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Recent Wages Trends and Issues

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SUMMARY

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Sarah A. Donovan
Specialist in Labor Policy

Recent Wages Trends and Issues

This report estimates real (inflation-adjusted) wage trends at the 10th, 50th (median), and 90th percentiles of the hourly wage distributions over the 2014-2024 period for the workforce as a whole and separately for selected worker groups. Overall, wage growth was strong at the selected percentiles but varied over the period, which notably included the COVID-19 pandemic.

Wages rose throughout the distribution in the years leading up to the pandemic, spurred in part by tightening labor market conditions. Growth rates increased further during the early pandemic period as disproportionate job loss among lower-wage workers temporarily altered the composition of employment and employers modified compensation and workplace policies in response to pandemic conditions. Job quit rates increased as workers sought out better opportunities, placing additional upward pressure on wages, including for workers in lower-paying jobs. Wage growth subsequently slowed but remained strong for workers at the 10th percentile through the post-pandemic period considered in this report. Persistent wage growth among lower-wage workers is a break from longer-term trends, and may be due in part to state laws that establish state minimum wage rates and increase them over time and unusually competitive conditions in some low-wage labor markets.

Wage levels were highest at each of the selected percentiles for men, White (non-Hispanic) workers and Non-Hispanic workers generally. The wage distributions for these groups were also more dispersed; this was because their median and 90th percentile wages were high relative to those of women, Black workers, and Hispanic workers. As in the aggregate workforce, wage growth was strong for each demographic group in the pre-pandemic and pandemic periods and particularly at the 10th percentile. Differences in demographic groups' wage levels and wage growth rates had implications for wage inequality over 2014-2024 period. For example, at the 10th percentile, Black workers' wages increased as a percentage of White workers' wages from 84.4% in 2014 to 87.0% in 2024.

Workers with at least a bachelor's degree continued to earn considerably more than workers with less schooling, and their wage distribution was more dispersed. Wage growth among relatively low earners (10th percentile) was strong in the pre-pandemic period for all education groups and increased during the pandemic. Wage growth at the 10th percentile remained strong only for high school-educated workers in the post-pandemic period. Median wages grew at higher rates during the pandemic, particularly for workers without a bachelor's degree, but decreased on average in the post-pandemic period. Wage growth at the 90th percentile increased for all education groups during the pandemic; it continued to be strong for bachelor's degree-holders in the post-pandemic period but declined for high-school educated workers and workers with some college or an associate's degree.

Wage patterns over the 2014-2024 period also varied by geography. Wage increases ranged from $1.90 in the West South Central Census Bureau division to $4.40 in the Pacific Division at the 10th percentile, from $1.90 (East South Central) to $4.30 (Mountain) at the median, and from $6.80 (West North Central) to $18.30 (Pacific) at the 90th percentile. In all divisions, wage growth was strongest at the 10th percentile, but differences in growth rates resulted in a widening of cross-divisional wage gaps in some cases. For example, the 10th percentile wage gap between the West South Central division and the Pacific division increased from $1.60 to $4.00 in constant 2024 dollars.

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Introduction

Wage earnings are the largest source of income for many workers, and wage gains are a primary lever for raising living standards. As such, evidence that long-term wage growth (since 1980) has stagnated among low- and middle-wage workers has been viewed with concern and raised questions about the patterns and drivers of these trends.[1] More recent wage trends, however, tell a somewhat different story.

Wages for adult workers (between the ages of 25 and 64) rose in real terms (i.e., as adjusted for inflation) throughout the wage distribution over the 2014-2024 period. The 10th percentile wage (i.e., lower-wage workers) grew in real terms over the period and had a higher rate of cumulative growth than wages at the 50th and 90th percentiles. While many factors affect wage patterns, recent wage growth at the bottom of the distribution has been attributed in part to rising state-level minimum wages and unusually competitive conditions in lower-wage labor markets.

Wage growth rates were not constant over the 2014-2024 period. Wages rose in the years leading up to the COVID-19 pandemic, spurred in part by tightening labor market conditions and increased further during the early pandemic period. Wage growth subsequently slowed overall, but remained strong for workers at the 10th percentile during the post-pandemic period.

This report explores hourly wage trends for adult workers over the 2014-2024 period as a whole, and during three subperiods centered around the COVID-19 pandemic. It opens with a discussion of labor market conditions over the period and how CRS selected the three subperiods for analysis. It then presents hourly wage trends and patterns in aggregate and for selected demographic groups and geographic regions. The report closes with a discussion of labor market factors that may have contributed to the observed trends.

Evolving Labor Market Conditions and Periods of Analysis

This report describes quarterly wage trends and patterns over the 2014-2024 period for workers at the 10th, 50th, and 90th percentiles of the hourly wage distribution.[2] To better observe the evolution of wage growth over this period, the report presents estimated wage growth rates for these percentiles during the following three subperiods:

- the *pre-pandemic period* from the first calendar quarter of 2014 (Q1-2014) to Q1-2020;[3]
- the *pandemic period* from Q2-2020 to Q2-2022[4]; and

[1] For more information, see CRS Report R45090, *Real Wage Trends, 1979 to 2019*, by Sarah A. Donovan and David H. Bradley

[2] Quarterly analysis allows changes in wages patterns to be observed within calendar years. Although the underlying data are collected on a monthly basis, CRS elected to conduct quarterly analysis to maintain sufficient sample sizes for wage estimates.

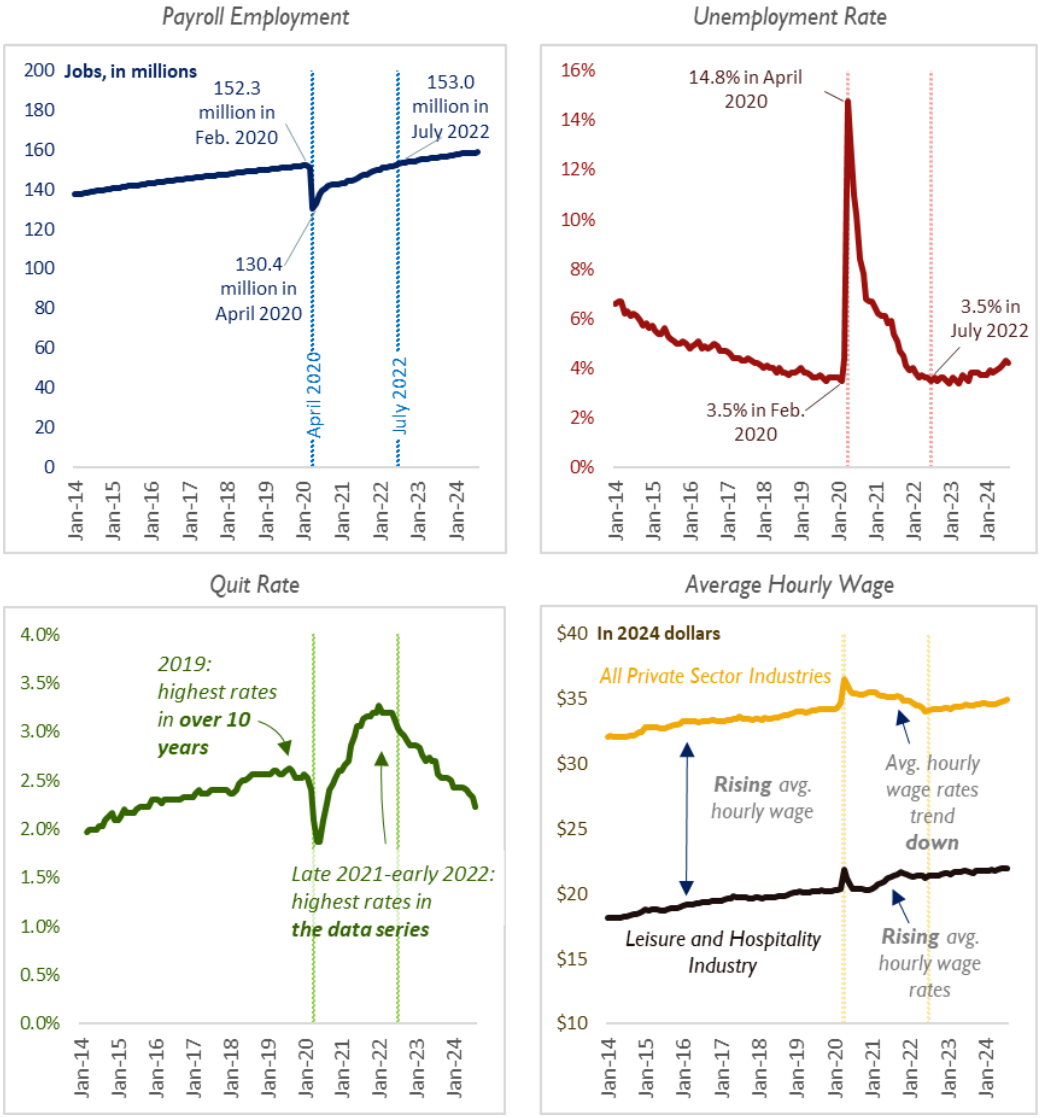
[3] This is the period leading up to the COVID-19 pandemic. Because the data are measured by quarter this period includes March 2020, which may capture some early labor market effects of the pandemic.

[4] These subperiods were selected based on both the timing of the pandemic and broad labor market patterns over 2014 to 2024. Officially, however, the federal public health emergency for COVID-19 expired on May, 11, 2023; see https://www.hhs.gov/coronavirus/covid-19-public-health-emergency/index.html. However, Centers for Disease Control and Prevention (CDC) data show that COVID-19-related deaths were considerably lower by July 2022; see https://covid.cdc.gov/covid-data-tracker/#trends_weeklydeaths_select_00.

- the *post-pandemic period* from Q3-2022 to Q4-2024.

These subperiods were selected based on both the timing of the pandemic and broad labor market patterns over 2014 to 2024 (**Figure 1**): a strong and tightening labor market in the pre-pandemic period, a period of considerable labor market disruption and recovery starting with the onset of the COVID-19 pandemic, and a return to more stable patterns starting around the middle of 2022 (the beginning of the post-pandemic period). (Additional discussion of labor patterns over these periods is in the text box "Labor Market Evolution over Three Periods.")

Figure 1. Selected Labor Market Indicators, 2014-2024



Source: CRS analysis of Bureau of Labor Statistics (BLS) data.

Notes: Data are seasonally adjusted. The average hourly wage of private sector employees is adjusted for inflation using the BLS Consumer Price Index for All Urban Consumer (CPI-U).

Labor Market Evolution over Three Periods

Figure 1 presents four headline labor market indicators published by the Bureau of Labor Statistics (BLS): (1) payroll employment (i.e., the number of jobs); (2) the national unemployment rate; (3) the quit rate, which measures workers' voluntary job separations; and (4) the average hourly wage for private sector workers, adjusted for inflation by CRS.

Pre-pandemic Period: Increasingly Tight Labor Market

Job numbers grew steadily over the Q1-2014 to Q1-2020 period—nearly 3 million jobs were added per year, on average, as the unemployment rate fell from 6.6% in January 2014 to 3.5% in February 2020. The job quit rate grew over the same period, suggesting that workers felt increasingly confident about their job prospects, and average hourly wages increased in real (inflation-adjusted) terms.

Pandemic Period: Massive Labor Market Disruption Followed by a Partial Rebound and Recovery

The onset of the COVID-19 pandemic dramatically decreased employment in early 2020 as businesses closed or reduced operations and consumer demand shifted away from in-person commerce. The swift decline in economic activity translated into widespread and massive job losses (22 million jobs were lost between March and April 2020, the largest one-month loss since the data series' start in 1939) and the economy fell into a brief but deep recession. Employment rebounded partially starting in May 2020, as many workers on temporary layoff were recalled and other non-employed workers found new jobs. The pace of employment growth slowed thereafter, and gradually approached pre-pandemic employment levels by early 2022.

Unemployment and quit rate patterns similarly illustrate a sharp downturn, followed by a relatively rapid recovery period. The unemployment rate jumped sharply to 14.8% in April 2020, followed by a quick and steady drop to 6.8% by October 2020 and to 3.6% in March 2022. The quit rate also rebounded quickly, but instead of returning to pre-pandemic trends, it continued to rise to its series high of 3.3% in November 2021. It fluctuated around that point until about May 2022, when it started to decline.

Average hourly wages spiked in April 2020, reflecting in large part the disproportionate loss of lower-wage jobs in the early months of the pandemic, and possibly higher wages paid by employers to compensate workers for increased health risks (i.e., hazard pay).[5] Average wages for private sector workers began a downward trend in June 2020 that lasted through June 2022. Wage trends during the pandemic period were not uniform across worker groups, however. As shown in **Figure 1**, average wages for leisure and hospitality workers (a lower-pay sector) trended upward over during most of 2021, whereas wages for private sector workers as a whole fell.

Post-Pandemic Period: A Readjusted Labor Market

Payroll employment reached its pre-pandemic level by June 2022 and has increased thereafter at more typical growth rates. Similarly, in July 2022 the unemployment rate dropped to its pre-pandemic rate of 3.5% and remained there until the middle of 2023, when it ticked upward slightly. The quit rate started to fall in May 2022 after peaking in November 2021 and fluctuating around that point in the ensuing months. Starting in mid-2022, average hourly wages grew at rates similar to the pre-pandemic period.

Recent Wage Trends and Wage Growth

Figure 2 illustrates real (inflation-adjusted) hourly wage growth trends for adult workers from 2014 through 2024, by percentile and calendar quarter.[6] The line graph on the left side of the figure shows cumulative wage growth at the 10th, 50th, and 90th percentiles since Q1-2014. The bar chart on the right presents average quarterly over-the-year wage growth for these percentiles within the pre-pandemic, COVID-19 pandemic, and post-pandemic periods.[7]

[5] See "Growth Rates During the Pandemic and Post-pandemic Periods" section of this report.

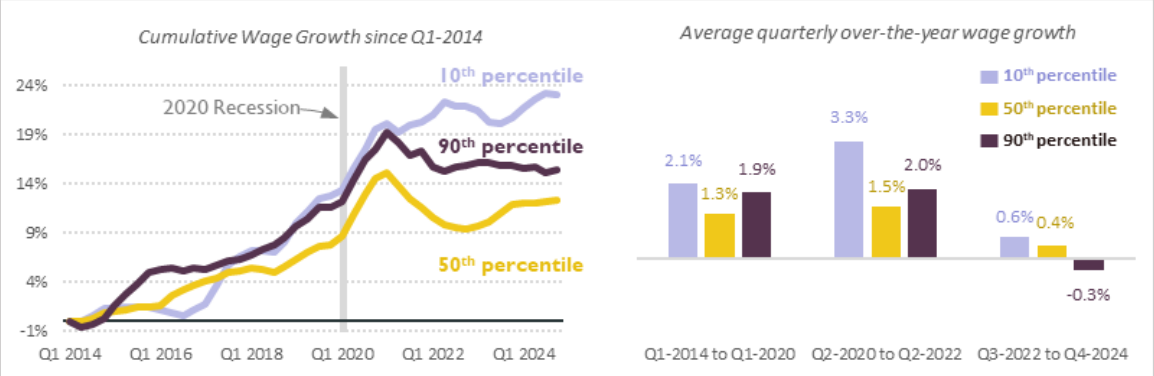
[6] Wage trends are estimated by CRS for employed, nonmilitary, nonfarm workers between the ages of 25 and 64. Data used in this report to analyze wage trends are largely cross-sectional and, for this reason, do not demonstrate wage patterns for a fixed set of workers. Individual workers can and often do move throughout the wage distribution over time, such that a worker at the 50th percentile in 2014 may be at a higher or lower percentile in subsequent years Additional discussion of the sample and estimated methods is in the **Figure 2**.

[7] Quarterly over-the-year growth measures the percentage change between a given quarter and *the same quarter in the previous year*; for example, $\frac{(Q_{1,2020}-Q_{1,2019})}{Q_{1,2019}}$.

Wages increased in real terms over the 2014 to 2024 period at each of the selected percentiles (**Figure 2**, left panel). Cumulative real wage growth was 23.0% (1.9% annualized) for workers at the 10th percentile of the wage distribution, 12.4% (1.1% annualized) for workers at the median, and 15.4% (1.3% annualized) for workers at the 90th percentile. In dollar terms, CRS estimates that the 10th percentile wage for the aggregate adult workforce increased from about $13.00 per hour in 2014 (about $26,000 per year for a full-time worker) to $16.00 per hour in 2024 (about $32,000 per year for a full-time worker).[8] Over the same period, the median adult wage increased from about $26.00 per hour to $29.00 per hour, and the 90th percentile wage for adult workers increased from about $61.00 per hour to nearly $70.00 per hour.

Wage growth patterns varied over the period and across the selected percentiles (**Figure 2**, right panel). At each of these percentiles, average real wage growth during the pandemic period was higher than in the pre-pandemic period, and considerably lower in the post-pandemic period. Average wage growth at the 10th percentile was relatively strong and outpaced average growth at the median and 90th percentile, especially during the pandemic.[9]

Figure 2. Real Wage Growth Rates at the 10th, 50th, and 90th Percentiles



Source: CRS estimates using Current Population Survey Outgoing Rotation Group data for 2014-2024.

Notes: Quarterly wage estimates are smoothed using a four-quarter moving average. Quarterly over-the-year growth measures the percentage change between a given quarter and *the same quarter in the previous year;* for example, $\frac{(Q_{1,2020}-Q_{1,2019})}{Q_{1,2019}}$. The data sample comprises 25- to 64-year-old workers, employed at the time of the survey in nonfarm, nonmilitary wage and salary jobs during the survey week, and who reported enough information to compute an hourly wage. Wage growth rates are based on inflation-adjusted wages. Wages are adjusted for inflation using the Bureau of Labor Statistics Current Price Index for All Urban Consumers (CPI-U); https://www.bls.gov/cpi/.

Wage Patterns for Selected Demographic Groups

Figure 3 presents real wage (level) trends for adult workers by demographic group, and illustrates differences in the levels and dispersion of wages.[10] Wage levels were highest at each of

[8] The conversion from hourly to annual earnings assumes 2,000 hours of employment per year. Hourly rates are rounded to the nearest dollar.

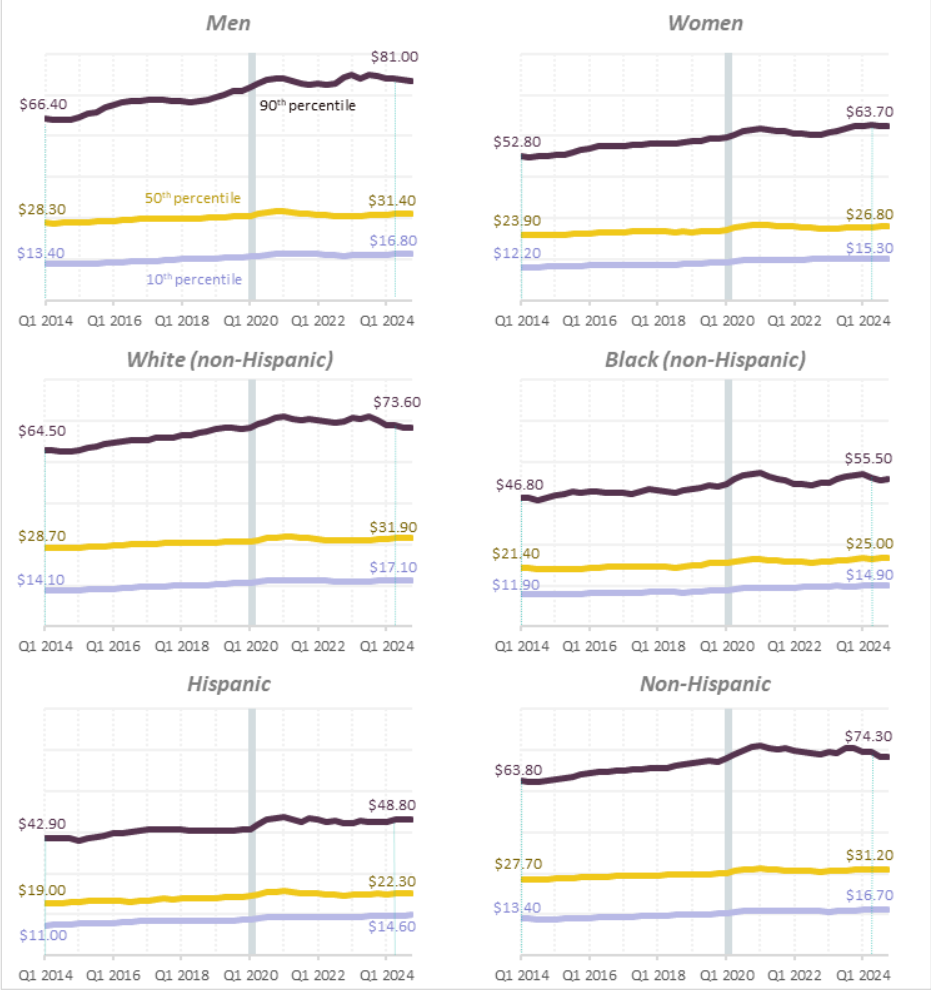
[9] The patterns shown in **Figure 2** are consistent with wage analyses using alternative data sources. For example, Federal Reserve Bank of St. Louis staff examined wage patterns using data from both the CPS and from Homebase, a private payroll company. Analysis of both sources indicate that "*wage growth peaked in 2022 and has since come down, although not to pre-pandemic levels*"; Maximiliano A. Dvorkin and Cassandra Marks, *Revisiting Wage Growth in 2023*, Federal Reserve Bank of St. Louis, On the Economy, January 8, 2024, https://www.stlouisfed.org/on-the-economy/2024/jan/revisiting-wage-growth-in-2023.

[10] Due to sample size limitations, not all demographic groups are included in this analysis.

the percentiles shown for men, White (non-Hispanic) workers and Non-Hispanic workers generally. Wage distributions for some groups were also more compressed than others, generally because the median and 90th percentile wages of such groups are relatively low.[11] This was the case for Black workers, Hispanic workers, and women. For example, whereas the gaps between the 90th and 10th percentiles (*90-10 gap*) in Q1-2024 were $56.50 and $57.60 for White workers and non-Hispanic workers respectively, they were $40.60 and $34.20 for Black workers and Hispanic workers. The 90-10 gap in Q1-2024 was $64.20 for men and $48.40 for women.

Figure 3. Real Wage Trends by Demographic Group

(wages are in 2024 dollars)



Source: CRS estimates using Current Population Survey Outgoing Rotation Group data for 2014-2024.

Notes: See notes at **Figure 2**. Gray bars indicate the 2020 recession.

[11] Lower variation at the 10th percentile may be influenced in part by the wage floor established by the federal minimum wage and state minimum wage laws.

Figure 4 presents quarterly wage trends and average wage growth over the pre-pandemic, pandemic, and post-pandemic periods for adult workers in the selected demographic groups. Similar to the aggregate labor market, high wage growth at the 10th percentile stands out. In some cases, however, growth patterns for individual subgroups did not mirror those for the aggregate workforce. For example, pandemic-period wage growth rates for Black (non-Hispanic) workers were elevated only at the 10th percentile, and post-pandemic wage growth was higher than pre-pandemic wage growth at the 10th and 50th percentiles, with little variation at the 90th percentile.

As in the aggregate workforce, strong relative wage growth at the 10th percentile narrowed the percentage wage gap between high (90th percentile) and low (10th percentile) earners within all demographic groups between 2014 and 2024, but groups varied by the degree of decreased inequality. However, with the exception of Hispanic workers, the percentage gap between the 90th percentile wage and the 50th percentile wage *increased* (i.e., wage growth among high earners continued to outpace wage growth for workers in the middle of the distribution).

Figure 4. Real Wage Growth Rates by Demographic Group

Source: CRS estimates using Current Population Survey Outgoing Rotation Group data for 2014-2024.
Notes: See notes at **Figure 2**. Gray bars indicate the 2020 recession.

Wage Gaps at Selected Percentiles

Differences in demographic groups' wage levels and wage growth rates—shown in **Figure 3** and **Figure 4**, respectively—had implications for wage inequality over the 2014-2024 period. These differentials are illustrated in **Figure 5**, which plots relative wage ratios at the 10th, 50th, and 90th percentiles for selected demographic groups (the gray dotted line in each figure illustrates the linear trend over the period).

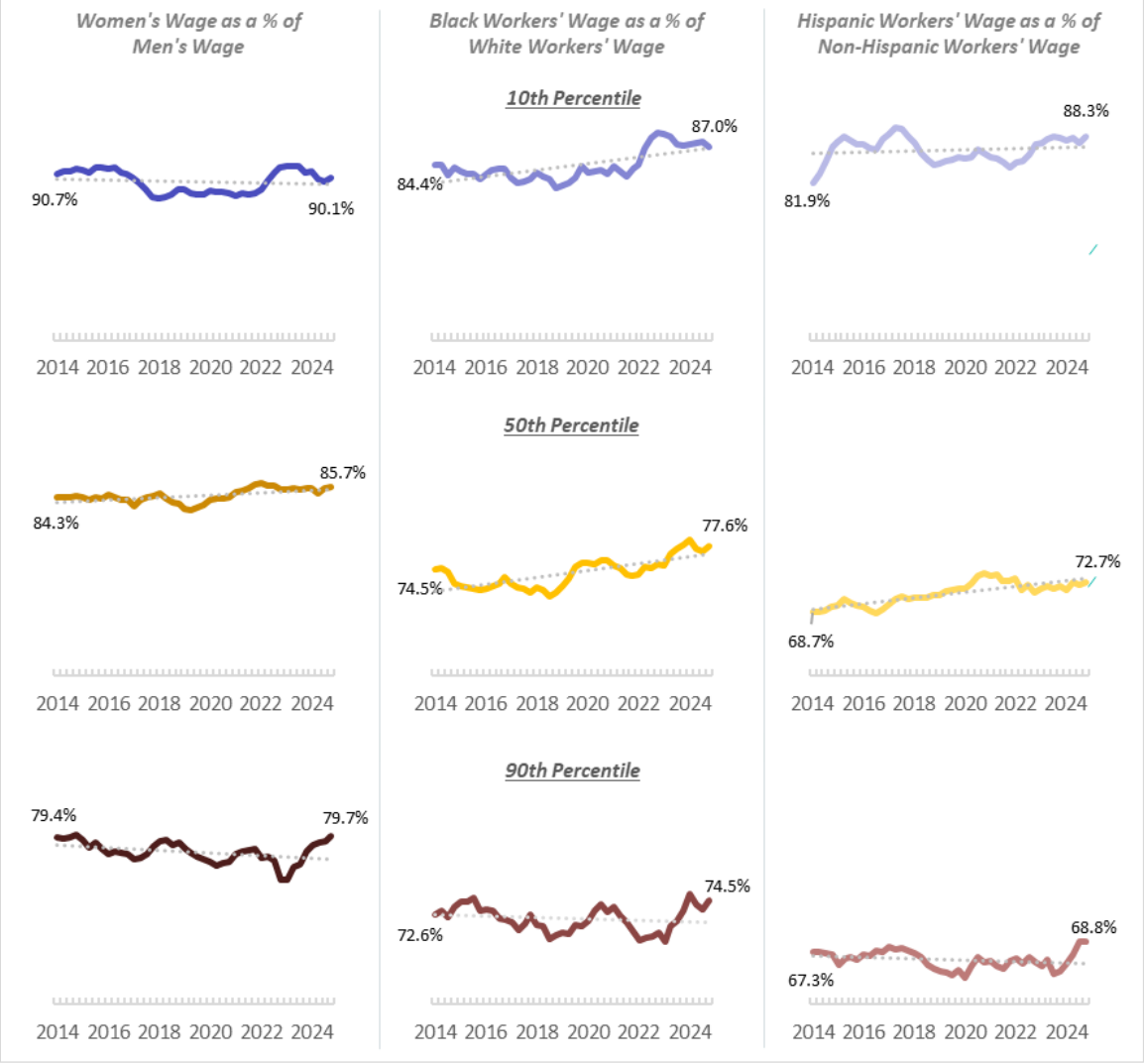
At the 10th percentile, Black workers' wages increased as a percentage of White workers' wages over the 2014-2024 period (from 84.4% to 87.0%), driven in large part by relative gains experienced by Black workers starting in 2022. Wage ratio trends at the 10th percentile for women (relative to men) and Hispanic workers (relative to non-Hispanic workers) were comparatively flat.[12]

Wage differentials at the median narrowed over the period, particularly for Hispanic workers and Black workers. Hispanic workers' median wage increased from 68.7% to 72.7% as a share of non-Hispanic workers' median wage, and Black workers' median wage increased from 74.5% to 77.6% as a share of White workers' median wage. The increase in women's median wage as a share of men's median wage was less pronounced.

Trends at the 90th percentile were slightly negative for each comparison group across the entire period, meaning that between-group inequality for high earners increased on average. Since 2023, however, the groups' relative wage ratios at the 90th percentile have increased; as a result, ratios in Q4-2024 were higher than in Q1-2014 for the selected comparison groups.

[12] Hispanic workers' 10th percentile wage increased from 81.9% to 88.3% as a share of non-Hispanic workers' 10th percentile wage. Much of this growth was concentrated in the 2014 to 2017 period and as a result the trend across the entire period is relatively flat.

Figure 5. Selected Wage Ratios, Q1-2014 to Q4-2024



Source: CRS estimates using Current Population Survey Outgoing Rotation Group data for 2014-2024.

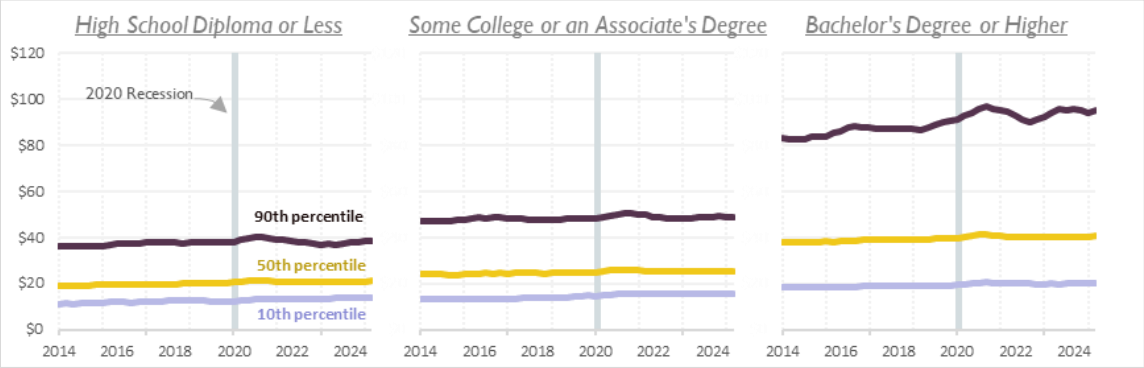
Notes: See notes at **Figure 2**. All graphics use the same scale: 60%-90% on vertical axis, and calendar quarters from Q1-2014 to Q4-2024 on the horizontal axis. A linear trendline is shown as a gray dotted line.

Wage Patterns by Education Level

Workers with at least a bachelor's degree earned considerably more than workers without a bachelor's degree (i.e., workers with some years of college or an associate's degree, or workers who did not extend their education beyond high school), and their wage distribution was more dispersed (**Figure 6**). In Q1-2024, wages for top earners (90th percentile) with at least a bachelor's degree ($95.70 per hour) were nearly double those of their counterparts with some college ($49.10 per hour) and more than double those with a high school diploma or less schooling ($37.90 per hour).[13] The dispersion of wages, as measured by the gap between the 90th percentile wage and the 10th percentile wage was $75.70 for college-educated workers,[14] $33.60 for workers with some college but not a bachelor's degree, and $24.00 for workers with a high school diploma or less education.

Figure 6. Real Wage Trends by Highest Level of Education

(wages are in 2024 dollars)



Source: CRS estimates using Current Population Survey Outgoing Rotation Group data for 2014-2024.

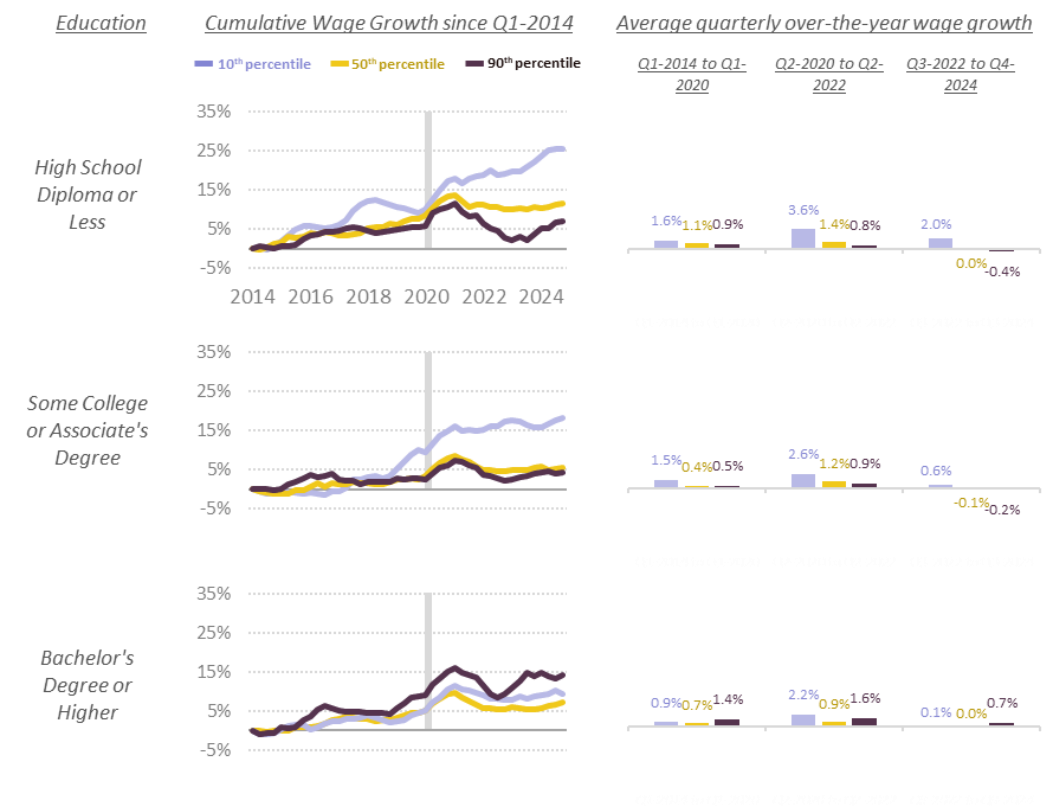
Notes: See notes at **Figure 2.**

[13] The median wage in Q1-2024 was $40.00 for college-educated workers, $25.50 for workers with some college but not a four-year degree, and $20.80 for workers with a high school diploma or less education. At the 10th percentile the wage rates were $20.00, $15.50, and $13.90 for workers in these education groups, respectively.

[14] The wage gap between the 90th and 10th percentiles for workers who ended their education after completing a bachelor's degree was $64.50 (=$83.50-$19.00) in Q1-2024; for workers with an advanced degree the gap was $75.60 (=$98.60-$23.00).

Echoing the trends for demographic groups discussed in the previous section, 10th percentile wage growth was relatively strong in the pre-pandemic period for all education groups and increased during the pandemic (**Figure 7**). During the post-pandemic period, wage growth at the 10th percentile remained strong only for high-school-educated workers. Median wages grew at higher rates during the pandemic, particularly for workers without a bachelor's degree, but decreased on average in the post-pandemic period. Wage growth at the 90th percentile increased during the pandemic for workers who continued their education past high school. It continued to be positive for bachelor's-degree-holders in the post-pandemic period, but declined on average for both other groups of workers.

Figure 7. Real Wage Growth by Highest Level of Education



Source: CRS estimates using Current Population Survey Outgoing Rotation Group data for 2014-2024.

Notes: See notes at **Figure 2.** Gray bars indicate the 2020 recession.

Wage Patterns by Census Division

The section considers how recent wage patterns varied by geography, as measured by the nine Census Bureau divisions. The divisions are geographically proximate groups of states[15] that were selected by the Census Bureau to be "units that are roughly similar in terms of historical development, population characteristics, economy, and the like" with the goal of providing "a larger geographic framework for comparative statistical analysis."[16] While providing a broad

[15] A map of Census Bureau division is at https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf.

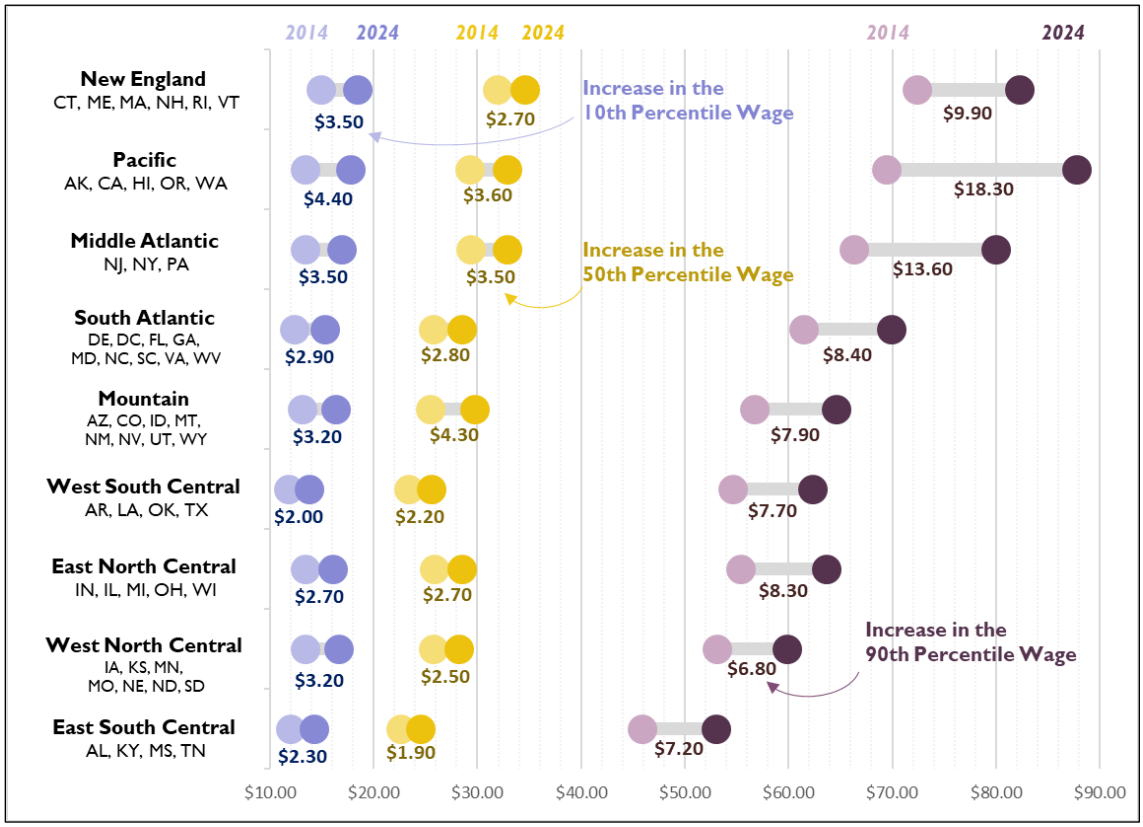
[16] Census Bureau, *Geographic Areas Reference Manual*, Chapter 6, 1994, https://www2.census.gov/geo/pdfs/reference/GARM/Ch6GARM.pdf.

basis for geographic comparison, there are potentially wide variations in social, economic, and policy factors relevant to wage patterns within them (e.g., composition of employment, economic policies and environment, labor market institutions).[17] This section does not attempt to adjust estimates for such differences.

Wage distributions and wage growth trends over the 2014-2024 period varied across Census divisions. These differences are illustrated in **Figure 8**, which plots wage levels at the selected percentiles in Q1-2014 and Q1-2024 for each division, and shows the change in wages (in constant 2024 dollars) at the selected percentiles over the same period. Wage increases ranged from $2.00 in the West South Central Census Bureau division to $4.40 in the Pacific Division at the 10th percentile, from $1.90 (East South Central) to $4.30 (Mountain) at the median, and from $6.80 (West North Central) to $18.30 (Pacific) at the 90th percentile.

Figure 8. Wages by Selected Percentile and Census Division, Q1-2014 and Q1-2024

(wages are in 2024 dollars)



Source: CRS estimates using Current Population Survey Outgoing Rotation Group data for 2014 and 2024.

Notes: See notes at **Figure 2.** Census divisions are sorted by the gap between the 10th percentile wage and 90th percentile wage in 2014. The change in wages between 2014 and 2024 is rounded to the nearest $0.10.

[17] For example, workers in Middle Atlantic division states (New Jersey, New York, and Pennsylvania) are entitled to different state minimum wage rates.

Cumulative wage growth over the 2014-2024 period was strongest at the 10th percentile in all divisions, but these growth rates varied by location: from 17% (West South Central) to 33% (Pacific). Consequently, wage gaps between divisions for lower-wage workers increased. For example, the 10th percentile wage gap between the West South Central division and the Pacific division increased from $1.60 in 2014 to $4.00 in 2024.

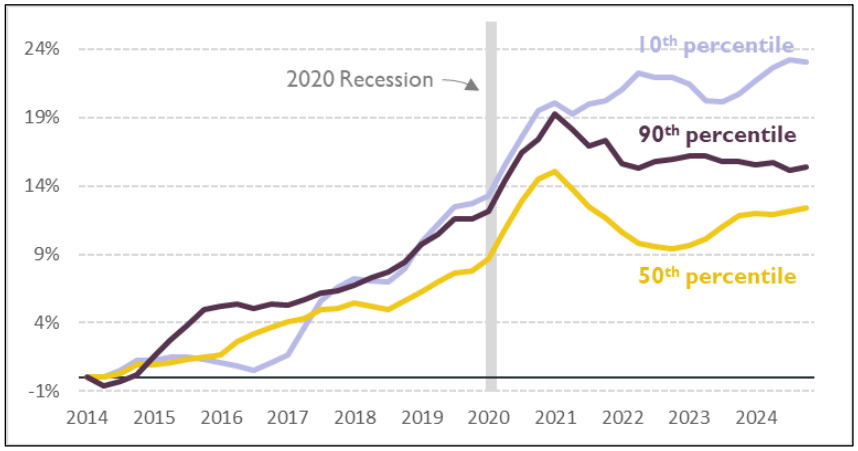
Factors Influencing Prominent Wage Trends

Two patterns from the wage trends presented in the previous sections of this report are (1) the general increase in wage growth during the pandemic period, particularly in its early months, coupled with lower rates in the post-pandemic period; and (2) relatively strong and persistent wage growth among lower-wage workers. This section considers some potential drivers for these two patterns, but does not attempt to quantify or assess the relative contribution of factors.[18]

Growth Rates During the Pandemic and Post-pandemic Periods

Wage growth rates increased across the wage distribution during the COVID-19 pandemic, with a marked rise in its early months. This elevated growth was temporary at the 90th and 50th percentiles, but continued for lower-wage workers through the post-pandemic period (**Figure 9**). The marked rise in wage growth for each percentile during the first year of the pandemic and almost mirror-image decline in subsequent months is particularly visible, especially for the 50th and 90th percentile wages, and reflects in part the rapid change in employment composition in the early pandemic. Change in pay practices and work arrangements may also have played a role.

Figure 9. Cumulative Real Wage Growth for Selected Percentiles, 2014-2024



Source: CRS estimates using Current Population Survey Outgoing Rotation Group data for 2014-2024.
Notes: See notes at **Figure 2**.

[18] This report does not provide a comprehensive discussion of factors affecting wages. In general, individual wages are determined by the interaction of several forces, such as workers' skills and their value to employers, job match quality, and relative bargaining power. Discussions of wage determinants are in CRS Report R45090, *Real Wage Trends, 1979 to 2019*, by Sarah A. Donovan and David H. Bradley and CRS Report R44705, *The U.S. Income Distribution: Trends and Issues*, by Sarah A. Donovan et al.

The Impact of the Pandemic on Employment Composition

The number of jobs dropped sharply in the early months of the COVID-19 pandemic, followed by a quick partial recovery and then a more gradual return to pre-pandemic numbers (**Figure 1**). Although job loss was widespread, some sectors were more affected than others and uneven losses changed the composition of employment (**Figure 10**).[19] Industries with high job losses generally involved in-person services or commerce in group settings, which were discouraged by public health guidance or restricted by state laws in the early months of the pandemic.[20]

The differential patterns of job gains and losses matter to the wage distribution because large and persistent losses occurred in lower-paying industries.[21] Together, establishments in the leisure and hospitality, social and civic organizations, health services (including child care), mining and logging, personal care services, and education services industries had net losses of nearly 1.5 million jobs (618,000 jobs on average per year) between February 2020 and July 2022. Of those net job losses, about 81% were in industries with average hourly wages below the overall average of $28.55 in February 2020. For example, the average hourly wage for the leisure and hospitality industry (409,000 net jobs lost on average per year) was $16.90 in February 2020. Mathematically, the disproportionate loss of lower-wage workers will cause the overall average wage rise, even if individual wage offers to the remaining workforce have not increased, and will shift some percentiles upward.[22]

Job growth bounced back in several industries late in the pandemic and in the post-pandemic period. Annual average gains in the education and health services and leisure and hospitality industries were both particularly strong.

[19] Matthew Dey and Mark A. Loewenstein, How many workers are employed in sectors directly affected by COVID-19 shutdowns, where do they work, and how much do they earn?, BLS, Monthly Labor Review, April 24, 2020, https://www.bls.gov/opub/mlr/2020/article/covid-19-shutdowns.htm.

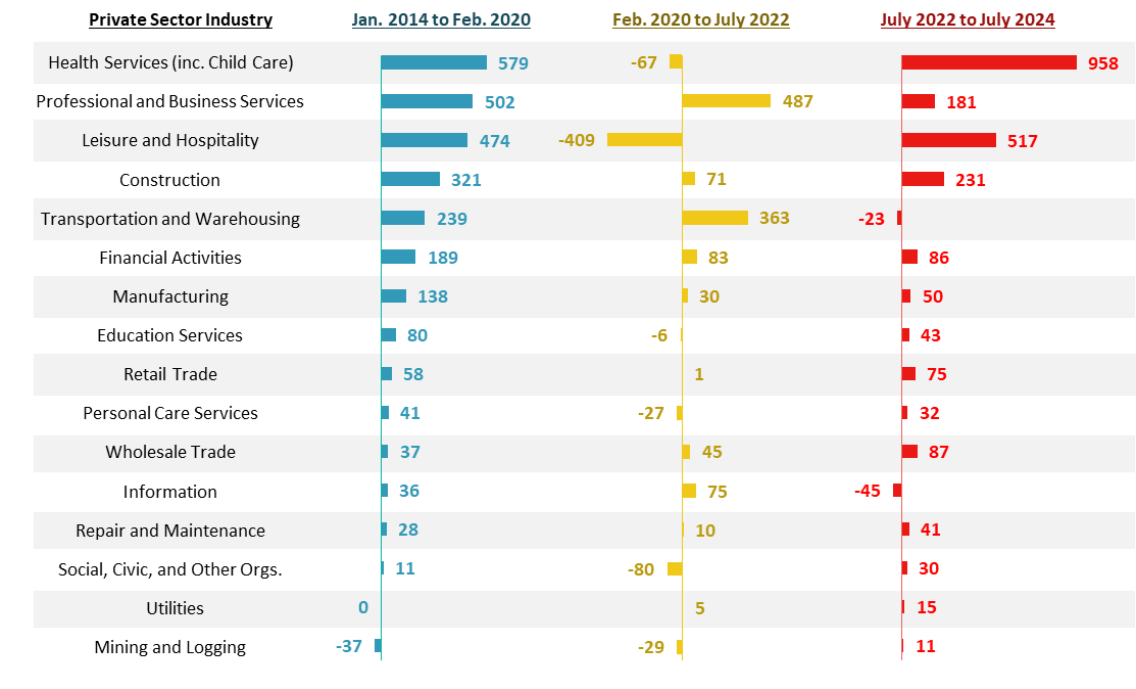
[20] Annual job gains continued during the pandemic in other industries, but largely at levels below those in the pre-pandemic period. Exceptions were the professional and business services sector, which continued to grow a rate similar to earlier periods, and transportation and warehousing, which had higher job growth.

[21] The Federal Reserve Bank of Atlanta's Wage Growth Tracker estimates the median rate of wage growth based on the percentage change in the hourly wage of workers observed 12 months apart. This method (i.e., restricting estimates to workers who were employed during both observations) provides some degree of control for employment composition. The estimates produced by the Tracker of median rates of wage growth do not show a marked increase in the early months of the pandemic. See Federal Reserve Bank of Atlanta, "Wage Growth Tracker," https://www.atlantafed.org/chcs/wage-growth-tracker.

[22] Increases in the overall average wage may also reflect other forces such as rising worker productivity or labor market competition (i.e., employers' efforts to draw in workers with higher pay).

Figure 10. Average Net Annual Job Growth by Industry for Selected Periods

(annual average job changes measured in thousands)



Source: CRS analysis of BLS data from the Current Employment Survey program.

Notes: Data are for private, non-farm industries. Industries are sorted by annual average job growth from January 2014 to February 2020.

Increased Pay in Response to the Pandemic

Wage growth during the pandemic may also reflect a change in compensation practices among some employers. According to the results of a special BLS survey, 14.5% of private sector establishments (20.5% of all private-sector employment) reported in 2021 that they had increased workers' base wages or salaries in response to the pandemic, and 5.5% of establishments (15.7% of all private-sector employment) had established a temporary hourly wage premium for work performed during pandemic (e.g., hazard pay or "hero" pay).[23] Base wage increases were more common in some industries than others (e.g., 34.3% of accommodation and food service establishments reported base pay increases in 2021).[24] Hazard pay was particularly prevalent in the health care and social assistance sector (12% of establishments in 2021) and accommodation and food services (11.4% of establishments in 2021).[25] BLS has not updated this particular set of estimates, but some industry estimates and worker reports suggest that pandemic era pressures have eased to some extent and employers have reduced pay for some jobs more recently.[26]

[23] BLS, *U.S. Business Response to the COVID-19 Pandemic—2021*, USDL-22-0190, February 9, 2022, https://www.bls.gov/news.release/covid2.nr0.htm. Information on the BLS Business Response Survey program is at https://www.bls.gov/brs/.

[24] BLS, Business Response Survey 2021 Tables, Table 34 (Result ID 5.1), https://www.bls.gov/brs/data/tables/2021/.

[25] BLS, Business Response Survey 2021 Tables, Table 37 (Result ID 5.2), https://www.bls.gov/brs/data/tables/2021/.

[26] Alex Christian, "US salaries are falling. Employers say compensation is just 'resetting'," *BBC*, March 7, 2024, https://www.bbc.com/worklife/article/20240306-slowing-us-wage-growth-lower-salaries. The slowdown in growth (continued...)

Telework

Many workplaces responded to the COVID-19 pandemic by shifting from in-person to remote work.[27] This practice stabilized employment for large shares of workers during the pandemic but telework was not equally available across occupations. For example, BLS reported that managers and professionals made up about 45% of employment in May 2020 and nearly 74% of those who teleworked due to the pandemic in that month; in contrast, service workers made up almost 14% of employment but only about 3% of those who teleworked for pandemic-related reasons.[28] While many workers returned to the office late in the pandemic and during the post-pandemic period, at least for some days per week, elevated telework has persisted.[29]

Workers' continued demand for telework (including fully remote work in some cases) may have affected wage growth—particularly in the top half the distribution, where such work arrangements are more available. In particular, workers' preference for such work may have allowed some employers to recruit from a wider geographic area, perhaps providing some slack to firm-level labor markets and allowing employers to engage workers residing in lower cost of living areas.[30] In addition, some workers with strong preferences for remote or hybrid arrangements may be willing to take lower compensation or accept lower wage growth as a tradeoff.

Elevated Wage Growth Among Low-Wage Workers

Another prominent trend was the strong and persistent wage growth among lower-wage workers over the entire 2014-2024 period. The 10th percentile wage grew in real terms over the period and had a higher rate of cumulative growth than the 50th and 90th percentiles starting in 2019 (**Figure 9**). This pattern is a notable break from longer-term trends. As illustrated in **Figure 11**, the 10th percentile wage declined in real terms from 1980 to the mid-1990s, after which point tight labor market conditions helped raise wages throughout the distribution into the early 2000s; annual average wage growth in the bottom half of the distribution slowed until 2013. Cumulative wage

visible in survey data is also consistent with reports that employers have lowered pay in some positions and recent poll results indicating a growing dissatisfaction among some workers about their pay. Luona Lin, Juliana Menasce Horowitz, and Richard Fry, *Most Americans Feel Good About Their Job Security but Not Their Pay*, Pew Research Center, December 10, 2024, https://www.pewresearch.org/social-trends/2024/12/10/most-americans-feel-good-about-their-job-security-but-not-their-pay/.

[27] Some workplaces also increased other workplace flexibilities, such as flexible or staggered work hours (24.6% of private sector establishments). BLS, *U.S. Business Response to the COVID-19 Pandemic—2021*, USDL-22-0190, February 9, 2022, https://www.bls.gov/news.release/covid2.nr0.htm.

[28] BLS estimates that in May 2020, more than 35% of employed workers teleworked *specifically* because of the pandemic (i.e., the statistic excludes workers who teleworked for other reasons). See BLS, *Measuring the impact of the COVID-19 pandemic on the labor market*, https://www.bls.gov/cps/covid-may2020-sept2022-data-tables.htm. As noted, these estimates exclude those whose telework was unrelated to the pandemic (e.g., workers who teleworked exclusively prior to the pandemic). BLS, Supplemental data measuring the effects of the coronavirus (COVID-19) pandemic on the labor market, https://www.bls.gov/cps/effects-of-the-coronavirus-covid-19-pandemic.htm#concepts. These patterns are consistent with occupational access to telework before the pandemic; see https://www.bls.gov/opub/mlr/2020/article/ability-to-work-from-home.htm.

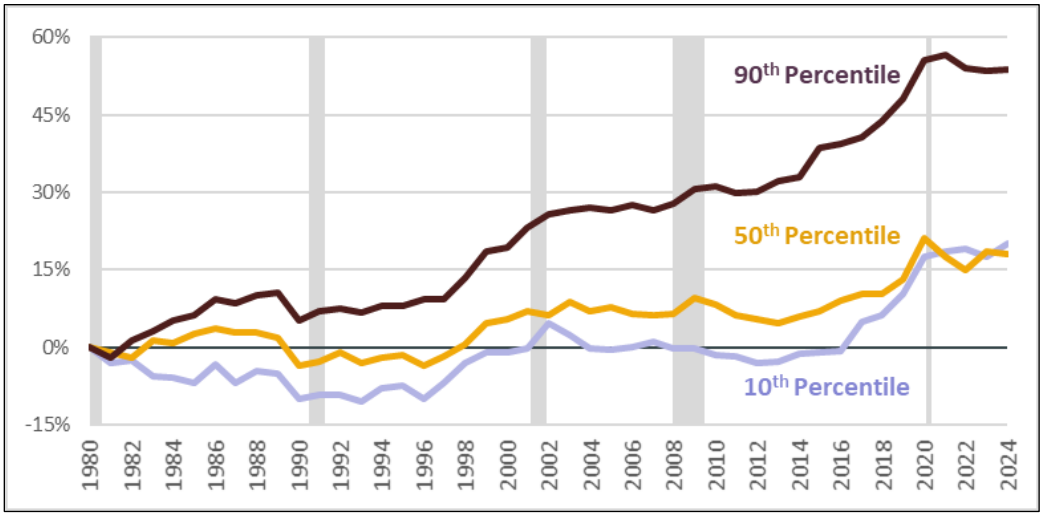
[29] BLS estimates that 23.7% of workers teleworked for at least some portion of their work time in September 2024. See the BLS data series at https://data.bls.gov/timeseries/LNU0201B46B .

[30] See discussions in Jose Maria Barrero, Nicholas Bloom, and Steven J. Davis, *The Evolution of Work from Home*, NBER Working Paper 31686, September 2023, https://www.nber.org/papers/w31686; and Jose Maria Barrero et al., *The Shift to Remote Work Lessens Wage-Growth Pressures*, NBER Working Paper 30197, July 2022, https://www.nber.org/papers/w30197.

growth at the 10th percentile was lower than wage growth at the 50th and 90th percentiles over the entire 1980 to 2013 period.

Figure 11. Cumulative Real Wage Growth for Selected Percentiles, 1980-2024

annual average estimates



Source: CRS estimates using Current Population Survey Outgoing Rotation Group data for 1980-2024.

Notes: See sample notes at **Figure 2**. The figure presents annual average estimates. Periods of economic recession are shaded in gray.

Workers' ability to leverage their productive capacity into higher wages depends on their bargaining power, which in turn is determined by market factors (e.g., labor scarcity, worker mobility, labor market imperfections) and wage-setting institutions like the minimum wage and social norms regarding compensation. The results of some studies suggest that wage gains for lower-paid workers since 2014 may reflect recent shifts in such factors, namely state minimum wage policy and market conditions that affect the balance of employers' and workers' bargaining power.[31]

State Minimum Wages

Although the federal minimum wage has not increased since it was set by Congress at $7.25 per hour in 2009, many states have enacted minimum wage rates above the federal rate and increased their minimum wage rates over the 2014-2024 period.[32] **Figure 12** shows that the number of states with minimum wage rates above $7.25 per hour increased from 24 to 30 between 2014 and 2015, and to 31 by 2021, where it has remained since that time.[33] Many, but not all, of these states also implemented annual rate adjustments causing the average state minimum wage (in states

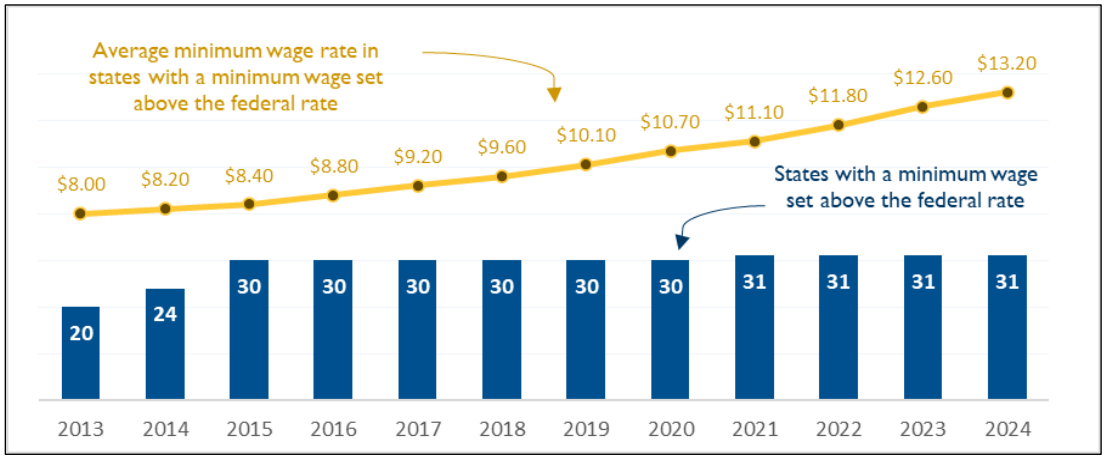
[31] See discussion in the "State Minimum Wages" and "Increased Competition for Workers in Traditionally Lower-Wage Sectors" sections of this report.

[32] For more information, see CRS Report R43792, *State Minimum Wages: An Overview*, by Sarah A. Donovan and Ellen M. Lechman .

[33] In addition, several large U.S.-based companies—including Amazon, Walmart, Target, CVS, and Costco—adopted voluntary company-wide minimum wage policies over the 2014-2024 period. An analysis of these policies and their employment and wage impacts is in Ellora Derenoncourt and David Weil, *Voluntary Minimum Wages*, National Bureau of Economic Research, Working Paper No.32546, June 2024, https://www.nber.org/papers/w32546. The authors estimate that such policies applied directly to over 3 million jobs between 2014 and 2023; they did not find evidence that the voluntary minimum wage policies affected wage-setting policies among local competitors.

with a higher minimum wage) to rise from $8.20 per hour in 2014 to $13.20 per hour in 2024 (i.e., 61% cumulative growth in the state minimum wage, [4.9% growth annualized]). This increase in state minimum wage rates is most meaningful to workers in lower-wage jobs (i.e., those employed at or near the federal or applicable state minimum wage), with some potential for spillover.[34]

Figure 12. Number of States with Minimum Wage Rates Above the Federal Minimum Wage Rate and Average Minimum Wage Rates in Those States



Source: CRS analysis of U.S. Department of Labor data and information published to state government websites, multiple years.

Notes: The figure shows the unweighted average wage rate in states (including Washington DC) with a minimum wage set above the federal rate. Some, but not all, states included in this figure have adopted mechanisms for adjusting state minimum wage rates over time. Average wage rates are rounded to the nearest $0.10.

Figure 13 illustrates a potential correlation between state minimum wage policy and wage growth for workers at the bottom of the wage distribution.[35] The figure plots cumulative real wage growth relative to Q1-2020 at selected percentiles for states with hourly minimum wage rates above the federal minimum wage rate in 2019 (left panel) and states in which the federal minimum wage is the wage floor (right panel). The figure shows, for example, that the 10th percentile wage in states with a minimum wage set above the federal rate increased by nearly 10% between Q1-2020 and Q1-2021, while it increased by about 4.2% in states in which the federal minimum wages is the wage floor.

Prior to the pandemic, 10th percentile wage growth (relative to Q1-2020) was higher in states with an hourly wage minimum wage above the federal rate; the growth rate for this percentile was higher both in absolute terms and relative to growth at the 50th and 90th percentiles.[36] Wage

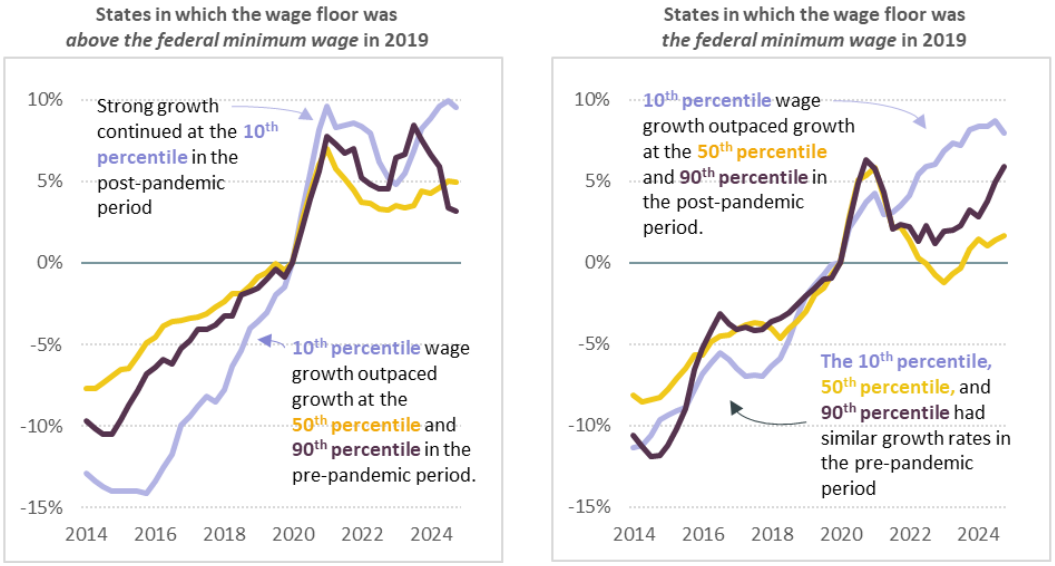
[34] A discussion of related literature and original analysis is in Eliza Forsythe, "The Effect of Minimum Wage Policies on the Wage and Occupational Structure of Establishments," *Journal of Labor Economics*, vol. 41, no. S1 (2023).

[35] This section does not attempt to measure or suggest a causal impact of state minimum wage policy on wage growth. As pointed out by others, a state's ability to pass minimum wage legislation may be influenced by the presence of already strong labor market conditions. State minimum wage policies may also be adopted alongside other policies affecting wages, further complicating the identification of causal effects. See, e.g., Ryan Nunn and Jay Shambaugh, *Whose wages are rising and why?*, Brookings Institute, January 21, 2020, https://www.brookings.edu/articles/whose-wages-are-rising-and-why/.

[36] Some research documents higher rates of growth at the 10th percentile for workers in states with minimum wage increases. See, for example, Elise Gould, *Wage Growth for Low-Wage Workers Has Been Strongest in States with* (continued...)

growth at the 10th percentile continued in both groups of states in the post-pandemic period, but 10th percentile wage growth outpaced growth at the 50th and 90th percentiles to a greater extent in states where the federal minimum wage is the wage floor. Together, these patterns suggest that while state-level minimum wage policies may have played a role in supporting growth at the bottom of the distribution over the 2014-2024 period overall, other drivers have also contributed to recent wage trends, particularly late in the pandemic and in the post-pandemic period.

Figure 13. Cumulative Real Wage Growth (Relative to Q1-2020) at Selected Percentiles by State Minimum Wage Rates



Source: CRS estimates using Current Population Survey Outgoing Rotation Group data for 2014-2024.

Notes: See notes at **Figure 2.** States with an hourly wage floor of $7.25 in 2019 had the same floor in 2024, with one exception (Virginia, which increased its state minimum wage from $7.25 to $9.50 per hour in 2021).

Increased Competition for Workers in Traditionally Lower-Wage Sectors

Many workers reconnected with their employers or found other work within a few months of the pandemic's onset: by September 2020 more than half of jobs lost in April 2020 had been recovered and jobs gains continued thereafter at a more gradual pace.[37] At the same time job quit rates were on the rise, including in lower-paying industries, and employers faced an increasingly tight labor market.[38]

Minimum Wage Increases, Economic Policy Institute, Economic Snapshot, March 2019, https://www.epi.org/publication/wage-growth-for-low-wage-workers-has-been-strongest-in-states-with-minimum-wage-increases/. However, not all researchers agree that minimum wage policy explains this trend. Michel and Nix argue that minimum wage increases were not implemented in isolation, and that wage growth may be due to policies implemented simultaneously (e.g., corporate tax cuts). Adam Michel and Travis Nix, *No, Wages are Not Rising Because of Minimum Wage Laws*, Heritage Foundation, Commentary: Wage and Jobs, August 13, 2019, https://www.heritage.org/jobs-and-labor/commentary/no-wages-are-not-rising-because-minimum-wage-laws.

[37] The overall number of jobs returned to pre-pandemic levels in June 2022.

[38] Quit rates in each industry were higher in the 12-month period following the 2020 recession than they were in the 12-month periods following the 2001 and 2007-2009 recessions. See Figure 13 and the related discussion in CRS Report R47047, *Job Openings and Labor Turnover Before and During the COVID-19 Pandemic*, by Paul D. Romero, Isaac A. Nicchitta, and Sarah A. Donovan; and CRS Insight IN11770, *Labor Market Tightness and the Economic Recovery, Part 1*, by Marc Labonte and Lida R. Weinstock.

Elevated quit rates raised some concerns about a cultural shift in workers' attitudes about work, with some observers declaring "a Great Resignation."[39] However ongoing job growth and rising labor force participation suggested that most workers were not permanently exiting the labor market, but were quitting their jobs to take up better work opportunities (i.e., a "Great Reshuffling" of workers).[40] Workers' ability to do so was supported by increasingly competitive labor markets (i.e., increased competition among employers for workers) and perhaps a greater willingness to change jobs, which together increased workers' job prospects.[41] These reallocation patterns are illustrated broadly in **Figure 14**, which shows the concurrent rise in job quit rates, workers' movement to new employers, and particularly high wage growth for job movers.

Research suggests that these patterns may be relevant to explaining post-pandemic wage patterns for lower-wage workers, some of whom were able to increase their hourly wage by moving from lower- to higher-paying jobs, and in some cases moving to higher-paying industries.[42] This was especially true for young workers without a college degree, whose employment has traditionally been concentrated in lower-paying jobs with less career mobility. As a result, wages toward the bottom of the wage distribution increased in both absolute terms and relative to middle- and higher-paying jobs.

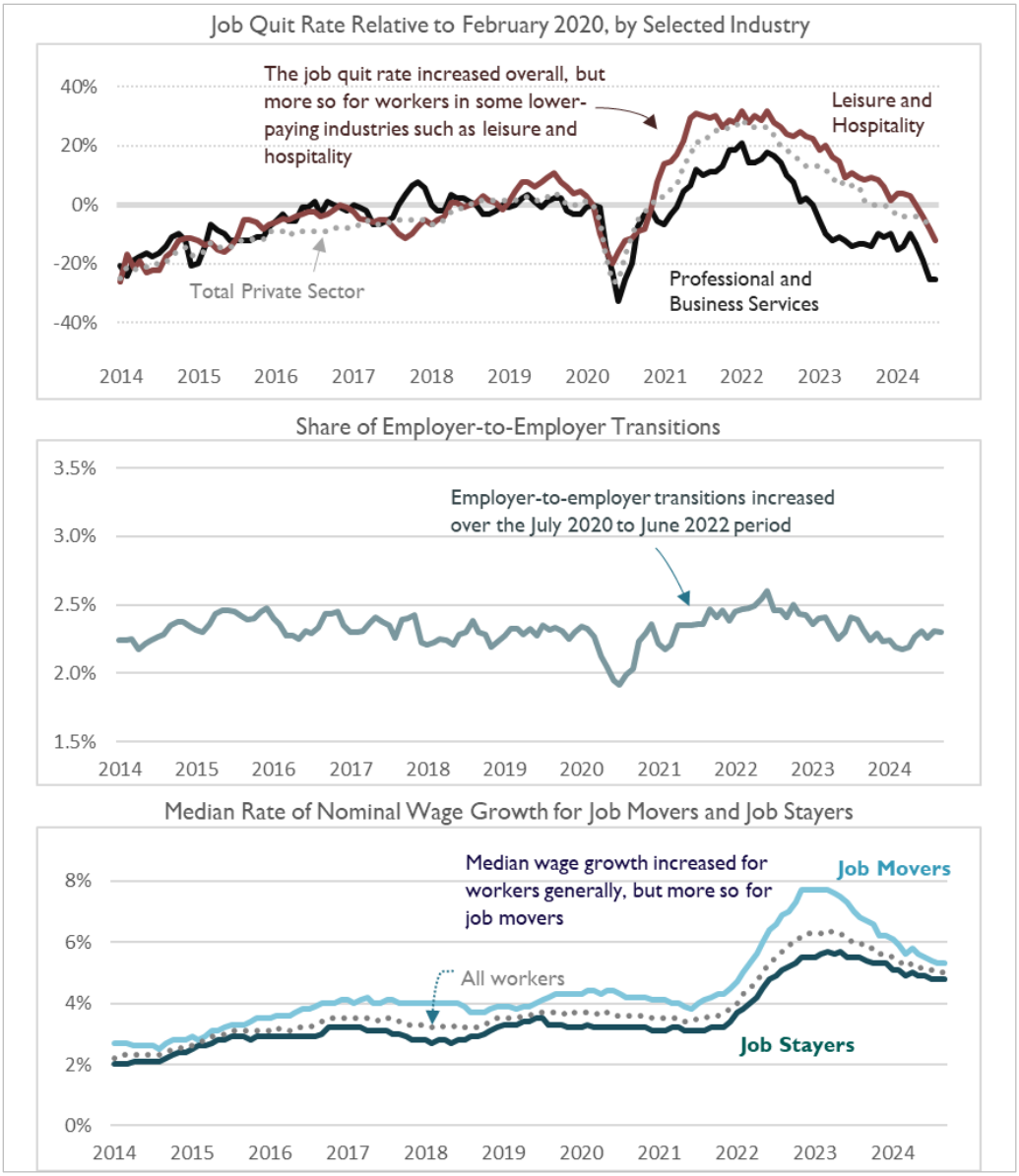
[39] Chris Westfall, "'No One Wants to Work': The Why Behind the Great Resignation," *Forbes*, January 20, 2022, https://www.forbes.com/sites/chriswestfall/2022/01/19/no-one-wants-to-workthe-why-behind-the-great-resignation/.

[40] A 2022 Pew Research Center survey found that "low pay, a lack of opportunities for advancement and feeling disrespected at work are the top reasons why Americans quit their jobs last year. The survey also finds that those who quit and are now employed elsewhere are more likely than not to say their current job has better pay, more opportunities for advancement and more work-life balance and flexibility." Kim Parker and Juliana Menasce Horowitz, *Majority of workers who quit a job in 2021 cite low pay, no opportunities for advancement, feeling disrespected*, Pew Research Center, Short Reads, March 9, 2022, https://www.pewresearch.org/short-reads/2022/03/09/majority-of-workers-who-quit-a-job-in-2021-cite-low-pay-no-opportunities-for-advancement-feeling-disrespected/. See also Hubert Janicki, *How the COVID-19 Pandemic Prompted More People to Change Jobs*, Census Bureau, May 13, 2024, https://www.census.gov/library/stories/2024/05/great-reshuffling.html.

[41] That tight labor market conditions may improve wage outcomes for lower-wage workers is supported by economic theory and empirical research; see e.g., Stephanie Aronson, Mary C. Daly, and William Wascher, et al., *Okun revisited: Who benefits most from a strong economy?*, Brookings Institute, March 7, 2019, https://www.brookings.edu/articles/okun-revisited-who-benefits-most-from-a-strong-economy/.

[42] See research by David Autor, Arindrajit Dube, and Annie McGrew, *The Unexpected Compression: Competition at Work in the Low Wage Labor Market*, NBER Working Paper 31010, May 2024, https://www.nber.org/papers/w31010. Another research team found "evidence of increased movements out of low-skilled service jobs and towards professional occupations and other areas that tend to be both higher paying and offer lower exposure to health risks." They offer that high retirement rates during the pandemic may have facilitated such reallocation of workers in lower-paying industries. See Eliza Forsythe et al., "Where have all the workers gone? Recalls, retirements, and reallocation in the COVID recovery," *Labour Economics*, vol. 78 (October 2022).

Figure 14. Worker Mobility and Median Wage Growth for Job-Stayers and Job-Movers



Source: Quit rate by industry: CRS analysis of BLS Job Openings and Labor Turnover Survey (JOLTS) data. Employer-to-employer transitions: Federal Reserve Bank of Philadelphia, *Fujita, Moscarini, and Postel-Vinay Employer-to-Employer Transition Probability*, https://www.philadelphiafed.org/surveys-and-data/macroeconomic-data/employer-to-employer-transition-probability. Median wage growth: Federal Reserve Bank of Atlanta, *Wage Growth Tracker*, https://www.atlantafed.org/chcs/wage-growth-tracker.

Notes: The top panel plots the job quit rate relative to the industry-specific rate in February 2020. Rates are the three-month moving average of quit rates. The middle panel plots the estimated number of workers who changed employers as a percentage of total employment in the previous month; data are seasonally adjusted. The bottom panel plots the median rate of nominal wage growth in each month over a 12-month period. Calculations are based on individuals who were employed at both the start and the end of the 12-month period. Nominal wage growth does not account for inflation.

Appendix. Methods

This report uses data from the Current Population Survey (CPS) Outgoing Rotation Groups (ORGs) to estimate quarterly hourly wage distributions over the 2014-2024 period. The CPS is a large-scale household survey conducted monthly by the Census Bureau. CPS participants are interviewed for four consecutive months, leave the survey for eight months, and then reenter the survey for a final four months. The ORGs are made up of respondents completing their fourth month in the survey (i.e., before they go out on the eight-month hiatus) and those completing their eighth and final interview. Unlike other CPS groups, the ORG respondents are asked about their usual earnings and hours worked, making them a particularly useful sample for hourly wage studies.

This report's sample comprises individuals 25 to 64 years old who were employed in nonfarm, nonmilitary wage and salary jobs during the survey week and reported enough information to compute an hourly wage. Excluded from the sample are self-employed workers, members of the Armed Forces, workers in agricultural occupations, and workers whose wages were imputed by the Census Bureau. As other analysts have done, CRS excluded Census-imputed wages due to a finding that a large portion of them were imputed with error.[43]

CRS estimates hourly wages by dividing workers' usual weekly earnings by their usual weekly hours of work. For workers who report they are paid by the hour, their reported hourly rate of pay was used. Wages represent earnings before deductions.[44] Wages are weighted by the product of a worker's CPS-ORG weight and their usual weekly hours (i.e., wages are hours-weighted).

For most years in the 2014-2024 period, CPS earnings data are *top-coded*—that is, any reported earnings above a given top-code value are replaced with the top-code value—to reduce the likelihood that any particular survey respondent can be identified in the data. Although necessary to maintain the anonymity of survey respondents, top-coding is problematic to studies that attempt to characterize the wage distribution. Researchers have addressed top-coded values using a variety of methods. In this report, CRS follows the Center for Economic and Policy Research's (CEPR's) method by modeling earnings as having a log-normal distribution and replacing top-coded values with gender-specific estimates of the mean value of weekly earnings above the top-code value.[45]

Following standard practice, wage outliers (i.e., implausibly low or high wage reports) were addressed by excluding wages that were less than $0.50 in 1989 dollars and greater than $150 in 1989 dollars. Hourly wages were adjusted for inflation using the Consumer Price Index for All Urban Consumers, U.S. City Average (CPI-U).[46] Specifically, they were converted to 2024 dollars.

[43] Barry Hirsch and Edward Schumacher, "Match Bias in Wage Gap Estimates Due to Earnings Imputation," *Journal of Labor Economics*, vol. 22, no. 3 (2002), pp. 689-722.

[44] For workers who are not paid by the hour (non-hourly workers), wages include tips, overtime pay, and commissions.

[45] A discussion of CEPR's methodology is at John Schmitt, *Creating a consistent hourly wage series from the Current*, CEPR, August 2003, https://ceprdata.s3.amazonaws.com/data/cps/CEPR_ORG_Wages.pdf. CEPR Stata code files are at https://ceprdata.org/cps-uniform-data-extracts/cps-outgoing-rotation-group/cps-org-programs/.

[46] The CPI-U, which is a measure of the average change over time in prices paid by consumers for a market basket of goods and services, is commonly used to compare the real (inflation-adjusted) value of earnings or spending data at different points in time.

Author Information

Sarah A. Donovan
Specialist in Labor Policy

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