Economic Policy Institute

State of Working America 2021

Measuring wages in the pandemic labor market

Report • By Elise Gould and Jori Kandra • April 27, 2022

The *State of Working America* project. This report is the latest in EPI's annual series looking at *State of Working America* wage data. For decades, EPI's *State of Working America* project has been tracking wages, incomes, poverty, and wealth in order to answer the question, "How well is the economy working for working families in the U.S.?" Originally published biennially in book form from 1988 to 2012, the *State of Working America* data library is now available online at epi.org/data.

Wage growth is a key indicator of labor market health. Accurate measurement of wage changes is important for assessing labor market tightness, workers' bargaining power, and the appropriate policy response.

But the pandemic labor market has distorted our picture of wage growth. Because low-wage workers lost their jobs in disproportionate numbers in 2020, the average wage shot up—making it look like the U.S. was experiencing historically high wage growth. When many of these workers reentered the workforce in 2021, the average wage fell.

While these wage fluctuations appear at first glance to be dramatic, they are actually more modest when we take into account the shifts in workforce composition. When we adjust for composition, we can also see more clearly unusual patterns of wage growth occurring across the wage distribution—most notably, wage growth that was higher for low-wage workers than for middle- and high-wage workers.

In addition to analyzing wage trends in this report, we look at ongoing wage-level disparities by race/ethnicity and gender, and between high earners and low- and middle-wage earners. There is, as always, more than one narrative about how well the economy is working for working families.

SECTIONS

Background

Early in the COVID-19 pandemic, businesses that required face-to-face interaction saw demand for their output collapse due to voluntary and policy-encouraged social distancing measures. In response, the federal government provided economic support to workers, families, and businesses so they could weather the economic upheaval.

Because the 2020 recession was driven by a highly unusual cause—the need to control the pandemic and keep people safe—its first-round impacts were far different from previous recessions in terms of which sectors, wage levels, and workers were hit hardest. And the number of jobs lost—millions in a matter of weeks—was stunning. Then, as the recovery took hold, jobs came back at a tremendous pace, largely because of continued COVID relief and recovery measures (Gould and Shierholz 2022).

This skewed shutdown (and subsequent recovery) of economic activity meant that workers in certain industries—for example, leisure and hospitality—were more likely to lose their jobs (and then regain them when it was safe to do so). In particular, lower-wage and lower-hour occupations within leisure and hospitality were more subject to job loss (Gould and Kassa 2021).

Key findings

- Using a measure that controls for the unusual composition of the pandemic labor market, we find that the average wage grew 4.4% in the first year of the pandemic and fell 1.7% in the second year.
- Over the last year, low-wage workers experienced faster wage growth than middle- and higher-wage workers.
- Despite experiencing faster wage growth, low-wage workers still suffer from grossly inadequate wages.
- Wage levels remain vastly unequal across the U.S. labor market. Disparities among workers by wage level, gender, and race/ethnicity remain stark.
- Although low-wage workers have recently had more leverage to bid up their wages, it may be short-lived if the recovery is cut short.

Because low-wage workers faced the vast majority of job losses in 2020, wages overall appeared to grow tremendously fast by historical standards (Gould and Kandra 2021). But this was simply a mechanical result of fewer low-wage workers being represented in the data; it did not actually reflect meaningful increases in living standards for workers. Similarly, as jobs in many of these lower-wage sectors returned between 2020 and 2021, wage growth was mechanically pulled down.

In short, workforce composition matters when trying to accurately measure wage growth during the pandemic, because job loss and recovery were not randomly distributed among workers by age, gender, race/ethnicity, education, or job characteristics.

In this analysis, we control for that shifting composition to more accurately measure changes in inflation-adjusted wages over the last year and throughout the pandemic labor market.

What this report finds

This report shows that younger workers, women workers, workers with lower levels of educational attainment, and Black, Hispanic, and Asian American and Pacific Islander (AAPI) workers faced far greater job losses than other groups during the economy's pandemic-driven contraction. Part-time and nonunion workers, as well as workers in leisure and hospitality industries and service occupations, also faced disproportionately higher job losses. After adjusting for the resulting compositional changes in the labor market, we find that wage growth between 2019 and 2020 was slower and wage growth between 2020 and 2021 was faster than a nonadjusted data examination suggest.

However, even with the faster wage growth among lower-wage workers in the last year, wage *levels* remain vastly unequal across the U.S. labor market. Nearly 30 million workers were paid less than $15 an hour last year. The regression-adjusted gender wage gap hasn't seen much improvement in 25 years, while the Black–white wage gap has widened during that time. Over the last year, low-wage workers experienced real wage growth, while middle- and high-wage workers did not. In fact, even with faster inflation—driven by supply chain bottlenecks and recent energy price spikes—the bottom 25–30% of the wage distribution saw their real (inflation-adjusted) wages rise.

While the economy is on track for a return to pre-pandemic labor market conditions by the end of 2022, the pre-pandemic labor market was far from perfect. More needs to be done to repair the inequalities and disparities that persist in the U.S. labor market.

Workforce composition shifted dramatically over the last two years

In the pandemic labor market, job losses disproportionately hit certain groups of workers harder than others. To more accurately measure changes in wages and living standards, wages must be adjusted for the large compositional shifts that occurred between the pre-pandemic labor market and today.

In this section, we first examine the changing composition of the workforce, and we then demonstrate how reweighting the 2020 and 2021 labor market using the pre-pandemic composition influences our measurement of wage growth.

Table 1 and **Table 2** display the employment composition of the labor market in the pre-pandemic period and the subsequent two years. The baseline (pre-pandemic) period is defined as March 2019 through February 2020, which we refer to as "alt-2019" throughout this paper. Likewise, "alt-2020" refers to the period from March 2020 through February 2021, and "alt-2021" refers to the period from March 2021 through February 2022.

Table 1 shows composition shifts by demographic characteristics, while Table 2 shows composition shifts by job characteristics. Employment levels are shown in millions for ease in reading them, but the percent changes displayed are based on unrounded data, as

noted.

These tables clearly show the dramatic changes in the composition of the workforce over the past two years. Between 2019 and 2020, women workers and Black, Hispanic, and Asian American and Pacific Islander workers were more likely than men and white workers to experience job losses. Younger workers were far more likely to experience job losses than older workers, which is not surprising given that younger workers were more likely to be working in the industries and occupations that were hardest hit by the pandemic recession (Gould and Kassa 2020). Job losses decreased markedly with educational attainment. Workers with some college or less (about 60% of the alt-2019 workforce) were nearly six times as likely to experience job loss as workers with at least a four-year college degree.

Job gains in the most recent year display almost the exact opposite pattern—with women workers, younger workers, workers with lower levels of educational attainment, and Black, Hispanic, and AAPI workers experiencing faster gains.

As with demographic characteristics, job losses were nonrandom in the pandemic economy with respect to job characteristics, as shown in **Table 2**. Part-time workers were far more likely to lose their jobs than full-time workers, which is not surprising given that the industries and occupations hardest hit are more likely to employ part-time workers (Gould and Kassa 2021). Union workers were more insulated in the pandemic downturn than nonunion workers, which mechanically increased the economywide unionization rate (McNicholas, Shierholz, and Poydock 2021).[1]

About a quarter (25.9%) of leisure and hospitality jobs were lost in the first year of the pandemic as businesses in that sector shuttered or scaled back operations. As of the most recent year, this sector remains 12.8% below pre-pandemic levels. More than 1 in 6 jobs in service occupations (18.7%) were lost in the first year of the pandemic; gains in the last year bring the job shortfall to 9.9% of pre-pandemic levels.

Compositional shifts distort normal measures of wage growth

The compositional shifts from the pre-pandemic labor market have had a significant impact on wage growth. **Figure A** displays average and median wage changes between the pre-pandemic labor market (alt-2019) and the first year of the pandemic (alt-2020), as well as changes between alt-2020 and the most recent 12-month period (alt-2021). Average and median wage changes in both sets of years are provided using the normal weight and the composition-adjusted, or inverse probability, weight. (See the methodology appendix for more information about the procedure.)

Using the normal weight, we see that real wage growth rose 7.4% at the mean and 6.6% at the median between alt years 2019 and 2020. This is consistent with the very fast wage growth we reported in last year's *State of Working America* wages report (Gould and

Table 1

Employment composition of the pre-pandemic and pandemic workforces, by selected demographic characteristics

Employment	Alt-2019 (millions)	Alt-2020 (millions)	Alt-2021 (millions)	Alt-2019–Alt-2020	Alt-2020–Alt-2021	Alt-2019–Alt-2021
All	141.58	130.42	137.01	-7.9%	5.1%	-3.2%
Gender						
Male	73.26	67.90	71.08	-7.3%	4.7%	-3.0%
Female	68.32	62.52	65.93	-8.5%	5.5%	-3.5%
Age						
24 and under	18.92	16.51	18.18	-12.7%	10.1%	-3.9%
25–54	91.67	85.22	88.87	-7.0%	4.3%	-3.1%
55 and over	30.99	28.68	29.96	-7.4%	4.4%	-3.3%
Race/ ethnicity						
White	86.32	80.26	83.10	-7.0%	3.5%	-3.7%
Black	17.99	16.36	17.37	-9.1%	6.2%	-3.5%
Hispanic	25.58	23.17	24.98	-9.4%	7.8%	-2.3%
AAPI	10.16	9.29	10.08	-8.6%	8.5%	-0.9%
Education						
Less than high school	11.29	9.33	10.36	-17.4%	11.1%	-8.2%
High school	36.85	32.69	35.07	-11.3%	7.3%	-4.8%
Some college	39.15	35.19	36.17	-10.1%	2.8%	-7.6%
College	34.63	33.43	34.91	-3.5%	4.4%	0.8%
Advanced	19.66	19.78	20.50	0.6%	3.6%	4.3%

Notes: AAPI refers to Asian American and Pacific Islander. Race/ethnicity categories are mutually exclusive (i.e., white non-Hispanic, Black non-Hispanic, AAPI non-Hispanic, and Hispanic any race). Data for each 12-month period is the average employment over that period. Percent changes are calculated using unrounded data. Alt-2019 refers to the 12 months before the pandemic (March 2019–February 2020), alt-2020 refers to the initial 12 months of the pandemic (March 2020–February 2021), and alt-2021 refers to the most recent 12 months of the pandemic (March 2021–February 2022).

Source: Authors' analysis of Current Population Survey basic monthly microdata, EPI Current Population Survey Extracts, Version 1.0.27 (2022), https://microdata.epi.org.

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Kandra 2021). In that report, we showed how the bottom simply dropped out of the labor force. Here, we conduct a more systematic analysis of the changing composition of the workforce in the pandemic economy.

Once we hold constant alt-2019 composition, wage growth is measurably slower. Composition-adjusted average wage growth is 4.4%, or a full 3 percentage points slower than originally reported. And the median wage growth is 2.6%, or 4 percentage points slower than originally reported. While the composition-adjusted wage growth is fast in historical terms—given slow wage growth for much of the last four decades—it is much slower than the non-composition-adjusted wage growth.

Regardless of which weight is used, median and average wages fell between the first and

Table 2

Employment composition of the pre-pandemic and pandemic workforces, by selected job characteristics

Employment	Alt-2019 (millions)	Alt-2020 (millions)	Alt-2021 (millions)	Alt-2019–Alt-2020	Alt-2020–Alt-2021	Alt-2019–Alt-2021
All	141.58	130.42	137.01	-7.9%	5.1%	-3.2%
Part-time status						
Part-time	23.96	21.00	21.87	-12.4%	4.2%	-8.7%
Full-time	117.62	109.42	115.14	-7.0%	5.2%	-2.1%
Union status						
Not union	125.22	114.64	121.32	-8.4%	5.8%	-3.1%
Union	16.36	15.77	15.68	-3.6%	-0.6%	-4.1%
Major industry						
Agriculture, forestry, fishing, and hunting	1.36	1.32	1.33	-2.8%	0.4%	-2.4%
Mining	0.71	0.61	0.56	-14.6%	-8.3%	-21.7%
Construction	8.73	8.15	8.64	-6.7%	6.1%	-1.1%
Manufacturing	15.03	13.88	14.28	-7.6%	2.9%	-5.0%
Wholesale and retail trade	18.21	17.36	18.15	-4.6%	4.5%	-0.3%
Transportation and utilities	7.99	7.73	8.52	-3.3%	10.2%	6.6%
Information	2.56	2.26	2.43	-11.8%	7.4%	-5.2%
Financial activities	9.45	9.21	9.25	-2.5%	0.5%	-2.1%
Professional and business services	16.33	15.15	16.02	-7.2%	5.7%	-1.9%
Education and health services	34.31	32.02	32.98	-6.7%	3.0%	-3.9%
Leisure and hospitality	13.52	10.03	11.79	-25.9%	17.6%	-12.8%
Other services	6.13	5.27	5.68	-14.0%	7.8%	-7.3%
Major occupation						
Management, business, and financial occupations	22.08	22.00	22.87	-0.3%	3.9%	3.6%
Professional and related occupations	34.65	33.25	34.15	-4.0%	2.7%	-1.4%
Service occupations	24.46	19.88	22.04	-18.7%	10.9%	-9.9%
Sales and related occupations	13.30	11.97	12.23	-9.9%	2.1%	-8.0%
Office and administrative support occupations	17.00	14.90	15.37	-12.4%	3.2%	-9.6%
Farming, fishing, and forestry extractions	1.04	0.91	0.93	-12.1%	2.1%	-10.3%
Construction and extraction occupations	6.82	6.19	6.62	-9.2%	6.8%	-3.0%

Table 2 (cont.)

Employment	Alt-2019 (millions)	Alt-2020 (millions)	Alt-2021 (millions)	Alt-2019–Alt-2020	Alt-2020–Alt-2021	Alt-2019–Alt-2021
Installation, maintenance, and repair occupations	4.49	4.17	4.49	-7.1%	7.7%	0.0%
Production occupations	8.21	7.29	7.61	-11.3%	4.4%	-7.4%
Transportation and material moving occupations	9.53	9.86	10.70	3.4%	8.6%	12.2%

Notes: Data for each 12-month period is the average employment over that period. Percent changes are calculated using unrounded data. Alt-2019 refers to the 12 months before the pandemic (March 2019–February 2020), alt-2020 refers to the initial 12 months of the pandemic (March 2020–February 2021), and alt-2021 refers to the most recent 12 months of the pandemic (March 2021–February 2022).

Source: Authors' analysis of Current Population Survey basic monthly microdata, EPI Current Population Survey Extracts, Version 1.0.27 (2022), https://microdata.epi.org.

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second year of the pandemic (alt-2020 to alt-2021). As expected, the fall is greater using the normal weight because, as lower-wage workers return to the workforce, the average and median are mechanically pulled down by their lower wages. Once wage changes are composition-adjusted, the fall at the middle of the wage distribution is moderated, falling about 1 percentage point (at the mean) or 1.8 percentage points (at the median) slower than the normal weight showed.

What did wages do in 2021?

The prior section examines wage changes at the median and the mean. In this section, we examine wage changes across the wage distribution between 2020 and 2021.[2]

In **Figure B**, we provide two sets of analysis that examine wage growth across the wage distribution. Wage percentiles are shown on a continuum (5th through 90th[3]) on the x-axis, with the ventiles (5th, 10th, 15th, etc.) marked. Year-over-year wage growth for each percentile is show on the y-axis.

First, we focus on the most recent annual changes, shown in dark blue, between our alternative years, that is, wage changes across the wage distribution from the first full year to the second full year of the pandemic. The light blue line in Figure B shows wage growth for calendar year 2021 compared with calendar year 2020.

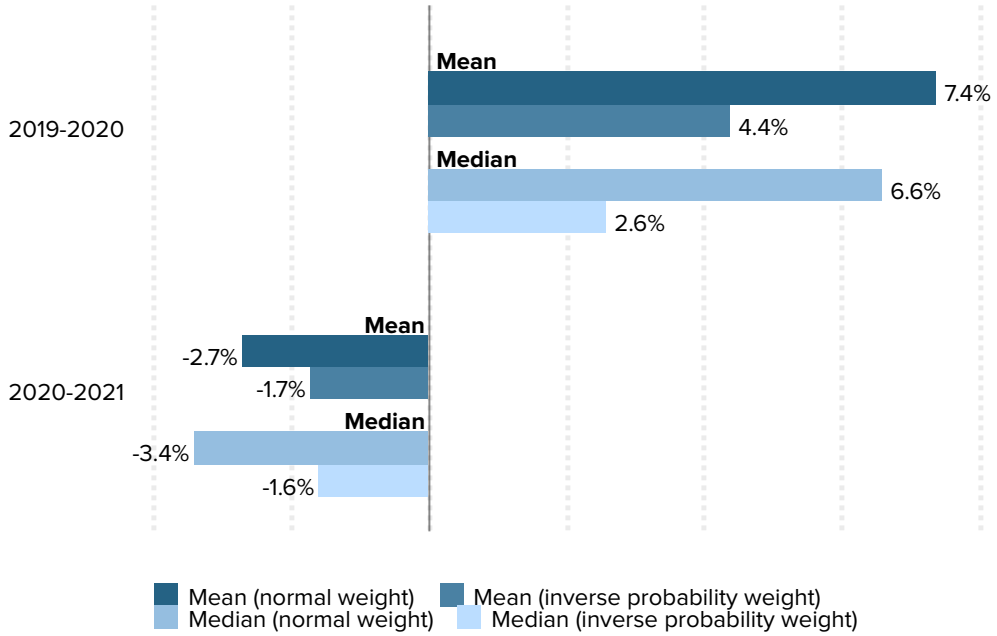
In both time periods shown, wage growth falls with increasing wage level: Lower-wage workers experience faster wage growth than higher-wage workers. Even with faster inflation over the last several months, lower-wage workers experienced real wage increases over the last year. In the alternative year comparison, the bottom 25% of wages rose in inflation-adjusted terms. Wage growth was slightly faster across the board in the calendar year comparison (light blue line), with close to 30% of workers experiencing real wage gains between calendar years 2020 and 2021.

Given the slow average pace of wage growth for low- and moderate-wage workers for

Figure A

Compositional shifts distort normal measures of wage growth

Median and mean changes in wages, normal and inverse probability (composition-adjusted) weights, 2019–2020 and 2020–2021



Notes: The section "2019–2020" shows changes between the 12 months before the pandemic (March 2019–February 2020) and the initial 12 months of the pandemic (March 2020--February 2021). The section "2020–2021" refers to changes between the initial 12 months of the pandemic (March 2020--February 2021) and the most recent 12 months of the pandemic (March 2021–February 2022). "Normal weight" refers to data adjusted using the sample weight used in the Outgoing Rotation Groups sample. We employ a logit model to create an inverse probability weight, controlling for education, race/ethnicity, gender, age (through the quartic/fourth power), geographic region, citizenship, marital status, parental status, major industry and occupation, full-time status, and union status. Wages are adjusted for inflation to February 2022 dollars using the CPI-U-RS.

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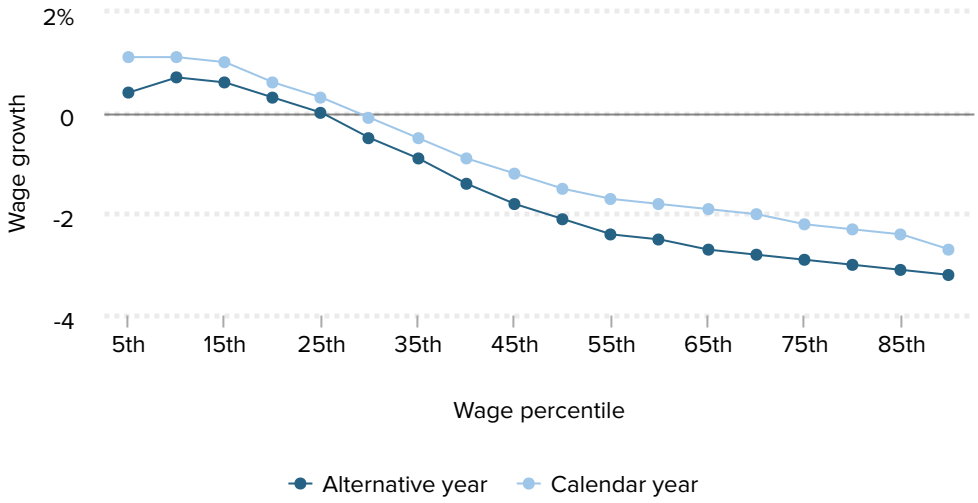
most of the last four decades, this fast growth for low-wage workers is decidedly welcome news. Unfortunately, higher inflation has eaten away real wage gains for a majority of workers.

Figure C takes a different slice at what happened with wage growth in the last year by examining year-over-year changes between three-month periods. This figure shows that lower-wage workers experienced consistent real wage increases throughout the year, particularly over the summer, fall, and winter quarters. Between the spring of 2020 and the spring of 2021 (months March to May), wage growth was more even across the wage distribution than during the other time periods. Though lower-wage workers were the only group to experience real wage growth in this quarter, the top half of the wage distribution experienced smaller losses in the spring quarter than in the other three quarters.

Figure B

Wage growth fell at higher wage levels in 2021

Real annual composition-adjusted wage growth by percentile, alternative and calendar years, 2020–2021



Notes: "Alternative year 2020–2021" refers to changes between the initial 12 months of the pandemic (March 2020--February 2021) and the most recent 12 months of the pandemic (March 2021–February 2022). "Calendar year 2020--2021" refers to changes between January–December 2020 and January–December 2021. Wages are adjusted for inflation to February 2022 dollars using the CPI-U-RS. Wage changes are available only up to the 90th percentile because of topcoding issues (see Gould, deCourcy, and Mokhiber 2022).

Source: Authors' analysis of Current Population Survey Outgoing Rotation Group microdata, EPI Current Population Survey Extracts, Version 1.0.27 (2022), https://microdata.epi.org.

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Why are wages rising for low-wage workers—and will the trend continue?

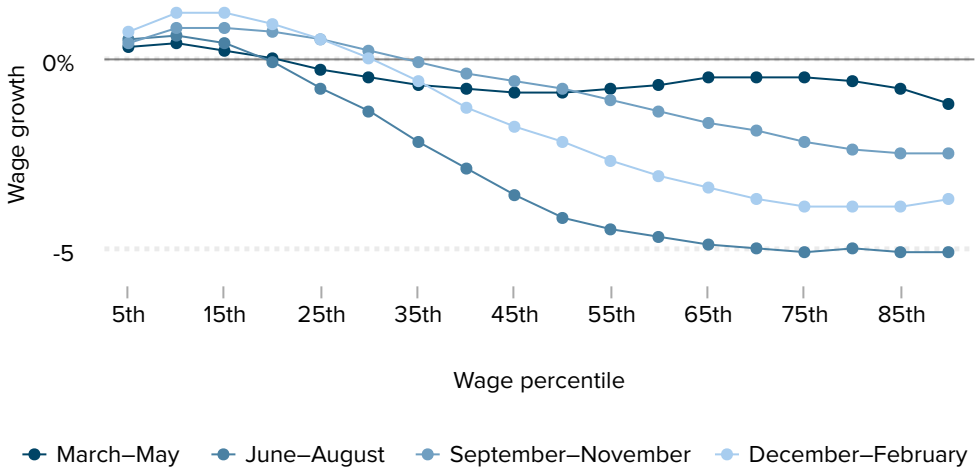
It is often in only the tightest of labor markets that low-wage workers have any leverage to bid up their wages. In much of 2021, low-wage workers—particularly workers in leisure and hospitality—found themselves with additional bargaining power, including the ability to quit their jobs in favor of better ones. In fact, it was in the lowest-wage sectors that rates of quits and hires were the highest.

This phenomenon has been widely misunderstood—there has been too much focus on high levels of quits without attention to concurrent hiring levels. Probably the best label we have seen for this labor market churn is "The Great Reshuffling." Although the quits rate was high by historical standards, the hires rate was consistently higher than the quits rate across the economy and within all sectors (Gould 2022a). Wage growth in leisure and hospitality over the last year, as well as among low-wage workers—as shown in Figures B and C—suggests that many of the quits simply represent workers moving to jobs with higher hourly wages.

Figure C

Wage growth is fastest among lower-wage workers in every quarter

Real year-over-year quarterly composition-adjusted wage growth by percentile, March 2020– February 2022



Notes: March–May compares March 2020–May 2020 wages with March 2021–May 2021 wages. June–August compares June 2020–August 2020 wages with June 2021–August 2021 wages. September–November compares September 2020–November 2020 wages with September 2021–November 2021 wages. December–February compares December 2020–February 2021 wages with December 2021–February 2022 wages. The wage data in each period is compositionally adjusted to the relevant pre-pandemic period; for instance, March 2019–May 2019 composition adjustment is applied to the March 2020—May 2020 and the March 2021—May 2021 wage levels. Wages are adjusted for inflation to February 2022 dollars using the CPI-U-RS. Wage changes are available only up to the 90th percentile because of topcoding issues (see Gould, deCourcy, and Mokhiber 2022).

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The tight labor market—accompanied by increased leverage for low-wage workers—is in part attributable to pent-up demand for leisure and hospitality services, and in part because of a reduced supply of workers, as many continue to sit out the labor market. The Economic Impact Payments, the Paycheck Protection Program, and the temporary boost in unemployment insurance helped workers make ends meet while businesses shuttered. Together, those relief measures provided many workers a safety net, and in some cases, let them actually boost their personal savings for a spell. This income buffer allowed workers to reevaluate what they wanted from their jobs and their employers, which has likely led to some of the reshuffling and faster wage growth.

Given that pandemic unemployment insurance programs have ended, this buffer has begun to erode; eventually workers will become more desperate to find and keep jobs. As workers continue to return to the labor market and inflation remains high, workers may lose the temporary leverage they experienced in 2021.[4]

Wage levels remain vastly unequal

Even with the faster wage growth among low-wage workers in the last year, wage *levels* remain vastly unequal across the U.S. labor market at different parts of the wage distribution, as well as by gender and race/ethnicity. As we look at the impact of the pandemic recession and recovery on wages in the last couple of years, it is important to remember what the state of the economy was just before we entered the recession: Even though things were finally getting better overall in the prolonged recovery from the Great Recession, the economy still wasn't working for everyone.

Wage inequality has grown since 1979. Our annual *State of Working America* reports have long documented the rising wage inequality and slow and uneven hourly wage growth for the vast majority of workers that characterized much of the last four decades in the United States. In only 10 of the last 40 years did most workers see any consistent positive wage growth (Gould 2020). For most of the last 40 years, typical workers' wage growth was slow and lagged far behind gains in productivity.

To measure the change in inequality over those years, we need accurate measures of the top of the wage distribution. The public data we use for wage analyses hide high earnings—assigning a common value, or "top code," to them, currently $2,884.61 per week—making it difficult to measure wages at the very top. Unfortunately, it has become increasingly difficult to get an accurate read on the 95th-percentile wage because the topcoded value for weekly earnings has sat at the same dollar value in nominal terms since 1998 (Gould, deCourcy, and Mokhiber 2022).

Data from the Social Security Administration show that the chasm between top wages and the wages of the majority has only grown wider over the last four decades. Between 1979 and 2020, the top 1% of earners saw a 179% increase in their wages, while the wages of those in the bottom 90% grew just 28% (Mishel and Kandra 2021).

Too many workers are low-wage workers. Low-wage workers still make up significant shares of the U.S. workforce. In 2021, nearly 30 million workers, or 22% of the workforce, were paid less than $15 an hour (EPI 2022a microdata).[5] Contributing to this dismal number is the fact that the federal minimum wage stands at $7.25 an hour and has lost more than 21% of its value since it was last increased in July 2009 (Zipperer 2021). If federal policymakers increased the federal minimum wage to $15 an hour, millions of low-wage workers would see their wages rise (Cooper, Mokhiber, and Zipperer 2021).

In contrast, 11% of workers (15 million) have wages above $50 an hour (EPI 2022a microdata). This means that *twice* as many workers have wages lower than $15 an hour (30 million workers) as have wages greater than $50 an hour (15 million workers).

Low-wage workers are disproportionately women, Black, and/or Hispanic. Over 26% of women workers (17 million) are paid less than $15 an hour. Nearly 30% of Black workers (over 5 million) and 29% of Hispanic workers (over 7 million) are paid less than $15 an hour.

While lower-wage workers are disproportionately women, Black, and/or Hispanic, higher-

wage workers (earning more than $50 an hour) are disproportionately men and/or white. Nearly two-thirds of these high-wage workers are men; 14% of men are high-wage workers compared with only 8% of women. Roughly one in eight white workers (13%) is high-wage compared with only one in 20 for both Black and Hispanic workers.

The gender wage gap persists. An examination of wage levels tells us that men, on average and across the wage distribution, are paid significantly more than women. In a regression framework—controlling for race/ethnicity, education, age, and geographic division—women are paid on average 22.1% less than men (EPI 2022b). There has been little to no progress in closing the gender wage gap in three decades (Gould 2022b). Furthermore, though women have seen larger gains in educational attainment than men, more education doesn't mean women face smaller wage gaps. In fact, women with advanced degrees are paid less, on average, than men with bachelor's degrees.

Racial/ethnic wage gaps have widened. Wage growth was unequal not only by wage level over the last four decades, but also by race, with significant and widening gaps in wages between Black and white workers. And, while more education leads to better labor market outcomes in general, our analysis of wages shows that education does not inoculate workers against slow wage growth or widening racial wage gaps.

While the gender wage gap hasn't narrowed much, the Black–white wage gap has widened. On average, the Black–white regression-adjusted pay gap grew from 8.6% in 1979 to 14.6% in 2021 (EPI 2022c). The growing Black–white wage gap is particularly acute at higher levels of education (Wilson and Darity 2022).

While the Black–white wage gap has grown significantly, the Hispanic–white wage gap has increased slightly over the last four decades: from 10.3% in 1979 to 11.1% in 2021 (EPI 2022d). Lower wages, occupational segregation, and health inequality have meant that Black and Hispanic workers have fared far worse than their white counterparts during the pandemic (Gould and Wilson 2020; Gould, Perez, and Wilson 2020).

Conclusion

Changes in workforce composition influenced measured wage growth in the pandemic economy, leading to distortions in this important economic indicator. Workforce composition mechanically pulled up wage growth in the first year of the pandemic, as low-wage workers disproportionately lost their jobs, and it pulled wage growth down in the second year—as many low-wage workers returned to the labor market.

When we adjust the composition of the 2020 and 2021 workforces to replicate the composition of the pre-pandemic workforce—controlling for demographic characteristics such as age, gender, race/ethnicity, and education and for job characteristics such as work hours, union status, industry, and occupation—and then examine wage changes over the course of the pandemic, we are able to get a more accurate picture of how workers are faring.

We find that, over the last year, low-wage workers experienced faster wage growth than middle- and high-wage workers. Even with faster inflation—driven by supply chain bottlenecks and recent energy price spikes—the bottom 20–25% of the wage distribution saw their inflation-adjusted wages rise while other groups experienced real wage losses.

But even with the faster wage growth among low-wage workers in the last year, wage levels remain vastly unequal across the U.S. labor market. There are twice as many workers who are paid less than $15 per hour as workers who are paid more than $50 an hour. Disparities among workers by gender and race/ethnicity remain stark. The U.S. has made little to no progress narrowing the gender wage gap in the last few decades, and the Black–white wage gap has widened significantly.

At the current pace of job growth, a return to pre-pandemic labor market conditions is likely to occur by the end of 2022. This is welcome news, but we must keep in mind that the pre-pandemic labor market was far from perfect. Much work remains to be done to address inequalities in the labor market.

Though policymakers are now turning their attention toward inflation, it is imperative that labor demand be kept strong enough to give the labor market a chance to reach and remain at full employment for a long spell, to provide jobs for the millions who remain sidelined, to give workers a chance to experience sustained wage growth, and to give workers the leverage needed to reduce labor market discrimination.

In addition, policymakers should enact labor market policies—such as raising the federal minimum wage and protecting and strengthening workers' rights to bargain collectively for higher wages and benefits—so that low-wage workers can sustain and build on their recent gains.

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Appendix: Methodology notes

We construct compositionally adjusted wages to compare wage growth between 2019 and 2020 and between 2020 and 2021 based on the labor market for the 12 months prior to the pandemic downturn—March 2019 through February 2020—which serves as a pre-COVID-19 baseline for labor market composition. We use "alt-2019" to refer to the 12 months before the pandemic from March 2019 to February 2020, "alt-2020" to refer to the initial 12 months of the pandemic from March 2020 to February 2021, and "alt-2021" to refer to the most recent 12 months of the pandemic from March 2021 to February 2022.

Our estimates of composition-adjusted wages come from our analysis of the Economic

Policy Institute Microdata Extracts (2022). Using Current Population Survey Outgoing Rotation Group microdata, we inflation-adjust monthly wage data to February 2022 dollars and employ a logit model to create an inverse probability weight. In this model, we control for education, race/ethnicity, gender, age (through the quartic/fourth power), geographic region, citizenship, marital status, parental status, major industry and occupation, full-time status, and union status. Tables 1 and 2 provide the basis for the inclusion of most of these variables, since employment losses (and gains) varied measurably across these demographic and job characteristics between the years of interest.

The inverse probability weight we create adjusts the labor market composition separately for both alt-2020 and alt-2021 to resemble the alt-2019 labor market composition. For Figure A, we calculate average and median wage growth between alt-2019 and alt-2020 and between alt-2020 and alt-2021 using the inverse probability weight. For Figure B, we calculate real wage growth between alt-2020 and alt-2021 by ventile using the inverse probability weight and using EPI's binipolate[6] command and, following work done by Dube (2022), smoothed using Locally Weighted Scatterplot Smoothing (LOWESS[7]). For this analysis, we have removed the 95th percentile because the top code on weekly earnings (used to construct hourly wages for many workers) has been constant in nominal value since 1998, making it increasingly difficult to accurately measure high-end wages (Gould, deCourcy, and Mokhiber 2022).

We apply these compositional adjustments to various time periods, estimating wages in the more recent period using the composition in the relevant pre-pandemic period. Figure B also includes composition-adjusted wage changes between calendar years 2020 and 2021. In Figure C, we apply the compositional adjustment on a quarterly basis (March–May, June–August, September–November, December–February) to measure how wage growth differed at different times of the year.

Notes

1. McNicholas, Shierholz, and Poydock (2021) decompose the increase in the overall unionization rate between 2019 and 2020 and find that roughly half of the increase was a result of nonunion industries being more affected by the pandemic and about half was due to a lower rate of job loss among union workers than among nonunion workers in the same industry.

2. While we have slightly different specifications, wage measures, and time periods, the original inspiration for this work was Arin Dube's wage analysis published on Twitter (Dube 2022).

3. As noted in a later section, we exclude the 95th percentile due to topcoding issues. An explanation of topcoding and its implications for data reliability can be found in Gould, deCourcy, and Mokhiber 2022.

4. To be clear, price inflation has been driven by supply chain bottlenecks and energy price spikes, not by wage pressures in the labor market. Sectors in which inflation was high in 2021 are not the same sectors in which labor scarcity has put upward pressure on wages (Bivens 2022a). Because price inflation largely started from outside the labor market and has yet to bleed over into unsustainable real wage demands, policymakers should proceed cautiously in their response to inflation. An overreaction could slow down business investment and keep the economy from

quickly returning to full macroeconomic health (Bivens 2022b).

5. Throughout this report and in EPI's data library, we use regular wages—often referred to as straight-time pay—without overtime, tips, or commissions. If wages were measured including those additional pay components, there would be fewer workers below $15 an hour (about 27 million instead of 30 million) and more workers with pay above $50 an hour (about 16.5 million instead of 15 million). For consistency, we report our findings using straight-time pay. Given that low-wage workers are still disproportionately missing from the labor market at this point in the recovery, it is possible that these findings understate the number of low-wage workers.

6. EPI-developed Stata function to bin data and linearly interpolate percentiles: https://github.com/Economic/binipolate.

7. Local (moving) regression technique using nonparametric smoothing methods used to predict trends in scatterplot data: https://www.stata.com/manuals/rlowess.pdf.

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