



Policy Note

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A DECADE OF DECLINING WAGES: FROM BAD TO WORSE

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It has been widely reported that US real wages have been in decline for decades. In a recent policy note—Policy Note 2014/4, *A Decade of Flat Wages?*¹—we examined wage trends since 1994. We found that while wages grew between 1994 and 2002, average real wages since 2002–03 were stagnant or declining. This policy note reported that but for an increase in the share of older/more experienced and better-educated workers, a decade of flat wages (2003–13) was in fact a decade of falling average real wages. The present study provides a more detailed analysis of wage trends for wage-level, age, and education groups, with emphasis on the periods following the 2001 and 2007–09 recessions.

Our analysis shows that prior to 2002–03, full-time wage earners saw a roughly cohesive development of wages across demographic groups (wage level, age/experience, and education). However, after 2002–03 there is a clear divergence in wage trends for different demographic groups. Between 2003 and 2013, we observe marked declines in average real wages for the majority of full-time US wage earners. Wage earners in the bottom 75 percent of the distribution, relatively younger workers (ages 44 and younger), and those with less than a four-year college degree all saw declines in real wages during this period. In contrast, a much smaller group representing the

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higher-paid, older, and more educated wage earners lost less ground, and in some cases increased their real wages.

As in Policy Note 2014/4, this analysis of wage trends controls for demographic factors that influence an individual's wages (e.g., age, education, sex, and race). This allows us to provide a consistent and comparable view of the changes in average real wages over time using counterfactual average wages.² It is important to note that the analysis focuses only on wage earners in nonagricultural industries who work full time (35 or more hours per week). Thus, the wage trends analyzed are limited to people in full-time hourly or salaried employment—people who hold “good” jobs—between 1994 and 2013.³ We also limit our analysis to wage earners between the ages of 25 and 64, as they represent the core of the labor force.

Though we did not set out to corroborate the findings of recent studies on the US recovery, we would be remiss if we did not note the correspondence between our findings on wage trends and those of other Levy Institute analyses. Rising income inequality (see Tcherneva 2014) is evident in the evolution of wages. The decline in real wages between 2002 and 2013 reinforces the Institute's findings on household debt as a strategy to maintain household consumption in the presence of falling household income (Cynamon and Fazzari 2013). And, most notably, the present study underscores the findings of a recent strategic analysis for the United States (Papadimitriou et al. 2014), which identified rising income inequality as an “unsustainable process” that undermines US economic growth poten-

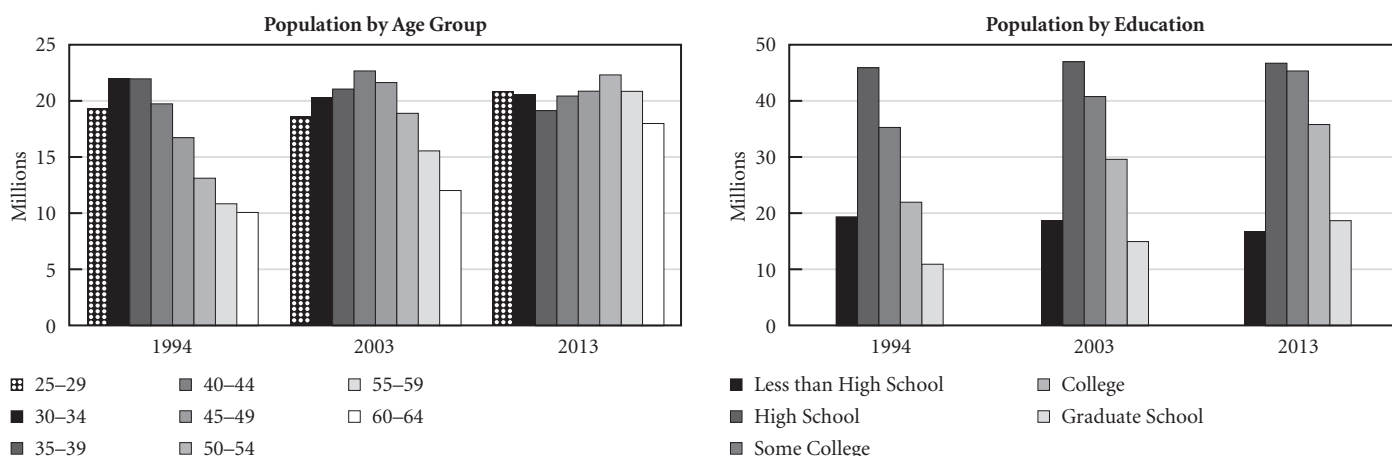
tial. Our study provides a more in-depth understanding of rising wage inequality, and the groups most affected, before, during, and after the Great Recession. We begin with a brief description of population trends in the United States between 1994 and 2013, and follow with an examination of real wage trends by wage level, age/experience, and education.

Age and Education: Population Trends in the United States, 1994–2013

The US population was, on average, older/more experienced and better educated in 2013 than in 1994. Between 1994 and 2013, the share of older workers (ages 45–64) in the US population increased by 10 percent (Figure 1). During the same period, the share of full-time wage earners with a high school education or less declined by 5 percent, while the share of the population with a postsecondary education increased by roughly the same percentage.

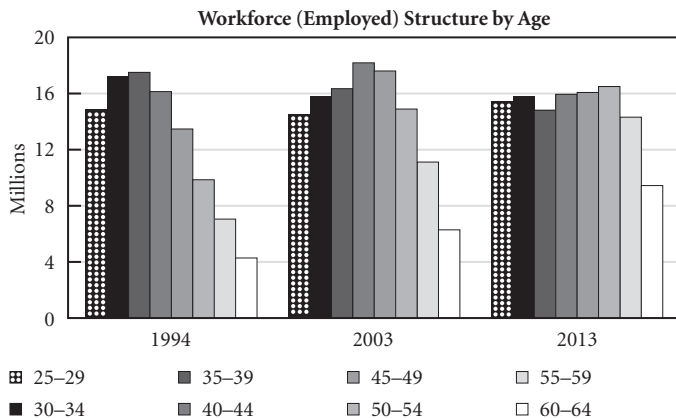
*There was a marked increase in the percentage of older wage earners in full-time employment between 1994 and 2013.*⁴ In 1994, this group represented 15.5 percent of the population and 9.0 percent of full-time workers; in 2013, they represented 23.8 percent of the population and 17.6 percent of full-time workers. Their large numbers push wages upward and reduce the turnover in jobs, which in turn limits the job opportunities for younger workers.

Figure 1 Population Trends: 1994, 2003, 2013



Source: Author's calculations based on the US Bureau of Labor Statistics, Current Population Survey, Outgoing Rotation Groups

Figure 2 Employment Trends: 1994, 2003, 2013



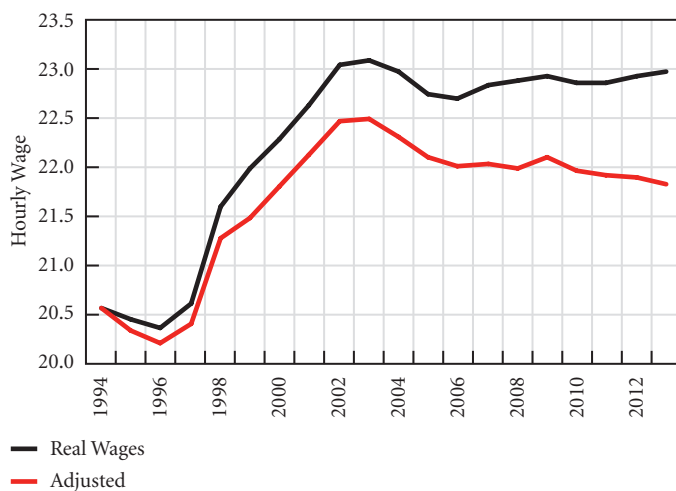
Source: Author's calculations based on the US Bureau of Labor Statistics, Current Population Survey, Outgoing Rotation Groups

The age composition of the employed and unemployed populations between 1994 and 2013, with the exception of the youngest workers, shows patterns similar to those of the overall population. All age groups had higher total unemployment in 2013 compared to 1994, with the youngest workers (ages 25–29) showing the most significant increase relative to other age groups (Figure 2).

The composition of full-time wage earners changed dramatically between 1994 and 2013. In 1994, the youngest workers (ages 25–34) represented 36.2 percent of all full-time workers; by 2013, that percentage had fallen to 28.9. This reflects the decline in their share of the total population, from 31 percent to 25 percent, as a consequence of their lack of growth (41.4 million in 1994, and 41.5 million in 2013). Full-time workers aged 35 to 44 experienced similar, though not equally dramatic, declines in population growth and their relative share of full-time employment.

The share of full-time employment (i.e., workers who had jobs in 2013) shifted to workers aged 45 and older, with the most significant increases seen in workers aged 55 to 64. The latter group saw a 253 percent increase in the number of full-time jobs between 1994 and 2013, and their share of full-time jobs rose from 9 percent to 17.6 percent in the same period. This is partly explained by an 82 percent increase in the population aged 55 to 64, but it does not account for the near tripling of their numbers among the full-time employed.

Figure 3 Average Wages and Wages Adjusted for Education and Age/Experience, 1994–2013



Source: Author's calculations based on the US Bureau of Labor Statistics, Current Population Survey, Outgoing Rotation Groups

Wages, Education, and Age/Experience

Based on this general picture of the evolution composition of the population and full-time wage earners, we turn to an analysis of how different groups fared in recent decades, and specifically since the beginning of the 2009 recovery. First, we present an updated version of a graphic from Policy Note 2014/4, showing that, but for the increased experience (as measured by age) and education of workers, real wages would have fallen rather than remaining flat between 2003 and 2013 (Figure 3).

Average wages (adjusted for inflation) stagnated after 2002–03. However, when we take into account the levels of experience and education of workers, real wages actually declined after 2002–03. A larger number of older (more experienced) workers and a larger number of better-educated workers propped up wages, but this did not result in average real wage growth since 2002–03. This raises two questions: did all workers experience the same changes in their wages? And, if there were differences, who were the winners and losers in terms of wage growth? To answer these questions, we analyzed the cumulative wage growth of different groups (wage level, age/experience, and education) over the past two decades, using the same fixed-wage methodology that was used to analyze changes in real wages.

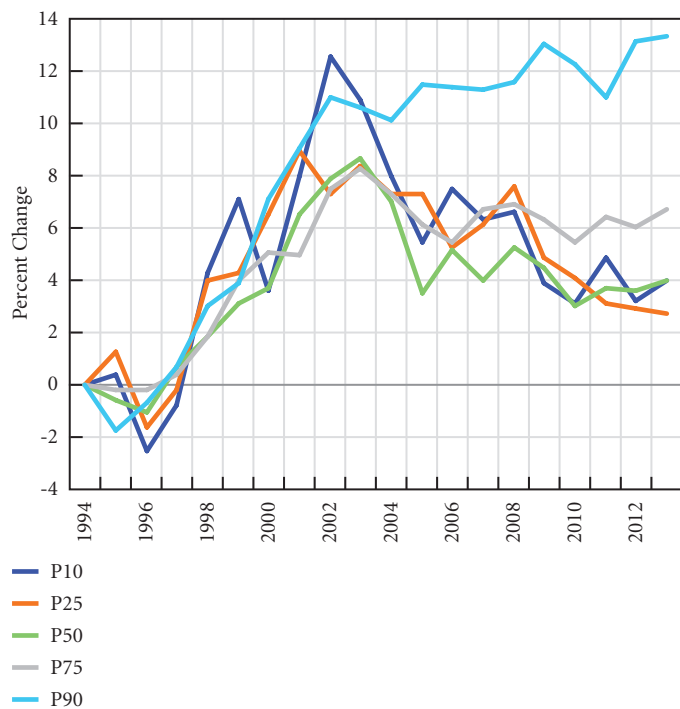
Changes in the Wage Distribution

Until around 2002–03, wages across the entire distribution followed a similar path in terms of cumulative wage growth and decline, notably, rising between 7 percent and 11 percent in the years prior to the 2001 recession (Figure 4). This cohesion in

wage growth began to unravel in the so-called “boom” years (2002–07) leading up to the Great Recession. Despite a growing US economy, the majority of full-time wage earners experienced declining wages. However, wages did not decline equally for all groups.

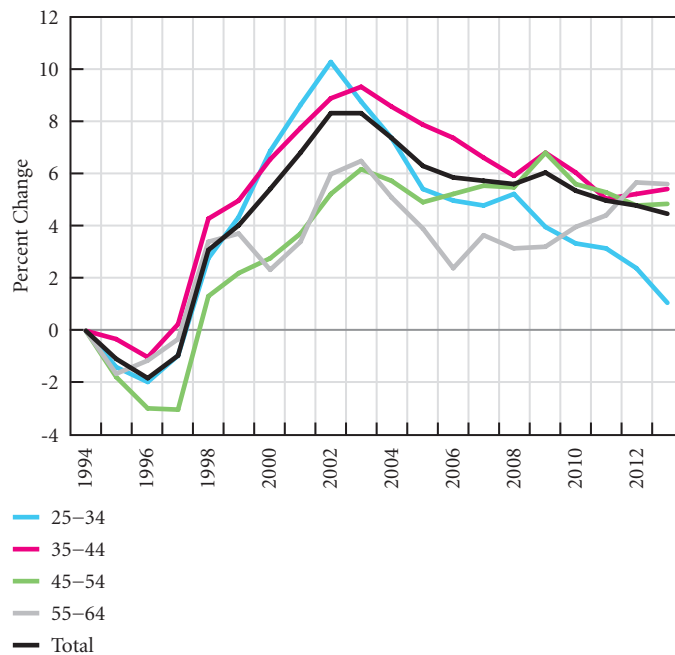
The vast majority of wage earners saw their wage growth peak in 2002–03 and then decline between 2 percent and 6 percent until 2013. Only wages for the top 10 percent continued to grow after the 2001 recession. In terms of wage inequality, wages for the top 10 percent (annual wages starting at \$81,300 and a median wage of \$100,000 in 2013⁵) experienced weak but positive wage growth (2 percent) after the 2001 recession. Across the rest of the wage distribution, wages exhibit a decline after 2002, particularly wages for full-time workers in the bottom 25th percentile of the distribution. Controlling for changes in age, education, sex, and racial composition between 1994 and 2013, more than 50 percent of the population experienced a decline in real hourly wages.

Figure 4 Cumulative Wage Growth: Selected Percentiles, 1994–2013



Source: Author’s calculations based on the US Bureau of Labor Statistics, Current Population Survey, Outgoing Rotation Groups

Figure 5 Cumulative Real Wages by Age Group, 1994–2013



Source: Author’s calculations based on the US Bureau of Labor Statistics, Current Population Survey, Outgoing Rotation Groups

Wages by Age Group

In terms of cumulative wage growth, the youngest workers (ages 25–34)—representing 37 percent of full-time wage earners, or nearly 20 million workers in 2013—experienced the largest change in their real wages between 2002 and 2013, losing nearly all of the wage growth of the previous two decades (Figure 5). By 2013, their cumulative real wage growth after nearly 20 years was approximately 1 percent. Notably, this group also experienced the highest rates of unemployment during and after the Great Recession.

Workers aged 44 and younger experienced a significant wage decline after 2002, with the largest decline among workers aged 25 to 34. This age group represents slightly more than 38 million full-time wage earners—71.4 percent of all full-time wage earners in the United States in 2013. As noted in a recent JPMorgan Chase study (Roy 2014), it is the group that spends the largest share of its income on consumption. Thus, the rise in income inequality and reductions in real wages could have a direct bearing on US consumption levels, and therefore the strength, or lack thereof, of the recovery since 2009.

The only group to see a clear pattern of rising wage growth in the 2009 recovery is made up of the oldest workers (ages 55–64). Wage earners aged 55 to 64—roughly 12 million workers in 2013—represent 17.65 percent of the labor force but 19.03 percent of total wages earned in 2013 (compared to 8.97 and 9.31 percent, respectively, in 1994).

Wages and Education

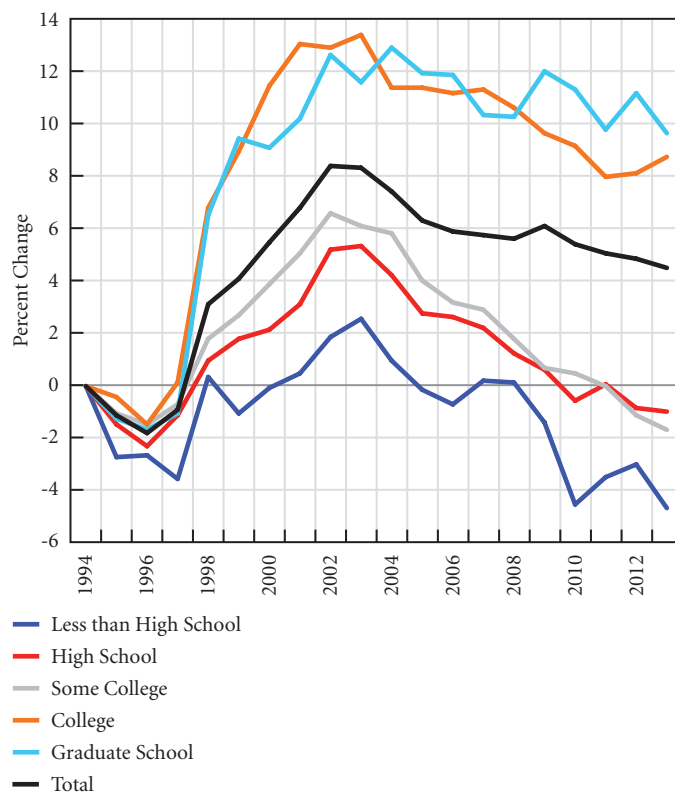
After controlling for structural changes in the labor force, workers across education groups generally saw real wages increase up to the peak wage year of 2002–03, again indicating broad participation in the wage growth leading up to the 2001 recession. After 2003, all wages experienced a decline for all educational levels. In contrast to the wage growth trends observed by age and wage distributions, wage growth for workers by level of education show notable divergence across the entire period (Figure 6). Workers with a four-year college or graduate degree experienced the largest growth in wages prior to the 2001 recession (growing approximately 12 percent compared to 1994 levels). After the recession, the wages of full-time workers with at least a college degree (roughly 25 million workers in 2013) declined—between 2 percent and 3 percent by 2013. Full-time workers

without a college degree (64 percent of full-time workers in 2013) experienced a 6 percent decline in wages, resulting in wages below 1994 levels. To put this in perspective, if a college graduate earned \$1.00 in wages in 1994, her real wages were roughly \$1.09 in 2013. In comparison, a worker who did not graduate from high school who earned \$1.00 in 1994 earned \$0.95 in 2013, or 5 percent less.⁶

Workers with less than a four-year college degree earned less in 2013 than the equivalent group in 1994. In 2013, this group represented 63.9 percent of all full-time wage earners, or nearly 44 million people. Wages declined for full-time workers with lower education levels following 2002–03, and they have continued to decline during the recovery (2009–13), to below 1994 levels.

Workers with a four-year college or graduate degree also saw their wages decline compared to 2002–03, but not as sharply as their less educated peers. Full-time workers with a college or graduate

Figure 6 Cumulative Wage Growth and Education, 1994–2013



Source: Author's calculations based on the US Bureau of Labor Statistics, Current Population Survey, Outgoing Rotation Groups

degree represent 36.2 percent of all full-time wage earners in 2013. The best that can be said for workers with a college or graduate degree is that the recovery did not reduce their wages at the same pace as less educated workers, but it has not led to stable or increasing wages.

Conclusions

There was a more or less cohesive evolution of wages among different groups until 2002–03. However, after controlling for structural changes in the labor force, wages diverged sharply in the years that followed for different age, education, and wage groups, with the majority of workers experiencing real declines in their wages. This was not a short-term decline among a few isolated or numerically insignificant groups. Nearly two-thirds of all full-time wage earners have less than a four-year college degree and saw their wages decline compared to peak wages in 2002. Workers aged 44 and younger, representing slightly more than 38 million full-time wage earners or 71.4 percent of all full-time wage earners in the United States in 2013, also experienced a large reduction in cumulative wage growth after 2002. In terms of wage groups, the bottom 75 percent of full-time wage earners saw a decline in real wages, while those at the top of the wage distribution saw their wages rise—clear evidence of increasing wage inequality. In contrast, older/more experienced, higher-earning, and better-educated workers saw slower wage growth rather than declines. Some of these groups have not recouped the peak wage levels of 2002. However, a minority of full-time wage earners in these groups maintained or increased their real wages after 2002.

Given the downward trend in real wages for the majority of full-time wage earners since 2009, it should come as no surprise that the recovery has been weak. In the absence of an employer-of-last-resort policy, federal and state policy must focus its efforts on increasing wages through measures such as progressive tax policy, raising the minimum wage, ensuring overtime pay laws are enforced, and creating opportunities for the most vulnerable workers.

A subsequent policy note will examine the evolution of wages by industry and sector of the US economy, both as a way to examine the trends in real wages and to compare the growth in the real economy and the financial economy. As noted in Papadimitriou, Hannsgen, and Nikiforos 2013, the link between economic growth and job creation has grown weaker in recent decades.

Notes

1. See Rios-Avila and Hotchkiss (2014).
2. Counterfactual average real wages are calculated, holding the education, age, sex, and race structures fixed to those observed in 1994. These counterfactual wages are constructed by weighting average wages for the age, education, sex, and race categories for each year by the distribution of these characteristics observed in 1994. This allows for a comparison of wage trends that controls for structural (e.g., education and age/experience) changes in the labor market, providing a more consistent measure of real wage trends over time.
3. It is beyond the scope of this policy note to examine the trends in labor force participation, part-time employment, skill levels, global competitiveness of US workers, worker mobility, or disparities in employment benefits.
4. Part-time work accounts for a larger share of employment than in 1994, especially for workers under age 40, and dramatically so for workers aged 25 to 30. In contrast, older workers exhibit a trend of shifting from part-time to full-time employment during this period. This may account for one of the mechanisms by which the composition of the workforce (and therefore average wages) changed: older workers moved to or stayed in full-time jobs, which increased averaged wages.
5. Annual wages are estimated using an average of 40 hours per week for 50 weeks per year.
6. This calculation is simply a comparison of the fixed wages in this analysis and is presented for illustrative purposes only. A precise calculation of the exact dollar value of real wages by demographic group is beyond the scope of this analysis.

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