today's Unions Help Working People: Giving Workers the Power to Improve Their Jobs and Unrig the Economy*, Economic Policy Institute, August 2017.
24. Lawrence Mishel et al., *The State of Working America* (Ithaca, N.Y.: Cornell Univ. Press, 2012), Table 4.33.
25. See Tom VanHeuvelen, “Moral Economies or Hidden Talents? A Longitudinal Analysis of Union Decline and Wage Inequality, 1973–2015,” *Social Forces*, May 2018, <https://doi.org/10.1093/sf/soy045>; and Jake Rosenfeld, Patrick Denice, and Jennifer Laird, *Union Decline Lowers Wages of Nonunion Workers: The Overlooked Reason Why Wages Are Stuck and Inequality is Growing*,

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26. See Hye Jin Rho et al., *Diversity and Change: Asian American and Pacific Islander Workers*, Center for Economic and Policy Research, July 2011.
27. Using data from the decennial census in 1980, the immigrant share of the total labor force—which includes the workforce plus the unemployed—was 6.7 percent; see Migration Policy Institute, “Immigrant Share of the U.S. Population and Civilian Labor Force, 1980–Present” (online chart), accessed August 2018.
28. For further details, see Josh Bivens et al., *How Today’s Unions Help Working People: Giving Workers the Power to Improve Their Jobs and Unrig the Economy*, Economic Policy Institute, August 2017; and John Schmitt and Kris Warner, “The Changing Face of U.S. Labor, 1983–2008,” *WorkingUSA* 13, no. 2 (June 2010): 263–279.
29. For maps defining regions and divisions, see the pages “Regions” and “Divisions” at the U.S. Census Bureau’s Geography Web Atlas (<https://www.census.gov/geo/reference/webatlas/>).
30. Andrew Stettner, Joel S. Yudken, and Michael McCormack, *Why Manufacturing Jobs Are Worth Saving*, The Century Foundation, June 2017.
31. Authors’ analysis of CPS microdata.
32. For further reading, see Josh Bivens and Ben Zipperer, *The Importance of Locking in Full Employment for the Long Haul*, Economic Policy Institute, August 2018; Elise Gould, *The State of American Wages 2017: Wages Have Finally Recovered from the Blow of the Great Recession but Are Still Growing Too Slowly and Unequally*, Economic Policy Institute, March 2018; Josh Bivens, Lawrence Mishel, and John Schmitt, *It’s Not Just Monopoly and Monopsony: How Market Power Has Affected American Wages*, Economic Policy Institute, April 2018; and Lawrence Mishel et al., *The State of Working America* (Ithaca, N.Y.: Cornell Univ. Press, 2012).