

State of Working America

Wages 2018

Wage inequality marches on—and is even threatening data reliability

Report • By [Elise Gould](#) • February 20, 2019

Rising wage inequality and sluggish hourly wage growth for the vast majority of workers have been defining features of the American labor market for nearly four decades, despite steady productivity growth. The U.S. economy of the last several years has been no exception. Although the unemployment rate continued to fall and participation in the labor market continued to grow over the last year, most workers are experiencing moderate wage growth and even workers who have seen more significant gains are just making up ground lost during the Great Recession and slow recovery rather than getting ahead.

This report analyzes data from the Current Population Survey (CPS) and details the most up-to-date hourly wage trends through 2018 across the wage distribution and education categories, highlighting important differences by race and gender. By looking at real (i.e., inflation-adjusted) hourly wages by percentile, we can compare what is happening over time for the lowest-wage workers (those at the 10th and 20th percentiles) and for middle-wage workers (those at or near the 50th percentile) with wage trends for the highest-wage workers (those at the 90th and 95th percentiles).

The data show not only rising inequality in general, but also the persistence, and in some cases worsening, of wage gaps by gender and race. What also stands out in this last year of data is that, while wages are growing for most workers, wage growth continues to be slower than would be expected in an economy with relatively low unemployment. Given this slow wage growth, policymakers should not presume that the economy has already achieved (or even surpassed, as some claim) full employment. Instead, policymakers should try to keep labor markets as tight as possible for as long as possible to see if wage growth lost during the Great Recession can be clawed back, and to see if wage disparities by gender and race can be reduced.

SECTIONS

1. Summary of key findings • 2
2. Methodological considerations • 6
3. Wage inequality across the wage distribution • 9
4. Wages by gender • 10
5. Wage growth and the minimum wage • 12
6. Wages by race/ethnicity • 13
7. Wages by education level • 14
8. Conclusion • 17

About the author • 18

Acknowledgments • 18

Endnotes • 37

References • 37

New in this report: Accounting for “top-coding” in the CPS

The CPS is one of the best measures of hourly pay because it allows researchers to analyze differences across the wage distribution and by demographic characteristics. However, for confidentiality reasons, the CPS “top-codes” weekly earnings: All workers who report weekly earnings *above* \$2,884.61 (annual earnings for full-year workers above \$150,000) are recorded as having weekly earnings of *exactly* \$2,884.61, to preserve the anonymity of respondents. This top-code amount of \$2,884.61 hasn’t changed or been updated for inflation in 20 years and, as a result, a growing share of workers are assigned this weekly earnings value rather than having their actual wages reported. Because these workers’ actual wages are masked by the top-code, it has become harder to uncover the extent of top-end wage levels and growth. Other data, such as data from the Social Security Administration, illustrates that wage growth is far more concentrated at the top than can be illustrated using the CPS, with growth at and within the top 1 percent exhibiting growth orders of magnitude faster than at the 95th percentile. In the most recent year of data, the top-code is assigned to more than 5 percent of weekly earnings for male workers in the CPS; with no adjustment, this would compromise our 95th-percentile hourly wage estimates. For the purposes of this report, we use what we think is an acceptable proxy for wage growth at this percentile, as described in the “Methodological considerations” section of this report.

Summary of key findings

Below is a summary of the key findings of this report. These findings are outlined in greater detail in subsequent sections of the report.

Considerations and cautions when using the Current Population Survey (CPS) to measure wages in a world of growing inequality. Regarding stagnant top-codes, month-to-month volatility, and the data sample, we find that:

- Top-coding of weekly earnings is catching an increasing number and share of workers as inequality continues to climb, making it increasingly difficult to obtain reliable measures of 95th-percentile wages, particularly for male workers and white workers. Therefore, caution should be exercised when examining recent wage levels and trends for these workers.
- Because the CPS exhibits a fair amount of year-to-year volatility, one-year changes in wages by decile in the CPS—while providing new and valuable information—should be taken with a grain of salt.

- Caution should be exercised when making comparisons with prior-year versions of this report, as the data sample has changed; notably, the analysis here includes all workers 16 years of age and older to be both consistent with other Bureau of Labor Statistics analyses and reflective of a growing number of workers ages 65 and older in the labor market.

Wage inequality. From 2000 to 2018, wage growth was strongest for the highest-wage workers, continuing the trend in rising wage inequality over the last four decades.

- Since 2007, the labor market peak before the Great Recession, the strongest wage growth has continued to be within the top 10 percent of the wage distribution.
- From 2017 to 2018, relatively fast growth continued at the top (2.7 percent at the 95th percentile), but the 20th and 30th percentiles saw the strongest growth at 4.8 percent and 3.7 percent, respectively. Median wages grew 1.6 percent over the year.

Wage inequality by gender. While wage inequality has generally been on the rise for both men and women, wage inequality is higher and growing more among men than among women.

- Because of their relatively high wages, particularly at the top of the wage distribution, men are far more likely to be affected by the top-code in recent years, making it more difficult to accurately assess 95th-percentile wage levels and wage growth.
- From 2017 to 2018, men at the 95th percentile saw large wage gains, while those at the middle and very bottom of their wage distribution experienced downright wage losses. Since 2000, men’s wages at the 95th percentile grew 42.0 percent, more than twice as fast as at the 90th percentile (17.1 percent), while the median man’s wage barely budged, rising only 0.8 percent over the entire 18-year period.
- Women have experienced more equal wage growth since 2000, and their wage growth from 2017 to 2018 was relatively more broadly shared as well, with stronger growth among the bottom 30 percent than among the top 20 percent. Since 2000, wage inequality has grown less among women compared with men.

Gender wage gap. The “gender wage gap” refers to the historically persistent difference between what men and women are paid in the workplace. While significant gender wage gaps remained across the wage distribution, the gender wage gap at the median continued to shrink over the last year, with a typical woman paid 84 cents on the typical man’s dollar in 2018 (or, facing a 16 percent wage gap).

- The gender wage gap at the 10th percentile remains the smallest across the wage distribution and it has narrowed since 2000; it is currently at 5.9 percent.
- As inequality among men has continued to increase, it is not surprising that the gender wage gap at the top grew significantly and that 95th-percentile women are paid 33.6 percent less in 2018 than 95th-percentile men.
- The regression-adjusted average gender wage gap narrowed slightly from 2000 to 2018 and is currently at 22.6 percent. This measure accounts for differences in educational attainment, age, and other potentially relevant characteristics for wages,

and reports the gender wage gap remaining after these statistical controls are used.

Wage growth in states with minimum wage increases. From 2017 to 2018, wages of the lowest-wage workers grew more in states that increased their minimum wage in 2018.

- On average, in the 29 states without minimum wage increases in 2018, the 10th-percentile wage rose 1.6 percent; in states with minimum wage increases in 2018 (including the District of Columbia), the average 10th-percentile wage rose by 2.1 percent.
- The differential is larger when looking across recent years with many minimum wage increases: Between 2013 and 2018, when 26 states and D.C. experienced at least one minimum wage increase, the 10th-percentile wage grew much faster in those states (and in D.C.) than in states without any increase (13.0 percent vs. 8.4 percent).
- In both comparison periods, both men and women at the 10th percentile saw greater wage growth in states with minimum wage changes versus those without.

Wage growth by race/ethnicity. At every decile, wage growth since 2000 was faster for white and Hispanic workers than for black workers.

- Over the last 18 years, wage growth for white and Hispanic workers has been about four times faster than that of black workers in the 20th through the 70th percentiles of their respective wage distributions. The 60th and 70th percentiles of the black wage distribution remain below their 2000 levels.
- Because of their higher wages, the 95th percentile white wage has to be imputed using the same method as described for male workers. Regardless of measurement, between 2017 and 2018, the strongest wage growth among white workers was at the 95th percentile, while white workers at the 10th percentile experienced downright declines. White wages grew across the wage distribution since 2000.
- Over the entire period from 2000 to 2018, Hispanic workers experienced relatively more broadly based wage growth, with strong growth at the top as well as at the median and at the bottom. From 2017 to 2018, however, Hispanic workers' wages faltered, with outright declines (or stagnation) for the top half of the wage distribution.

Racial/ethnic wage gaps. Wage gaps by race/ethnicity describe how much less African American and Hispanic workers are paid relative to white workers. Throughout the wage distribution, black–white wage gaps were larger in 2018 than in 2000; conversely, Hispanic workers have been slowly closing the gap with white workers in the bottom 80 percent of the wage distribution.

- The regression-adjusted black–white wage gap (controlling for education, age, race, and region) has become larger over the last year (EPI 2019d).
- While the Hispanic–white wage gap has remained fairly constant over the last 18 years (12.3 percent in 2000 compared with 11.8 percent in 2018), the black–white gap was significantly larger in 2018 (16.2 percent) than it was in 2000 (10.2 percent). In 2000, the regression-adjusted Hispanic–white wage gap was larger than the regression-adjusted black–white wage gap. By 2018, the reverse was true.

Wage growth by education. From 2000 to 2018, the strongest wage growth occurred among those with advanced degrees, those with college degrees, and those with less than a high school diploma.

- Over the last year, the strongest wage growth occurred among those with some college and those with advanced degrees, a reversal from 2016 to 2017, when wages fell among these workers.
- The wages of those with a high school diploma rose faster than the wages of those with a college degree over the last two years, narrowing the gap between college and high school wages. As a result, the college wage premium—the regression-adjusted log-wage difference between the wages of college-educated and high school-educated workers—fell from 50.6 percent to 48.4 percent between 2016 and 2018.
- Between 2000 and 2018, the college wage premium rose slightly, from 47.0 percent to 48.4 percent over that whole period. The growth in the college wage premium was nowhere near fast enough to explain the total rise in wage inequality over that time.
- For the first time in this recovery, workers with some college just reached their 2000 wage level in 2018.

Wage growth by education and gender. Since 2000, wage growth for those with a college or advanced degree was faster for men than for women, while wage growth for those with a high school diploma or some college was faster for women than for men.

- In general, the women’s wage distribution by educational attainment is more compressed; that is, the wage differences between workers of different levels of education are not quite as large for women as they are for men.
- While there has been a slow narrowing of gender wage gaps since 2000 for those with high school diplomas and for those with some college, gender wage gaps were wider than in 2000 among those with less than high school, those with college degrees, and those with advanced degrees.
- At every education level, women are paid consistently less than their male counterparts, and the average wage for a man with a college degree is higher than the average wage for a woman with an advanced degree.

Wage growth by education and race/ethnicity. From 2000 to 2018, wage growth for white and black workers tended to be faster for those with more education than for those with less education.

- Average wages grew faster among white and Hispanic workers than among black workers for all education groups from 2000 to 2018.
- Among black workers, only college- and advanced-degree holders had higher wages than in 2000, but their wage growth was considerably slower than wage growth for white or Hispanic workers with those same degrees.
- From 2017 to 2018, wage growth was strongest for those with an advanced degree in

all racial/ethnic groups, while wages fell most for black workers with less than a high school diploma.

- Black–white wage gaps by education were larger in 2018 than in 2000 for all education groups, while Hispanic–white wage gaps were narrower for workers with less than high school or high school diploma levels of education. At nearly every education level, workers of color were paid consistently less than their white counterparts.

Methodological considerations

This section describes our methodology for addressing data limitations due to top-coding, as well as other considerations to keep in mind when using CPS data and EPI’s wage series reports to understand wage trends.

Top-coding of weekly earnings

Top-coding of weekly earnings is catching an increasing number and share of workers as inequality continues to climb, making it increasingly difficult to obtain reliable measures of 95th-percentile wages, particularly for male workers and white workers.

For this report, when workers directly report an hourly wage, this wage is used. For workers who do not directly report an hourly wage, hourly wages are calculated by dividing reported weekly earnings by their usual hours worked in a week. The CPS weekly earnings series is top-coded to protect the anonymity of high-wage respondents. In practice, this means that if a respondent reports weekly earnings above a certain value—\$2884.61 in 2018—his or her weekly earnings are simply recorded as being that value (i.e., \$2884.61). The top-code value has remained at \$2884.61 since 1998, even as high-end wages have continued to rise. This weekly wage level translates into \$150,000 annually for full-year workers.

Because actual wages are masked for these high earners, it has become harder to uncover the extent of top-end wage levels and growth. Other data, such as data from the Social Security Administration, illustrates that wage growth is far more concentrated at the top than can be seen using the CPS, with growth at and within the top 1 percent exhibiting growth that is orders of magnitude faster than at the 95th percentile (see **Appendix Figure A** for these trends).

Historically, the Bureau of Labor Statistics (BLS) has periodically made adjustments to the weekly earnings top-code when it has begun to reach increasingly larger shares of workers. Unfortunately, BLS has chosen to set the top-code at nominal values without adjusting for inflation. Between 1973 and 1988, the top-code sat at \$999; from 1989 to 1998, it sat at \$1,923; and, since 1998, it has remained at \$2,884.61. Best practices for consistent and accurate data use suggest not only increasing the top-code but also

indexing it over time to keep it from hitting an increasing share of the workforce. Since the top-code was set in 1998 and has not risen since then, even to adjust for inflation, it is catching an increasing number and share of workers as wage growth at the top continues to climb. In the overall wage distribution, over the period analyzed in this report, the share of workers reporting weekly earnings at or above the top-code rose from 0.8 percent in 2000 to 4.2 percent in 2018. The share of men and white workers hitting the top-code is much higher than for workers overall. In 2018, the share of white workers with weekly earnings hitting the top-code was 5.2 percent. For working men, that share was 5.9 percent in 2018.

For weekly earnings above the top-code, EPI assigns those top-coded workers the imputed mean above the top-code assuming the earnings distribution is Pareto above the 80th percentile. However, because the highest-percentile wage we examine is the 95th percentile, as long as the top-code generally affected only the top 2–3 percent of workers, we could have confidence that our 95th-percentile estimate was largely unaffected by how binding the top-code was. Now that the top-code hits over 5 percent of the wage distribution of men and white workers, however, our 95th-percentile wage estimate has essentially become the weekly earnings top-code divided by a measure of usual hours. This makes our measure of 95th-percentile wages for working men and white workers unreliable.

As mentioned previously, the top-code is particularly binding when examining the 95th-percentile wage for both white and male workers. Because of this, we have used the 94th percentile as a proxy in those cases, so that values below the weekly top-code imputation are driving measured wage levels and wage growth, not the imputation itself. Given these limitations, some caution should be exercised when examining recent wage levels and trends for these workers.

Year-to-year volatility in the CPS

Because the CPS exhibits a fair amount of year-to-year volatility, one-year changes in wages by decile in the CPS—while providing new and valuable information—should be taken with a grain of salt; longer-term trends should be given more weight.

Every month, policymakers, analysts, and journalists look to the monthly jobs report to assess the health of the labor market. Along with payroll employment growth and the unemployment rate, nominal wage growth is a key indicator of the tightness of the labor market, a measure of workers' ability to secure pay increases from their employers. As workers become scarcer, employers have to pay more to attract and retain the workers they want. So making an accurate assessment of the state of wage growth is essential to a complete understanding of labor market dynamics and to determining how close the U.S. economy may indeed be to full employment.

The Bureau of Labor Statistics releases two surveys every month as part of their Employment Situation report: the Current Population Survey (CPS) and the Current

Employment Statistics survey (CES). The CPS collects employment and demographic information from households, while the CES collects information from employers' payroll records.¹ Gould (2018) compares recent trends in both of these series. In sum, given the larger sample size and the benchmarking of CES employment to unemployment insurance tax records, it has been well established that the CES is the better survey for assessing overall employment growth (Gould 2003).

Both series are consistent in how to interpret overall growth in wages. The growth rate in nominal private-sector earnings in the CES from 2017 to 2018 was 3.0 percent. The nominal growth in the typical CPS wage—that is, at the median—was 4.1 percent. In Gould (2018), I demonstrate that calculating growth rates from the CPS in three-year averages corresponds rather well to CES annual average growth rates. The average growth rate of the median wage in the CPS over the last three years was 3.4 percent. Therefore, it is important to not read too much into the somewhat stronger wage growth exhibited over one year in the CPS. Given the Federal Reserve's 2 percent inflation target, and given 1.5 percent long-run trend productivity growth, wages should be growing by at least 3.5 percent annually *and* for a sustained period of time for workers to reap the benefits of economic growth (EPI 2019c). While the growth seen in the average and median wage for U.S. workers over the past year is welcome and expected given the steadily improving labor market, recent trends indicate that the economy has a ways to go before reaching full employment. The recent pickup in the last quarter of 2018 in the CES is particularly promising; however, trends in both surveys indicate that workers are still trying to make up for ground lost during the Great Recession and its aftermath. Given that workers have limited leverage to bid up their wages, some slack remains in the labor market.

The CPS remains the best series for measuring wages and wage growth by demographic characteristics as well as across the wage distribution. Given the limitations of the CPS, however, I suggest taking swings in year-to-year differences with a large grain of salt and paying more attention to longer-term trends. Even so, I do report cross-cutting differences from the CPS for the most recent year; a look at the most current available data remains valuable to understanding how today's economy is serving U.S. workers across the labor market.

Changes in EPI's worker sample

Caution should be exercised when making comparisons with prior-year versions of this report, as the data sample has changed.

For many years, the Economic Policy Institute has reported wage growth using the CPS. For multiple sets of analyses, such as *The State of Working America* (Mishel et al. 2012) and previous versions of the *State of Working America Data Library* (EPI 2019d), most wage analysis was limited to workers who are 18 to 64 years old. To be both consistent with other Bureau of Labor Statistics analyses and reflective of a growing number of workers age 65 and older in the labor market, the analysis in this study reports hourly wages for all workers 16 years of age and older. Because of this change in the data sample, caution should be used in making comparisons with prior-year versions of this

report. **Appendix Figure B** provides the historical growth rates using the “new” series for select percentiles back to 1979.

Wage inequality across the wage distribution

Wage growth from 2000 to 2018 continues long-run trends in rising inequality.

Since 1979, “real” (inflation-adjusted) hourly pay for the vast majority of American workers has diverged from economywide productivity, and this divergence is at the root of numerous American economic challenges. After tracking rather closely in the three decades following World War II, growing productivity and typical worker compensation diverged (shown in **Appendix Figure C**).² From 1979 to 2017, productivity grew 70.3 percent, while hourly compensation of production and nonsupervisory workers grew just 11.1 percent. Productivity thus grew six times faster than typical worker compensation.

A natural question that arises from this story is just where did the “excess” productivity go? A significant portion of it went to higher corporate profits and increased income accruing to capital and business owners (Bivens et al. 2014). But much of it went to those at the very top of the wage distribution, as shown in Appendix Figure A. The top 1 percent of earners saw cumulative gains in annual wages of 157.3 percent between 1979 and 2017—far in excess of economywide productivity growth and nearly four times faster than average wage growth (40.1 percent). Over the same period, top 0.1 percent earnings grew 343.2 percent, with the latest spike reflecting the sharp increase in executive compensation (Mishel and Wolfe 2018).

While the CPS-ORG—the primary data set used in this report—does not allow disaggregation within the top 5 percent of the earnings distribution, it is still instructive for measuring the growth in wage inequality over the last 40-odd years. Appendix Figure B illustrates that for all but the highest earners, hourly wage growth has been weak. If it hadn’t been for a period of strong across-the-board wage growth in the late 1990s, wages for most would have fallen outright. Median hourly wages rose 14.0 percent between 1979 and 2018, compared with an increase of 4.1 percent for the 10th-percentile worker (i.e., the worker who earns more than only 10 percent of workers). Over the same period, the 95th-percentile worker saw growth of 56.1 percent.

Wage growth since the Great Recession has continued to follow this trend: slower growth for most compared with faster growth for those at the top. **Table 1** shows hourly wages by wage decile (and at the 95th percentile) and includes data from 2000 (the previous business cycle peak), 2007 (the most recent business cycle peak), and the two most recent years of data (2017 and 2018). For a full discussion of EPI’s use of the CPS-ORG data, see EPI’s methodology for measuring wages and benefits (EPI 2019a). In the full business cycle from 2000 to 2007, growth was relatively slow overall and relatively

unequal; the gains at the 90th and 95th percentiles were higher than at the middle or bottom of the wage distribution. After growing at practically the same rate from 2000 to 2007, wages for the bottom grew about twice as fast as wages for the middle from 2007 to 2018, slightly narrowing the ratio of wages at the 50th and 10th percentiles of the wage distribution (i.e., the 50/10 wage gap, or the gap between the middle and the bottom). However, because of the large and disproportionate gains at the top, both the 95/50 gap (the gap between top and the middle) and the 95/10 gap (the gap between the top and the bottom) grew substantially from 2007 to 2018.

With the caveat that, as discussed above, we need to be careful to not assign too much meaning to one-year changes given concerns about data volatility, we note the following trends over the past year: The one-year change in the median wage from 2017 to 2018 was 1.6 percent, compared with 2.7 percent at the 95th percentile and 0.5 percent at the 10th percentile. The strongest growth in the overall wage distribution occurred at the 20th and 30th percentiles, at 4.8 percent and 3.7 percent, respectively.

Figure A illustrates the trends in wages for select deciles (and the 95th percentile), showing the cumulative percent change in real hourly wages from 2000 to 2017. The overall story of inequality is clear. The lines demonstrate that those with the highest wages have had the fastest wage growth in recent years. From 2000 to 2018, the 95th-percentile wage grew over three times faster than wages at the median. By 2018, the 95/10 ratio had grown to 6.3 from 6.0 in 2007 and 5.6 in 2000 (see Table 1). This means that on an hourly basis the 95th-percentile wage earner was paid 6.3 times what the 10th-percentile wage earner was paid. Similar trends are found in the 95/50 wage ratio, with those at the top pulling away from those at the middle. In 2018, the 95th-percentile wage earner was paid 3.4 times more than the median worker compared with 3.0 times more in 2007 and 2.9 times more in 2000.

Wages by gender

The gender wage gap continues to shrink, but remains significant; wage inequality is higher and growing more among men than among women.

Analyzing wages at different points in the wage distribution over time can mask different outcomes for men compared with women. **Table 2** replicates the analysis of wage deciles for men and women separately, with a comparison of gender wage disparities over 2000–2018. **Figures B** and **C** accompany this table, illustrating the cumulative percent change over 2000–2018 in real hourly wages of men and women at select wage percentiles.

It is important to keep in mind that the top-coding issue in the CPS disproportionately impacts analysis of men’s wages more than analysis of women’s wages because men’s wages are higher and their high-end wage growth grew much faster over the last 20 years. Because more than 5 percent of men’s weekly earnings were top-coded in the CPS

in 2016, 2017, and 2018, the 95th percentile is estimated using the growth rate of the 94th percentile for each of those years to the 95th percentile in 2015. If the 95th percentile had been reported using EPI's top-coding procedure, the growth rate between 2017 and 2018 would have been a whopping 19.7 percent.

Even using the potentially slightly slower growth rate in recent years at the 94th percentile as a proxy, long-term trends suggest that low- and middle-wage men have fared comparatively poorly and that wage gaps between the top and the middle (the 95/50 ratio) and the top and the bottom (the 95/10 ratio) have increased more for men than for women. Men's wages at the 95th percentile grew 42.0 percent from 2000 to 2018, more than twice as fast as at the 90th percentile (17.1 percent), while at the median, men's wages barely budged, rising only 0.8 percent over the entire 18-year period. Wage growth for lower-wage working men (at the 10th and 20th percentiles) was considerably stronger than for those at or near the middle of the wage distribution.

From 2017 to 2018, men saw their wages fall at the middle and bottom of the wage distribution: a 1.5 percent drop at the 50th percentile and a 1.4 percent drop at 60th percentile, along with a 0.7 percent decline at the 10th percentile. Table 2 shows that the 95th-percentile men's wage grew 9.9 percent, continuing to pull away from wages across the rest of the men's wage distribution.

Women also experienced a growth in wage inequality from 2000 to 2018, with the 95th percentile continuing to pull away from the middle and bottom of the wage distribution. Wages at the 90th and 95th percentiles grew about twice as fast as for middle- and low-wage earners over the 18-year period. However, wage inequality among women in 2018 was not as high as it was among men: A 95th-percentile woman was paid 5.6 times more than a 10th-percentile woman, while the 95/10 ratio among men was 7.9. While inequality has grown modestly among women, the growth in women's wages is more broadly shared across the wage distribution than men's, with stronger growth among the bottom 30 percent than among the top 20 percent from 2017 to 2018. In addition, women at all deciles registered higher wages in 2018 than in 2007 or 2000.

The "gender wage gap" refers to historically persistent differences between what men and women are paid in the workplace. While significant gender wage gaps remain across the wage distribution, the gender wage gap at the median continued to shrink, with the typical woman earning 84 cents for every dollar a man earned in 2018 (that is, they faced a 16 percent wage gap). Unfortunately, the slight narrowing of the gender wage gap at the median between 2017 and 2018 was due to losses in the median man's wage rather than any increase in the median woman's wage. If we can stem the tide of rising inequality and claw back the disproportionate gains going to those at the top of the overall wage distribution, it would be economically feasible to see both men's and women's wages rise while simultaneously closing the gender wage gap (EPI 2018a). The gender wage gap at the bottom of the wage distribution continued to narrow between 2017 and 2018, with the gap at the 10th percentile falling from 8.9 percent to 5.9 percent. Not surprisingly, as the 95th-percentile wage for men rose sharply between 2017 and 2018, the gender wage gap at the top grew significantly, with higher-earning women facing a 33.6 percent pay penalty.

The regression-adjusted average gender wage gap (controlling for education, age, race, and region) showed a small narrowing between 2000 and 2018, from 23.9 percent to 22.6 percent, while much greater progress was made between 1979 and 2018; the regression-adjusted gender wage gap was 37.7 percent in 1979.³

Wage growth and the minimum wage

Wage growth at the bottom was faster in states that increased their minimum wage in 2018.

In 2018, the minimum wage was increased in 13 states and the District of Columbia through legislation or referendum, and in eight states because the minimum wage is indexed to inflation in those states. Most of these increases occurred at the start of the year, though some occurred later in the year. **Figure D** shows in green the states with minimum wage increases that occurred through legislation or referendum in 2018; states in blue had automatic increases resulting from indexing the minimum wage to inflation. Workers in states that increased their minimum wage in 2018 account for about 50 percent of the U.S. workforce. Comparing the average minimum wage in 2017 with the average in 2018, the amounts of the nominal minimum wage increases, legislated or indexed, ranged from \$0.04 (or 0.4 percent) in Alaska to \$1.00 (or 11.1 percent) in Maine.

When we compare 10th-percentile wage growth among states that are grouped by whether they had a minimum wage increase or not, the comparison yields highly suggestive results. As shown in **Figure E**, when looking at 10th-percentile wages, growth in states without minimum wage increases was slower (1.6 percent) than in states with any kind of minimum wage increase (2.1 percent). This result holds true for both men and women at the 10th percentile. The 10th-percentile men's wage grew 1.8 percent in states with minimum wage increases, compared with 0.3 percent growth in states without any minimum wage increases, while women's 10th-percentile wage grew 1.7 percent in states with minimum wage increases and 1.0 percent in states without.

It is not surprising that these differences are smaller than what has been seen in earlier years because as the economy gets closer to full employment, we would expect the 10th-percentile wage to increase across all states regardless of changes in the minimum wage (Gould 2017). Furthermore, 2018 changes in state minimum wages came on the heels of other recent changes to minimum wages in many of the same states over the previous couple of years. In fact, when we compare states that have had any minimum wage change since 2013 with states that did not have a minimum wage change during that time, the pattern—as shown in **Figure F**—is even more pronounced. Wage growth at the 10th percentile in states with at least one minimum wage increase from 2013 to 2018 was more than 50 percent faster than in states without any minimum wage increases (13.0 percent vs. 8.4 percent). As expected, given women's lower wages in general, this result is even stronger for women (13.0 percent vs. 6.0 percent), though men also experienced much faster 10th-percentile wage growth in states with minimum wage increases than in those without (12.0 percent vs. 8.6 percent).

Wages by race/ethnicity

From 2000 to 2018, within-group wage inequality grew for white, black, and Hispanic workers.

Table 3 examines wage deciles (and the 95th-percentile wage) for white non-Hispanic, black non-Hispanic, and Hispanic workers from 2000 to 2018. From 2000 to 2018, the strongest growth among white, black, and Hispanic workers occurred at the top of the wage distribution, a sign that wage inequality is growing *within* each of these racial/ethnic groups as well as among workers overall. At every decile, wage growth since 2000 has been faster for white and Hispanic workers than for black workers. After suffering declines in the aftermath of the Great Recession, the 60th and 70th percentiles of the black wage distribution remain below their 2000 levels. In fact, over the last 18 years, wage growth for white and Hispanic workers has been about four times faster than wage growth for black workers in the 20th through the 70th percentiles of their respective wage distributions. This growing differential is largely attributable to the fact that there has been little to no wage growth for black workers; it does not reflect some tremendous growth for white and Hispanic workers.

From 2017 to 2018, the strongest wage growth among white workers was at the 95th percentile. Because 5.2 percent of white workers had weekly earnings at or above the top-code, the growth rate for the 95th percentile is imputed using the 94th-percentile growth from 2017 to 2018. Unlike for men, the difference here is imperceptible when rounding—6.7 percent growth using the 95th percentile as estimated with the Pareto distribution and also as estimated using growth from the 94th percentile, which was not directly affected by the top-code procedure. Either way, wage growth for white workers was much faster over the last year among high-wage workers than among middle- or low-wage workers. It's important to not read too much into one-year comparisons given data volatility, but wages for white workers at the bottom (the 10th percentile) of the wage distribution actually fell from 2017 to 2018. Since 2000, however, wages grew by at least 7.3 percent for white workers at all wages deciles, including 8.6 percent at the median.

Over the entire period from 2000 to 2018, Hispanic workers experienced more broadly based wage growth, with wages increasing across their wage distribution: There was strong growth at the top (21.5 percent) as well as at the median (13.9 percent) and the bottom (16.1 percent). Over the last year (2017 to 2018), however, Hispanic workers' wages faltered, with outright declines (or stagnation) in the top half of the wage distribution.

Black workers' wages fell (or stagnated) near the middle of the wage distribution (at the 50th, 60th, and 70th percentiles) between 2017 and 2018, though the losses were not as great or as widespread as for Hispanic workers. (Again, when looking at all of these numbers, we need to keep in mind that the CPS data is subject to a certain amount of volatility from year to year; for data on black wages, that volatility is likely to be even more pronounced because of the smaller data sample represented by the black population.) What is particularly striking about black wages is the slow wage growth since 2000 nearly across the board. At the median, black workers' wages rose only 0.5 percent over the

entire period. The only notable diversions from the near-zero growth rates at most levels were increases for black workers at the 10th percentile (4.2 percent), the 80th percentile (4.9 percent), the 90th percentile (12.7 percent), and the 95th percentile (26.2 percent). But the growth rates at the 10th and 80th percentiles are still extremely slow, representing annualized percent changes of 0.2 and 0.3 percent, respectively. For perspective, over the same 18-year period, the *slowest* wage growth among Hispanic workers between 2000 and 2018 was 13.6 percent (0.7 percent annualized) at the 70th percentile.

The bottom section of Table 3 displays wage gaps by race/ethnicity. Wage gaps by race/ethnicity track how much less African American and Hispanic workers are paid relative to white workers; here, black and Hispanic wages are shown as a share of white wages at each decile of their respective wage distributions. Compared with white workers, black workers have been losing ground since 2000, with larger black–white wage gaps across the entire distribution. In 2000, black wages at the median were 79.2 percent of white wages. By 2018, they were only 73.3 percent of white wages, representing an increase in the wage gap from 20.8 percent to 26.7 percent. Conversely, Hispanic workers have been slowly closing the gap with white workers at the bottom 80 percent of the wage distribution. In 2000, median Hispanic wages were 69.7 percent of white wages and, by 2018, they were 73.1 percent, representing a narrowing of the gap from 30.3 percent to 26.9 percent. The 95th-percentile Hispanic–white wage gap still remains significantly wider than its 2000 level.

The regression-adjusted black–white wage gap (controlling for education, age, race, and region) has become larger over the last year (EPI 2019d). While the Hispanic–white wage gap has remained fairly constant over the last 18 years (12.3 percent in 2000 compared with 11.8 percent in 2018), the black–white gap was significantly larger in 2018 (16.2 percent) than it was in 2000 (10.2 percent). In 2000, the Hispanic–white wage gap was larger than the black–white wage gap. In 2018, the reverse was true. Further, between 2000 and 2018 the regression-adjusted black–white wage gap widened significantly for both men (+5.8 percentage points) and women (+5.9 percentage points), while the Hispanic–white wage gap narrowed for men (–1.8 percentage points) and grew for women (+1.6 percentage points).

Wages by education level

Wage growth has generally been faster among the more educated, particularly among men, since 2000.

Table 4 presents the most recent data on average hourly wages by education for all workers and by gender, and **Figure G** displays the cumulative percent change in real average hourly wages by education. (The discussion throughout identifies each group as mutually exclusive such that those identified as having a college degree have no more than a bachelor’s degree. Those identified as having “some college” may have an associate degree or have completed part of a two- or four-year college degree.)

From 2000 to 2018, the strongest wage growth occurred among those with advanced degrees (11.0 percent), those with college degrees (6.7 percent), and those with less than a high school diploma (8.7 percent). Given that those with less than a high school diploma are often the lowest-wage workers in general, it is likely that some of these gains can be attributed to state-level increases in the minimum wage. These workers represent a small and shrinking share of the overall workforce, only about 8 percent of workers in 2018 (EPI 2019d). The average wage for workers with some college has finally returned to its 2000 level, but still remains just below its 2007 level.

Over the last year, average wages of those with some college and those with advanced degrees rose the fastest, a reversal from 2016 to 2017, when wages fell among these workers (EPI 2019d). Between 2017 and 2018, wages of those with a high school diploma rose faster than wages of those with a college degree, continuing to narrow the gap between college and high school wages since 2016. As a result, the college wage premium—the regression-adjusted log-wage difference between the wages of college-educated and high school-educated workers—fell slightly from 50.6 percent to 48.4 percent between 2016 and 2018.

However, wage growth among those with college degree rose faster over the entire period from 2000 to 2018 than among those with a high school diploma (6.7 percent vs. 3.4 percent). Because of the disproportionate gains for those with more credentials, the regression-adjusted college wage premium grew from 47.0 percent to 48.4 percent from 2000 to 2018.

A prevalent story explains wage inequality as a simple consequence of growing employer demand for skills and education—often thought to be driven by advances in technology. According to this explanation, because there is a shortage of skilled or college-educated workers, the wage gap between workers with and without college degrees is widening. However, despite its great popularity and intuitive appeal, this story about recent wage trends being driven more and more by a race between education and technology does not fit the facts well, especially since the mid-1990s (Mishel, Shierholz, and Schmitt 2013). When we compare the relative changes in the 95/50 wage gap and the college premium from 2000 to 2018, it is clear that gains in the college wage premium have not been large enough to drive the continued steady growth of the 95/50 wage gap (see Gould 2018 for additional analysis on these differences since 1979).

The more salient story is not one of a growing differential of wages between college and high school graduates, but increasingly one of growing wage inequality overall and within various education groups. Among college graduates, there has been a significant pulling away at the very top of the wage distribution. The bottom 60 percent of those with a college degree still have lower wages than they did in 2000 or 2007. The 50th-percentile wage among those with bachelor's degrees was 2.4 percent *lower* in 2018 than it was in 2000, while the 90th-percentile wage of those with bachelor's degrees was 9.8 percent higher. (The 95th wage percentile for college graduates is fraught with the same top-coding issue as for white and male workers—but to an even greater extent—making those comparisons less reliable.)

Figures H and I display the cumulative percent change in real hourly wages by education for men and women, respectively. Since 2000, wage growth for those with a college or advanced degree was faster for men than for women, while wage growth for those with a high school diploma or some college was faster for women than for men. In general, the women’s wage distribution by educational attainment is more compressed; that is, the wage differences between workers of different levels of education are not quite as large for women as they are for men.

For both men and women, the largest gains since 2000 were among those with a college or advanced degree as well as those with less than a high school diploma. Wages of men with some college remained lower than their 2000 levels. Among women, all groups have exceeded their 2000 wage levels.

While there has been a slow narrowing of gender wage gaps for those with a high school diploma and those with some college since 2000, gender wage gaps are wider among those with less than high school and among those with college or advanced degrees. As **Figure J** illustrates, women are paid consistently less than their male counterparts at every education level.

Educational attainment has grown faster for women than men between 2000 and 2018, and now women are more likely than men to have a college or advanced degree (EPI 2019d). Unfortunately, increasing educational attainment has not insulated women from large gender wage gaps: The average wage for a man with a college degree was higher in 2018 than the average wage for a woman with an advanced degree (by 4.1 percent).

From 2000 to 2018, wage growth for white and black workers tended to be faster for those with more education than for those with less (**Table 5**). Average wages grew faster among white and Hispanic workers than among black workers for all education groups (which is not surprising given that the same was true at all deciles of the wage distribution). Black workers with less than a college degree had lower wages in 2018 than in 2000. Consistent with our findings on the relationship between education and earnings for all workers (see Table 4), wage growth was strongest for those with an advanced degree for all groups over the last year, while wages fell for black workers with less than a high school diploma.

Black–white wage gaps by education were larger in 2018 than in 2000 for all education groups, while Hispanic–white wage gaps were narrower for workers with less than high school and for workers with high school diplomas. At nearly every education level, black and Hispanic workers were consistently paid less than their white counterparts in 2018, while Hispanic workers were consistently paid more than black workers (**Figure K**).

Conclusion

From 2017 to 2018, real hourly wages increased for many workers across the wage distribution, though not for all genders and races or ethnicities nor for workers at all levels of educational attainment. In general, the years since 2000 have been associated with a continued pulling apart of the wage distribution, with disproportionate gains at the top. Wages for those with additional schooling remain higher than wages for workers with less education, though modest increases in the college wage premium cannot explain the more extreme pulling away of the top earners. One trend pushing back on growing wage inequality between the top and bottom of the wage distribution is stronger growth at the 10th percentile over the last five years, particularly in states that have increased their minimum wage.

Rising wages over the last few years have happened during a period of falling unemployment, with unemployment rates dropping near to (or even below) pre–Great Recession lows. This is no coincidence. If the unemployment rate is allowed to continue to fall, eventually low unemployment should boost low- and middle-wage workers’ leverage enough to see steady and large wage gains. However, there is no sign that we’ve reached the limits of how much we can sustainably boost wage growth with lower unemployment—wage growth remains weaker than we should expect in a fully healthy economy. This means that confident proclamations that we’ve achieved full employment should not be made and that the Federal Reserve should hold off on any further interest rate increases and allow the economy to continue to grow.

Full employment is one way that workers gain enough bargaining power to increase their wages; employers have to pay more to attract and retain the workers they need when idle workers are scarce. The “lever” for higher wages that comes from full employment is most important for workers at the bottom of the wage distribution: For a given fall in the unemployment rate, wage growth rises more for low-wage workers, and in the absence of stronger labor standards, it is often only in the tightest of labor markets that low-wage workers see stronger wage growth (Bivens and Zipperer 2018).

Beyond seeking to keep labor markets tight, policymakers could take other steps to foster strong broad-based wage growth, such as raising the federal minimum wage, expanding eligibility for overtime pay, addressing gender and racial pay disparities, and protecting and strengthening workers’ rights to bargain collectively for higher wages and benefits. For more policies that will raise wages, see EPI’s *Policy Agenda* (EPI 2018b).

About the author

Elise Gould, senior economist, joined EPI in 2003. Her research areas include wages, poverty, economic mobility, and health care. She is a co-author of *The State of Working America, 12th Edition*. In the past, she has authored a chapter on health in *The State of Working America 2008/09*; co-authored a book on health insurance coverage in retirement; published in venues such as *The Chronicle of Higher Education*, *Challenge Magazine*, and *Tax Notes*; and written for academic journals including *Health Economics*, *Health Affairs*, *Journal of Aging and Social Policy*, *Risk Management & Insurance Review*, *Environmental Health Perspectives*, and *International Journal of Health Services*. She holds a master's degree in public affairs from the University of Texas at Austin and a Ph.D. in economics from the University of Wisconsin at Madison.

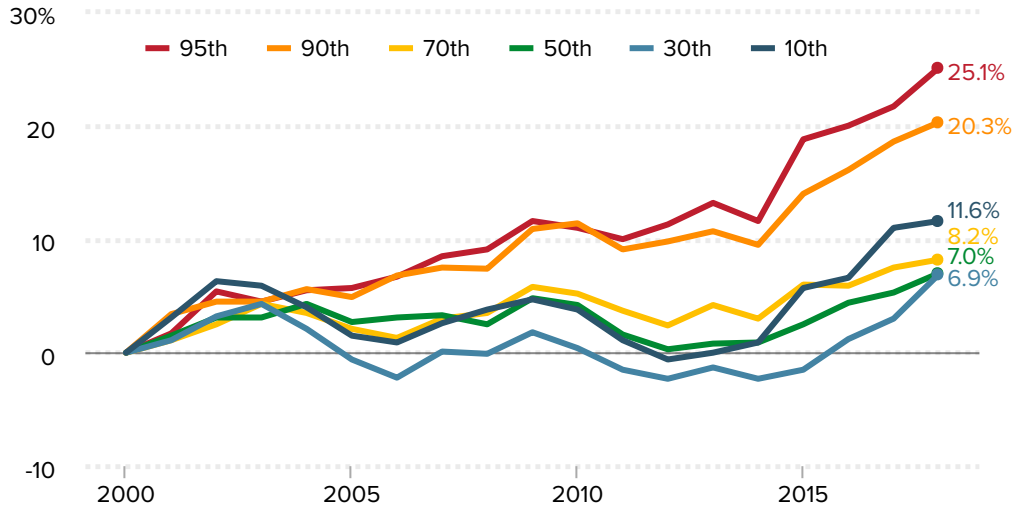
Acknowledgments

The author thanks Melat Kassa, Zane Mokhiber, and Julia Wolfe for their meticulous programming and research assistance, and Josh Bivens, John Schmitt, Heidi Shierholz, and Ben Zipperer for their valuable and relentless contributions on methodological issues.

Figure A

High-wage earners have continued to pull away from everyone else since 2000

Cumulative percent change in real hourly wages, by wage percentile, 2000–2018



Note: Sample based on all workers ages 16 and older.

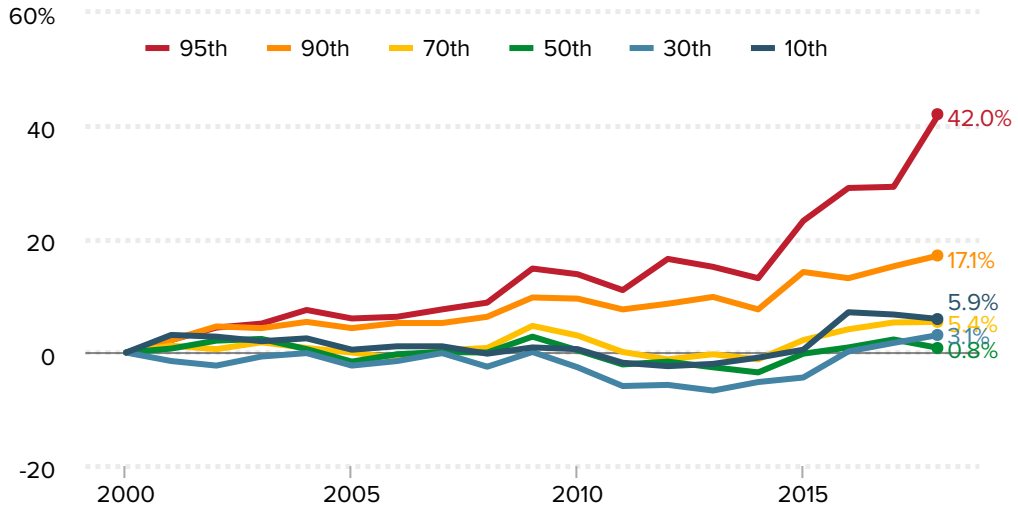
Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Figure B

Disproportionate wage growth since 2000 for those at the top has contributed to widening inequality among men

Cumulative percent change in real hourly wages of men, by wage percentile, 2000–2018



Notes: Sample based on all workers ages 16 and older.

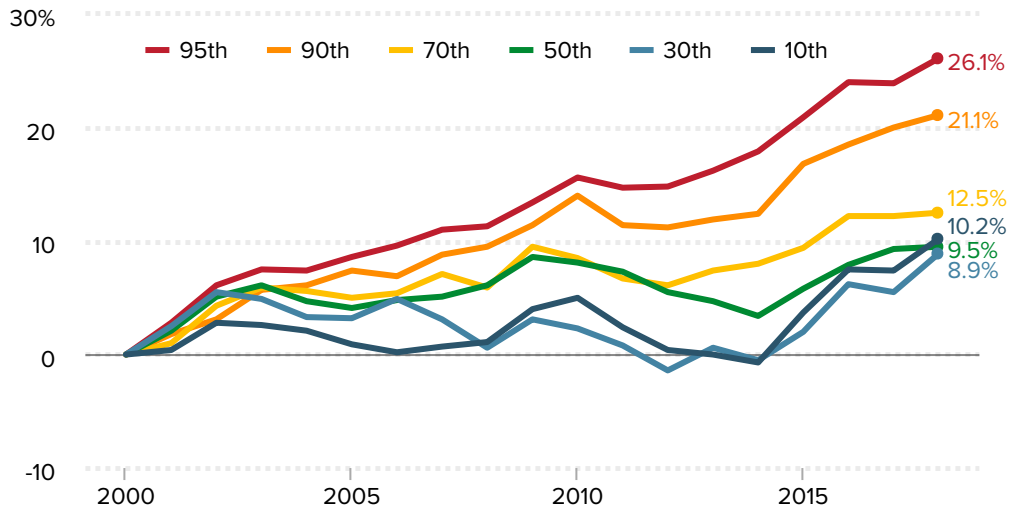
Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Figure C

Women's wages are more compressed than men's wages, but inequality among women has increased since 2000

Cumulative percent change in real hourly wages, by wage percentile, 2000–2018



Notes: Sample based on all workers ages 16 and older. The xth-percentile wage is the wage at which x% of wage earners earn less and (100-x)% earn more.

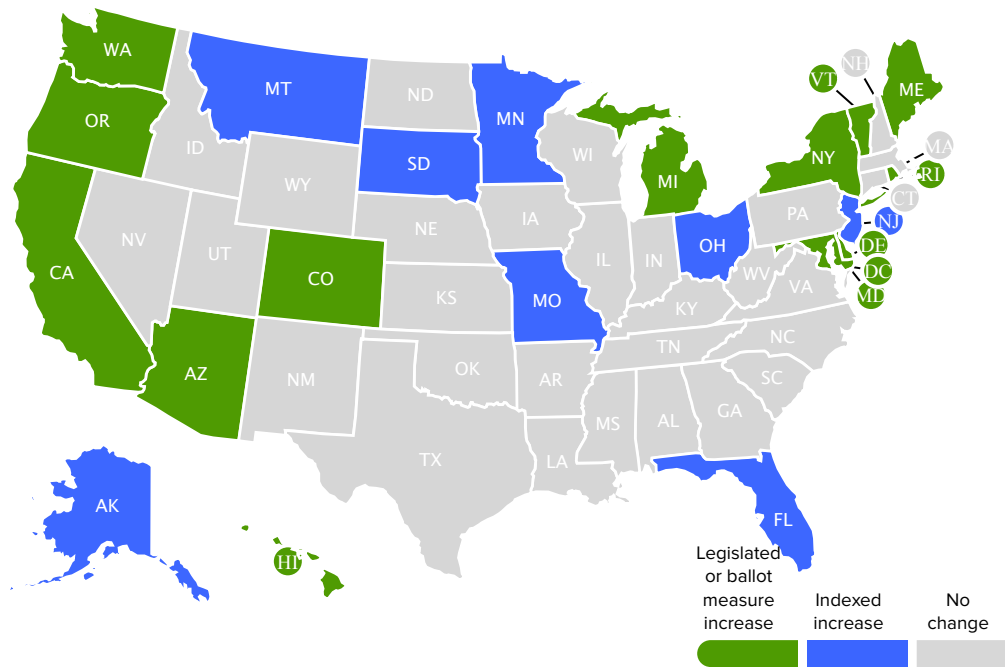
Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Figure D

The minimum wage increased in 21 states and the District of Columbia in 2018

States with minimum wage increases in 2018, by type of increase



Notes: Minimum wage increases passed through either legislation or ballot measure took effect on January 1, 2018, in Arizona, California, Colorado, Hawaii, Maine, Michigan, New York, Vermont, Rhode Island, and Washington. Alaska, Florida, Minnesota, Missouri, Montana, New Jersey, Ohio, and South Dakota increased their minimum wages in 2018 because of indexing to inflation. Maryland, Oregon, and Washington, D.C., legislated minimum wage increases that took effect on July 1, 2018. Delaware legislated a minimum wage increase that took effect on October 1, 2018.

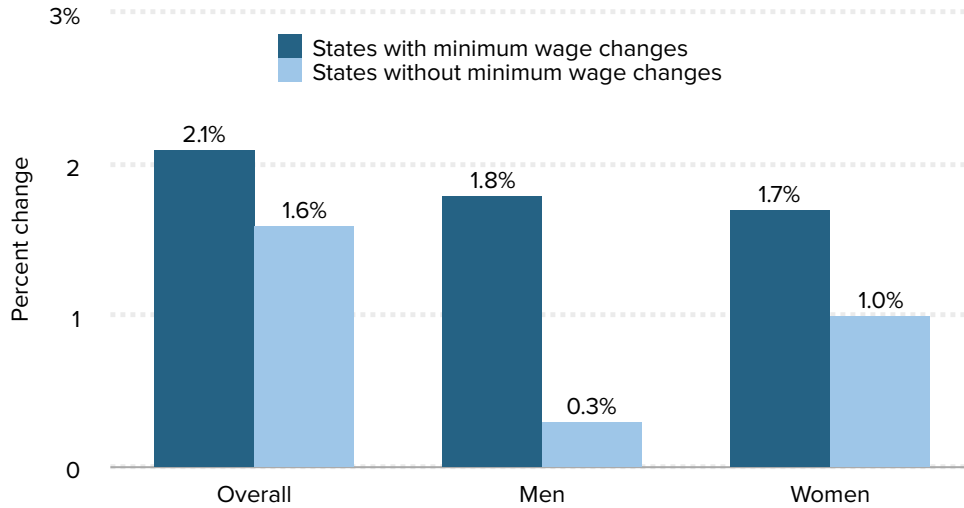
Source: EPI analysis of state minimum wage laws. See EPI's [minimum wage tracker](#) (EPI 2019b) for the most current state-level minimum wage information.

Economic Policy Institute

Figure E

Wage growth at the bottom was strongest in states with minimum wage increases in 2018

10th-percentile wage growth, by presence of 2018 state minimum wage increase and by gender, 2017–2018



Notes: Arizona, California, Colorado, Hawaii, Maine, Michigan, New York, Vermont, Rhode Island, and Washington legislated minimum wage increases that took effect on January 1, 2018. Alaska, Florida, Minnesota, Missouri, Montana, New Jersey, Ohio, and South Dakota increased their minimum wages in 2018 because of indexing to inflation. Maryland, Oregon, and the District of Columbia legislated minimum wage increases that took effect on July 1, 2018. Delaware legislated minimum wage increases that took effect on October 1, 2018. Sample based on all workers ages 16 and older.

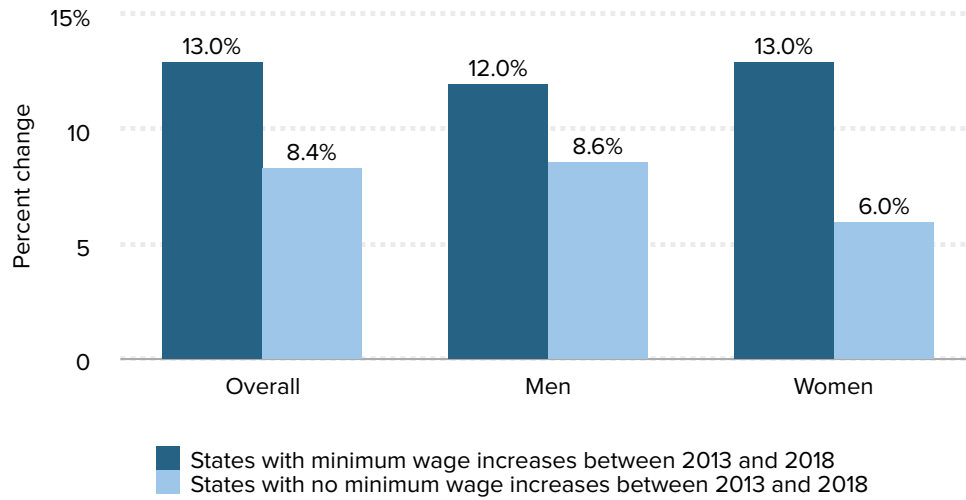
Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Figure F

Wage growth at the bottom was strongest in states with minimum wage increases between 2013 and 2018

10th-percentile wage growth from 2013 to 2018, by presence of state minimum wage increase between 2013 and 2018 and by gender



Notes: Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, the District of Columbia, Florida, Hawaii, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Jersey, New York, Ohio, Oregon, Rhode Island, South Dakota, Vermont, Washington, and West Virginia increased their minimum wages at some point between 2013 and 2018. Sample based on all workers ages 16 and older.

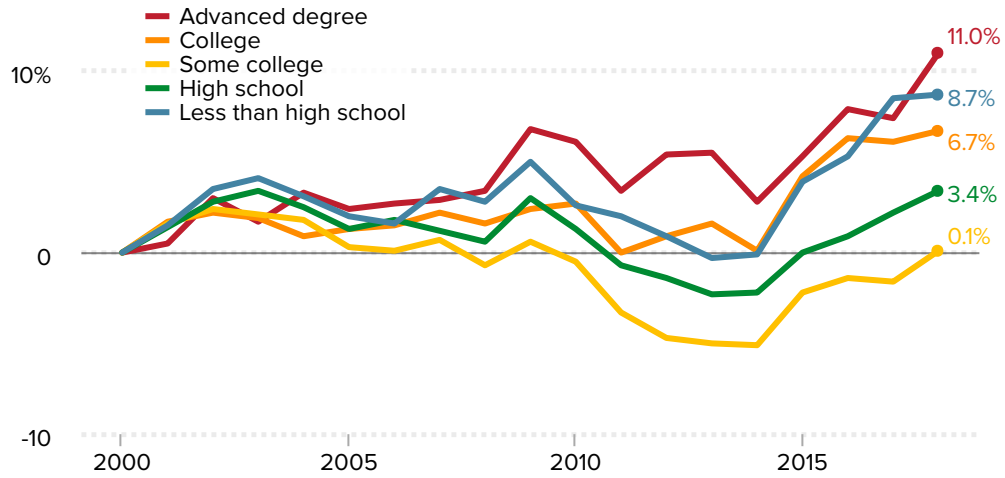
Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Figure G

For workers with some college education, wages have just reached their 2000 level

Cumulative percent change in real average hourly wages, by education, 2000–2018



Note: Sample based on all workers ages 16 and older.

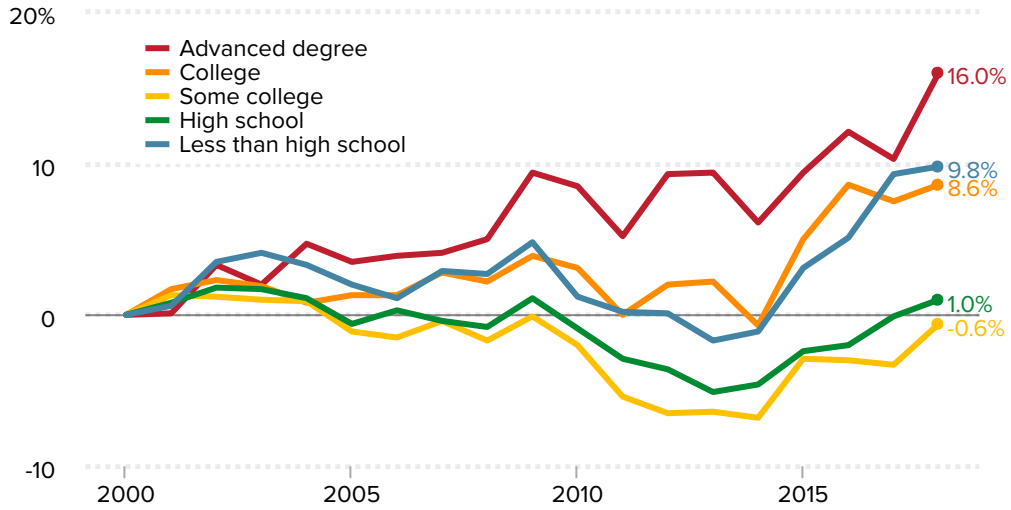
Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Figure H

The average wage for men with some college is still below its 2000 level

Cumulative percent change in real average hourly wages of men, by education, 2000–2018



Note: Sample based on all workers ages 16 and older.

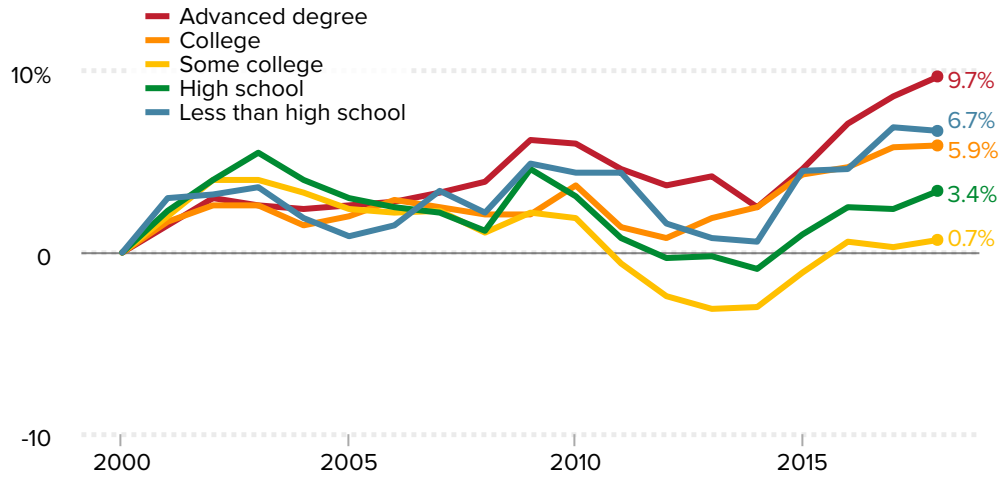
Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Figure 1

Average wages were higher in 2018 than in 2000 for women at all levels of educational attainment

Cumulative percent change in real average hourly wages of women, by education, 2000–2018



Note: Sample based on all workers ages 16 and older.

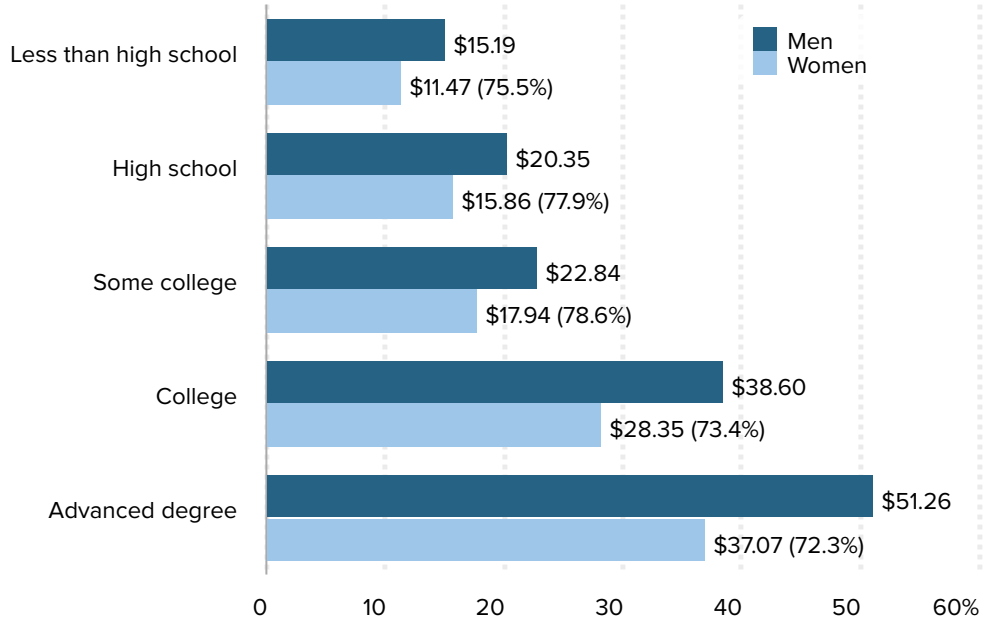
Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Figure J

On average, men are paid more than women at every education level

Average hourly wages by gender and education, 2018



Note: Sample based on all workers ages 16 and older.

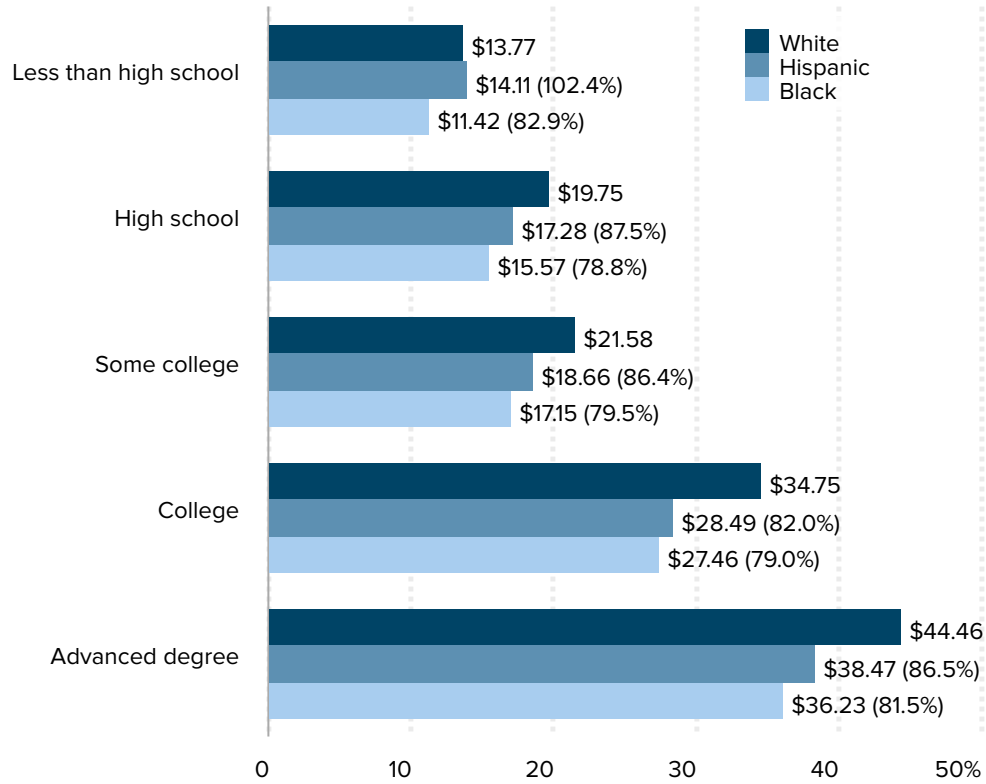
Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Figure K

On average, white workers are paid more than black and Hispanic workers at nearly every education level

Average hourly wages, by race/ethnicity and education, 2018



Note: Sample based on all workers ages 16 and older.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Table 1

Hourly wages of all workers, by wage percentile, 2000–2018 (2018 dollars)

	Wage by percentile										Wage ratio		
	10th	20th	30th	40th	50th	60th	70th	80th	90th	95th	50th/ 10th	95th/ 50th	95th/ 10th
2000	\$8.93	\$10.93	\$13.01	\$14.78	\$17.57	\$20.64	\$24.73	\$29.97	\$39.46	\$50.46	1.97	2.87	5.65
2007	\$9.17	\$11.04	\$13.03	\$15.29	\$18.15	\$21.29	\$25.46	\$31.50	\$42.41	\$54.76	1.98	3.02	5.97
2017	\$9.92	\$11.36	\$13.40	\$15.56	\$18.49	\$22.00	\$26.58	\$33.64	\$46.78	\$61.42	1.87	3.32	6.19
2018	\$9.97	\$11.91	\$13.91	\$15.94	\$18.80	\$22.02	\$26.76	\$33.79	\$47.48	\$63.10	1.89	3.36	6.33
Annualized percent changes											Wage ratio change		
2000–2018	0.6%	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%	0.7%	1.0%	1.2%	-0.1	0.5	0.7
2000–2007	0.4%	0.1%	0.0%	0.5%	0.5%	0.4%	0.4%	0.7%	1.0%	1.2%	0.0	0.1	0.3
2007–2018	0.8%	0.7%	0.6%	0.4%	0.3%	0.3%	0.5%	0.6%	1.0%	1.3%	-0.1	0.3	0.4
2017–2018	0.5%	4.8%	3.7%	2.4%	1.6%	0.1%	0.7%	0.5%	1.5%	2.7%	0.0	0.0	0.1

Notes: Sample based on all workers ages 16 and older. The xth-percentile wage is the wage at which x% of wage earners earn less and (100-x)% earn more.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Table 2

Hourly wages of men and women, by wage percentile, 2000–2018 (2018 dollars)

	Wage by percentile										Wage ratio		
	10th	20th	30th	40th	50th	60th	70th	80th	90th	95th	50th/ 10th	95th/ 50th	95th/ 10th
Men													
2000	\$9.60	\$11.79	\$14.52	\$16.93	\$19.94	\$23.38	\$27.93	\$33.61	\$44.46	\$56.34	2.08	2.83	5.87
2007	\$9.70	\$12.09	\$14.50	\$17.06	\$19.97	\$23.51	\$28.03	\$34.90	\$46.77	\$60.63	2.06	3.04	6.25
2017	\$10.23	\$12.27	\$14.76	\$17.26	\$20.41	\$24.46	\$29.41	\$36.91	\$51.24	\$72.80	1.99	3.57	7.11
2018	\$10.16	\$12.48	\$14.97	\$17.42	\$20.10	\$24.12	\$29.44	\$37.47	\$52.08	\$79.98	1.98	3.98	7.87
Annualized percent changes											Wage ratio change		
2000–2018	0.3%	0.3%	0.2%	0.1%	0.0%	0.2%	0.2%	0.6%	0.9%	2.0%	-0.10	1.15	2.00
2000–2007	0.2%	0.4%	0.0%	0.1%	0.0%	0.1%	0.1%	0.5%	0.7%	1.1%	-0.02	0.21	0.38
2007–2018	0.4%	0.2%	0.3%	0.1%	0.0%	0.2%	0.3%	0.6%	1.0%	2.5%	-0.08	0.94	1.62
2017–2018	-0.7%	1.7%	1.4%	0.9%	-1.5%	-1.4%	0.1%	1.5%	1.7%	9.9%	-0.02	0.41	0.76
Women													
2000	\$8.68	\$10.23	\$11.75	\$13.48	\$15.47	\$17.97	\$21.35	\$26.05	\$34.05	\$42.09	1.78	2.72	4.85
2007	\$8.74	\$10.34	\$12.11	\$14.03	\$16.26	\$18.93	\$22.86	\$27.95	\$37.06	\$46.73	1.86	2.87	5.35
2017	\$9.32	\$10.80	\$12.40	\$14.74	\$16.90	\$19.86	\$23.95	\$29.65	\$40.88	\$52.16	1.81	3.09	5.59
2018	\$9.56	\$11.04	\$12.79	\$14.90	\$16.93	\$19.96	\$24.02	\$30.02	\$41.25	\$53.07	1.77	3.13	5.55
Annualized percent changes											Wage ratio change		
2000–2018	0.5%	0.4%	0.5%	0.6%	0.5%	0.6%	0.7%	0.8%	1.1%	1.3%	-0.01	0.41	0.70
2000–2007	0.1%	0.2%	0.4%	0.6%	0.7%	0.7%	1.0%	1.0%	1.2%	1.5%	0.08	0.15	0.50
2007–2018	0.8%	0.6%	0.5%	0.5%	0.4%	0.5%	0.5%	0.7%	1.0%	1.2%	-0.09	0.26	0.20
2017–2018	2.5%	2.2%	3.2%	1%	0.2%	0.5%	0.3%	1.2%	0.9%	1.8%	-0.04	0.05	-0.04
Wage disparities (women's wages as a share of men's)													
2000	90.4%	86.7%	80.9%	79.6%	77.6%	76.9%	76.4%	77.5%	76.6%	74.7%			
2007	90.0%	85.5%	83.5%	82.3%	81.4%	80.5%	81.6%	80.1%	79.2%	77.1%			
2017	91.1%	88.0%	84.0%	85.4%	82.8%	81.2%	81.4%	80.3%	79.8%	71.6%			
2018	94.1%	88.5%	85.4%	85.5%	84.2%	82.8%	81.6%	80.1%	79.2%	66.4%			

Notes: Sample based on all workers ages 16 and older. The xth-percentile wage is the wage at which x% of wage earners earn less and (100-x)% earn more.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Table 3

Hourly wages by race/ethnicity and wage percentile, 2000–2018 (2018 dollars)

	Wage by percentile									
	10th	20th	30th	40th	50th	60th	70th	80th	90th	95th
White										
2000	\$9.35	\$11.62	\$13.86	\$16.14	\$18.93	\$22.06	\$26.40	\$32.10	\$41.99	\$52.78
2007	\$9.58	\$12.01	\$14.27	\$16.89	\$19.55	\$23.28	\$27.55	\$33.86	\$45.16	\$58.19
2017	\$10.20	\$12.30	\$14.92	\$17.41	\$20.49	\$24.51	\$29.38	\$36.32	\$49.24	\$67.53
2018	\$10.08	\$12.47	\$15.00	\$17.66	\$20.57	\$24.58	\$29.53	\$36.70	\$50.05	\$72.05
Annualized percent changes										
2000–2018	0.4%	0.4%	0.4%	0.5%	0.5%	0.6%	0.6%	0.7%	1.0%	1.7%
2000–2007	0.3%	0.5%	0.4%	0.7%	0.5%	0.8%	0.6%	0.8%	1.0%	1.4%
2007–2018	0.5%	0.3%	0.5%	0.4%	0.5%	0.5%	0.6%	0.7%	0.9%	2.0%
2017–2018	-1.1%	1.4%	0.5%	1.4%	0.4%	0.3%	0.5%	1.1%	1.6%	6.7%
Black										
2000	\$8.78	\$10.28	\$11.75	\$13.33	\$15.00	\$17.50	\$20.49	\$24.70	\$31.38	\$37.99
2007	\$8.74	\$10.38	\$12.05	\$13.45	\$15.19	\$17.66	\$20.63	\$24.64	\$33.43	\$41.74
2017	\$9.12	\$10.27	\$11.68	\$13.26	\$15.31	\$17.41	\$20.48	\$25.60	\$34.61	\$44.53
2018	\$9.15	\$10.44	\$12.00	\$13.66	\$15.08	\$17.41	\$20.43	\$25.92	\$35.38	\$47.96
Annualized percent changes										
2000–2018	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.3%	0.7%	1.3%
2000–2007	-0.1%	0.1%	0.4%	0.1%	0.2%	0.1%	0.1%	0.0%	0.9%	1.4%
2007–2018	0.4%	0.0%	0.0%	0.1%	-0.1%	-0.1%	-0.1%	0.5%	0.5%	1.3%
2017–2018	0.4%	1.6%	2.7%	3.0%	-1.5%	0.0%	-0.2%	1.2%	2.2%	7.7%
Hispanic										
2000	\$8.44	\$9.43	\$10.42	\$11.73	\$13.20	\$14.76	\$17.58	\$21.46	\$28.31	\$36.41
2007	\$8.64	\$9.73	\$10.95	\$12.19	\$14.06	\$15.91	\$18.42	\$23.16	\$30.46	\$39.99
2017	\$9.37	\$10.37	\$11.77	\$13.20	\$15.27	\$17.12	\$20.21	\$24.62	\$33.77	\$44.24
2018	\$9.80	\$10.95	\$12.03	\$13.52	\$15.04	\$17.09	\$19.97	\$24.63	\$33.65	\$44.23
Annualized percent changes										
2000–2018	0.8%	0.8%	0.8%	0.8%	0.7%	0.8%	0.7%	0.8%	1.0%	1.1%
2000–2007	0.3%	0.5%	0.7%	0.6%	0.9%	1.1%	0.7%	1.1%	1.1%	1.4%
2007–2018	1.1%	1.1%	0.9%	0.9%	0.6%	0.6%	0.7%	0.6%	0.9%	0.9%
2017–2018	4.5%	5.6%	2.2%	2.4%	-1.5%	-0.2%	-1.2%	0.0%	-0.3%	0.0%
Wage disparities										
Black as a share of white										
2000	93.8%	88.4%	84.8%	82.6%	79.2%	79.3%	77.6%	76.9%	74.7%	72.0%
2007	91.3%	86.4%	84.4%	79.7%	77.7%	75.8%	74.9%	72.8%	74.0%	71.7%
2017	89.4%	83.5%	78.3%	76.1%	74.7%	71.1%	69.7%	70.5%	70.3%	65.9%
2018	90.8%	83.7%	80.0%	77.3%	73.3%	70.8%	69.2%	70.6%	70.7%	66.6%
Hispanic as a share of white										
2000	90.2%	81.1%	75.2%	72.7%	69.7%	66.9%	66.6%	66.9%	67.4%	69.0%
2007	90.2%	81.0%	76.8%	72.2%	71.9%	68.4%	66.9%	68.4%	67.5%	68.7%
2017	91.9%	84.3%	78.9%	75.8%	74.5%	69.9%	68.8%	67.8%	68.6%	65.5%
2018	97.2%	87.8%	80.2%	76.5%	73.1%	69.5%	67.6%	67.1%	67.2%	61.4%

Notes: Sample based on all workers ages 16 and older. The xth-percentile wage is the wage at which x% of wage earners earn less and (100-x)% earn more. Race/ethnicity categories are mutually exclusive (i.e., white non-Hispanic, black non-Hispanic, and Hispanic any race).

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Table 4

Average hourly wages by gender and education, 2000–2018 (2018 dollars)

	Less than high school	High school	Some college	College	Advanced degree
All					
2000	\$12.59	\$17.85	\$20.32	\$31.27	\$39.47
2007	\$13.03	\$18.06	\$20.46	\$31.95	\$40.60
2017	\$13.66	\$18.25	\$20.01	\$33.17	\$42.39
2018	\$13.68	\$18.45	\$20.34	\$33.36	\$43.80
Annualized percent changes					
2000–2018	0.5%	0.2%	0.0%	0.4%	0.6%
2000–2007	0.5%	0.2%	0.1%	0.3%	0.4%
2007–2018	0.4%	0.2%	-0.1%	0.4%	0.7%
2017–2018	0.1%	1.1%	1.6%	0.6%	3.3%
Men					
2000	\$13.84	\$20.15	\$22.98	\$35.54	\$44.18
2007	\$14.24	\$20.08	\$22.88	\$36.52	\$46.00
2017	\$15.13	\$20.14	\$22.23	\$38.19	\$48.72
2018	\$15.19	\$20.35	\$22.84	\$38.60	\$51.26
Annualized percent changes					
2000–2018	0.5%	0.1%	0.0%	0.5%	0.8%
2000–2007	0.4%	-0.1%	-0.1%	0.4%	0.6%
2007–2018	0.6%	0.1%	0.0%	0.5%	1.0%
2017–2018	0.4%	1.0%	2.7%	1.1%	5.2%
Women					
2000	\$10.75	\$15.34	\$17.82	\$26.77	\$33.78
2007	\$11.12	\$15.67	\$18.24	\$27.43	\$34.91
2017	\$11.49	\$15.71	\$17.88	\$28.33	\$36.68
2018	\$11.47	\$15.86	\$17.94	\$28.35	\$37.07
Annualized percent changes					
2000–2018	0.4%	0.2%	0.0%	0.3%	0.5%
2000–2007	0.5%	0.3%	0.3%	0.3%	0.5%
2007–2018	0.3%	0.1%	-0.1%	0.3%	0.5%
2017–2018	-0.2%	1.0%	0.4%	0.1%	1.0%
Wage disparities (women's wages as a share of men's)					
2000	77.7%	76.1%	77.5%	75.3%	76.5%
2007	78.1%	78.0%	79.7%	75.1%	75.9%
2017	75.9%	78.0%	80.4%	74.2%	75.3%
2018	75.5%	77.9%	78.6%	73.4%	72.3%

Note: Sample based on all workers ages 16 and older.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Table 5

Average hourly wages by race/ethnicity and education, 2000–2018 (2018 dollars)

	Less than high school	High school	Some college	College	Advanced degree
White					
2000	\$12.81	\$18.60	\$20.98	\$32.15	\$39.97
2007	\$13.18	\$18.96	\$21.19	\$32.89	\$41.28
2017	\$13.69	\$19.49	\$21.15	\$34.39	\$42.94
2018	\$13.77	\$19.75	\$21.58	\$34.75	\$44.46
Annualized percent changes					
2000–2018	0.4%	0.3%	0.2%	0.4%	0.6%
2000–2007	0.4%	0.3%	0.1%	0.3%	0.5%
2007–2018	0.4%	0.4%	0.2%	0.5%	0.7%
2017–2018	0.6%	1.3%	2.0%	1.1%	3.5%
Black					
2000	\$12.10	\$15.75	\$18.02	\$26.60	\$34.98
2007	\$12.22	\$15.67	\$18.16	\$26.56	\$34.38
2017	\$11.96	\$15.39	\$16.99	\$27.02	\$34.91
2018	\$11.42	\$15.57	\$17.15	\$27.46	\$36.23
Annualized percent changes					
2000–2018	-0.3%	-0.1%	-0.3%	0.2%	0.2%
2000–2007	0.1%	-0.1%	0.1%	0.0%	-0.2%
2007–2018	-0.6%	-0.1%	-0.5%	0.3%	0.5%
2017–2018	-4.5%	1.1%	0.9%	1.6%	3.8%
Hispanic					
2000	\$12.48	\$15.88	\$18.52	\$26.62	\$35.55
2007	\$13.13	\$16.48	\$18.82	\$28.36	\$38.40
2017	\$14.02	\$17.02	\$18.53	\$28.38	\$37.69
2018	\$14.11	\$17.28	\$18.66	\$28.49	\$38.47
Annualized percent changes					
2000–2018	0.7%	0.5%	0.0%	0.4%	0.4%
2000–2007	0.7%	0.5%	0.2%	0.9%	1.1%
2007–2018	0.7%	0.4%	-0.1%	0.0%	0.0%
2017–2018	0.6%	1.5%	0.7%	0.4%	2.1%
Wage disparities					
Black as a share of white					
2000	94.5%	84.7%	85.9%	82.8%	87.5%
2007	92.7%	82.6%	85.7%	80.8%	83.3%
2017	87.3%	79.0%	80.3%	78.6%	81.3%
2018	82.9%	78.8%	79.5%	79.0%	81.5%
Hispanic as a share of white					
2000	97.5%	85.4%	88.3%	82.8%	89.0%
2007	99.6%	86.9%	88.8%	86.2%	93.0%
2017	102.4%	87.3%	87.6%	82.5%	87.8%
2018	102.4%	87.5%	86.4%	82.0%	86.5%

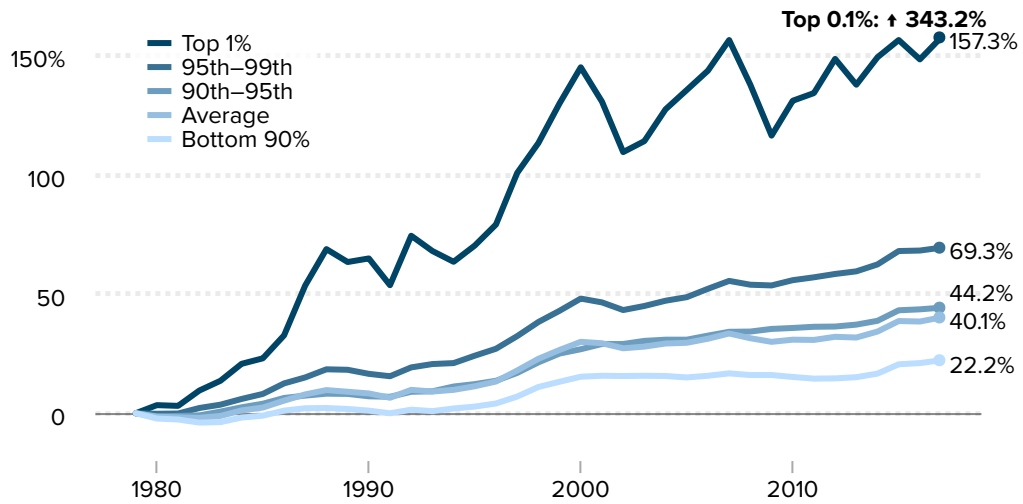
Note: Sample based on all workers ages 16 and older.

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata from the U.S. Census Bureau

Economic Policy Institute

Appendix
Figure A

Cumulative percent change in real annual wages, by wage group, 1979–2017

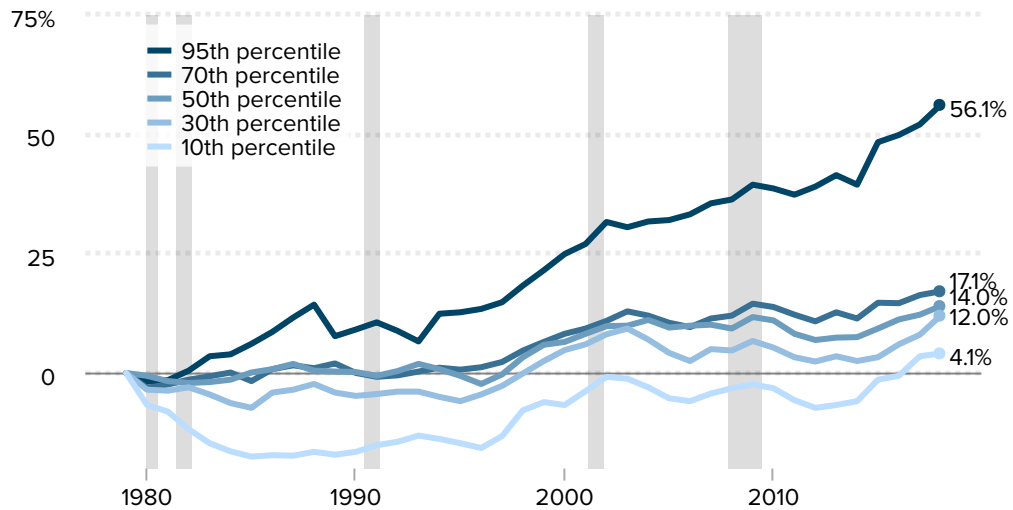


Source: EPI analysis of Kopczuk, Saez, and Song (2010, Table A3) and Social Security Administration wage statistics

Economic Policy Institute

Appendix
Figure B

Cumulative change in real hourly wages of all workers, by wage percentile, 1979–2018

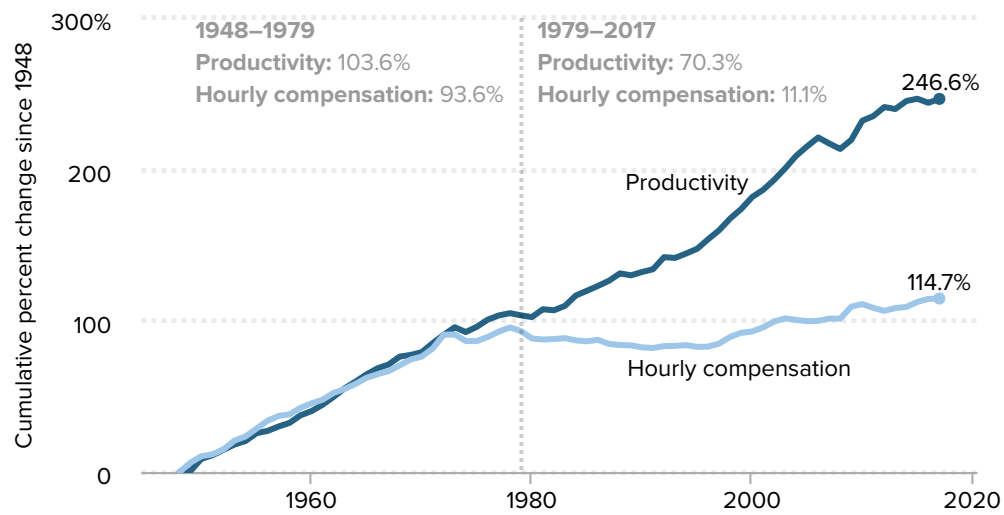


Notes: Shaded areas denote recessions. The xth-percentile wage is the wage at which x% of wage earners earn less and (100-x)% earn more.

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

Economic Policy Institute

Productivity growth and hourly compensation growth, 1948–2017



Notes: Data are for compensation (wages and benefits) of production/nonsupervisory workers in the private sector and net productivity of the total economy. “Net productivity” is the growth of output of goods and services less depreciation per hour worked.

Source: EPI analysis of Bureau of Labor Statistics and Bureau of Economic Analysis data. Updated from Figure A in Bivens et al. 2014.

Economic Policy Institute

Endnotes

1. For more information about the CPS and CES employment measures, see BLS 2019.
2. See EPI 2019e for an interactive calculator illustrating this divergence.
3. Regression-adjusted figures are not shown in the tables in this report but are available in the *State of Working America Data Library* (EPI 2019d).

References

- Bivens, Josh, Elise Gould, Lawrence Mishel, and Heidi Shierholz. 2014. *Raising America's Pay: Why It's Our Central Economic Policy Challenge*. Economic Policy Institute Briefing Paper no. 378, June 2014.
- Bivens, Josh, and Ben Zipperer. 2018. *The Importance of Locking in Full Employment for the Long Haul*. Economic Policy Institute, August 2018.
- Bureau of Labor Statistics (BLS). 2019. "Comparing Employment from the BLS Household and Payroll Surveys" (web page). Last updated February 1, 2019.
- Economic Policy Institute (EPI). 2016. *The Agenda to Raise America's Pay*. Last updated December 6, 2016.
- Economic Policy Institute (EPI). 2018a. *Gender Pay Gap Calculator*. Last updated March 1, 2018.
- Economic Policy Institute (EPI). 2018b. *Policy Agenda*. December 2018.
- Economic Policy Institute (EPI). 2019a. *Methodology for Measuring Wages and Benefits*. Last updated February 2019.
- Economic Policy Institute (EPI). 2019b. *Minimum Wage Tracker*. Last updated January 8, 2019.
- Economic Policy Institute (EPI). 2019c. *Nominal Wage Tracker*. Last updated February 1, 2019.
- Economic Policy Institute (EPI). 2019d. *State of Working America Data Library*. Last updated February 2019.
- Economic Policy Institute (EPI). 2019e. *Wage Calculator*. Next update forthcoming February 2019.
- Gould, Elise. 2003. *Measuring Employment Since the Recovery: A Comparison of the Household and Payroll Surveys*. Economic Policy Institute Briefing Paper no. 148, December 2003.
- Gould, Elise. 2017. *The State of American Wages 2016: Lower Unemployment Finally Helps Working People Make Up Some Lost Ground on Wages*. Economic Policy Institute, March 2017.
- Gould, Elise. 2018. *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.
- Kopczuk, Wojciech, Emmanuel Saez, and Jae Song. 2010. "Earnings Inequality and Mobility in the

United States: Evidence from Social Security Data Since 1937.” *Quarterly Journal of Economics* 125, no. 1: 91–128.

Mishel, Lawrence, Josh Bivens, Elise Gould, and Heidi Shierholz. 2012. *The State of Working America, 12th Edition*. Ithaca, N.Y.: Cornell Univ. Press.

Mishel, Lawrence, Heidi Shierholz, and John Schmitt. 2013. *Don’t Blame the Robots: Assessing the Job Polarization Explanation of Growing Wage Inequality*. Economic Policy Institute, Center for Economic and Policy Research Working Paper, November 2013.

Mishel, Lawrence, and Julia Wolfe. 2018. “Top 1.0 Percent Reaches Highest Wages Ever—Up 157 Percent Since 1979.” *Working Economics* (Economic Policy Institute blog), October 18, 2018.

Social Security Administration. Various years. *Wage Statistics* [database].

U.S. Census Bureau, Current Population Survey basic monthly microdata (U.S. Census Bureau CPS basic). Various years. Survey conducted by the Bureau of the Census for the Bureau of Labor Statistics [machine-readable microdata file]. Accessed January 2019 at https://thedataweb.rm.census.gov/ftp/cps_ftp.html.

U.S. Census Bureau, Current Population Survey Outgoing Rotation Group microdata (U.S. Census Bureau CPS-ORG). Various years. Survey conducted by the Bureau of the Census for the Bureau of Labor Statistics [machine-readable microdata file]. Accessed January 2019 at https://thedataweb.rm.census.gov/ftp/cps_ftp.html.