Occupational Wage Declines Since the Great Recession

Low-Wage Occupations See Largest Real Wage Declines

Introduction

On this Labor Day 2015, the U.S. labor market has shown considerable healing since the Great Recession. Private sector employment has expanded steadily, and the jobless rate has continued to fall. Yet, underlying weaknesses persist, as evidenced by the historically low employment rate of prime-age workers and the stubbornly high number of individuals unemployed for longer than six months. The "real" unemployment rate—which includes those working part time who want full-time work, and those who have stopped searching but if offered a job would take it—remains in excess of 10 percent.

Moreover, most workers have failed to see improvements in their paychecks (Gould 2015a). In fact, taking into account cost-of-living increases since the recession officially ended in 2009, wages have actually *declined* for most U.S. workers. Inflation-adjusted or "real" wages reflect workers' true purchasing power; as real wages decline, so too does the amount of goods and services workers can buy with those wages. The failure of wages to merely keep pace with the cost of living is not a recent phenomenon. The declines in real wages since the Great Recession continue a decades-long trend of wage stagnation for workers in the United States (Gould 2015a).

In this data brief, we examine real wage declines for U.S. workers based on their occupations. Previous research has used a variety of other data sources and measures to examine change in real earnings. Our analysis relies on data from the Occupational Employment Statistics series which affords the ability to examine wage declines across nearly 800 occupations, providing a richer and more granular picture of wage changes since 2009. As described in the discussion below and shown in the Appendix Table, wage decline rates are not uniform across all occupations. Rather, higher rates are concentrated in certain occupations, and rates overall vary across quintiles. Our occupational wage data analysis also makes clear that, on average, the lowest-paying jobs have experienced disproportionately greater wage declines. Policymakers may want to pay particular attention to these differences as they set priorities for remedial action or determine appropriate policies and strategies to raise wages for certain kinds of jobs.

Using the latest available data on hourly wages by occupation, this brief details the trends in occupational real wages since the recovery began in 2009. We calculated the percentage change in real median hourly wages from 2009 to 2014 for 785 occupations, which were grouped into quintiles, each representing approximately one-fifth of total employment in 2014. We summarize our findings below. Our analysis for this brief updates our earlier work finding wage declines by occupation between 2009 and 2013 (NELP 2014).

Real wage declines are greatest for lower-wage occupations

Averaged across all occupations, real median hourly wages declined by 4.0 percent from 2009 to 2014. As **Figure 1** shows, lower- and mid-wage occupations experienced proportionately greater declines in their real wages than did higher-wage occupations. Between 2009 and 2014, occupations in the bottom three-fifths saw median wage declines of 4.0 percent or greater. By contrast, median wages in the two highest quintiles declined by an average of 2.6 and 3.0 percent, respectively.

Real median wages in the bottom quintile declined by an average of 5.7 percent between 2009 and 2014, the highest rate for any quintile.[1]
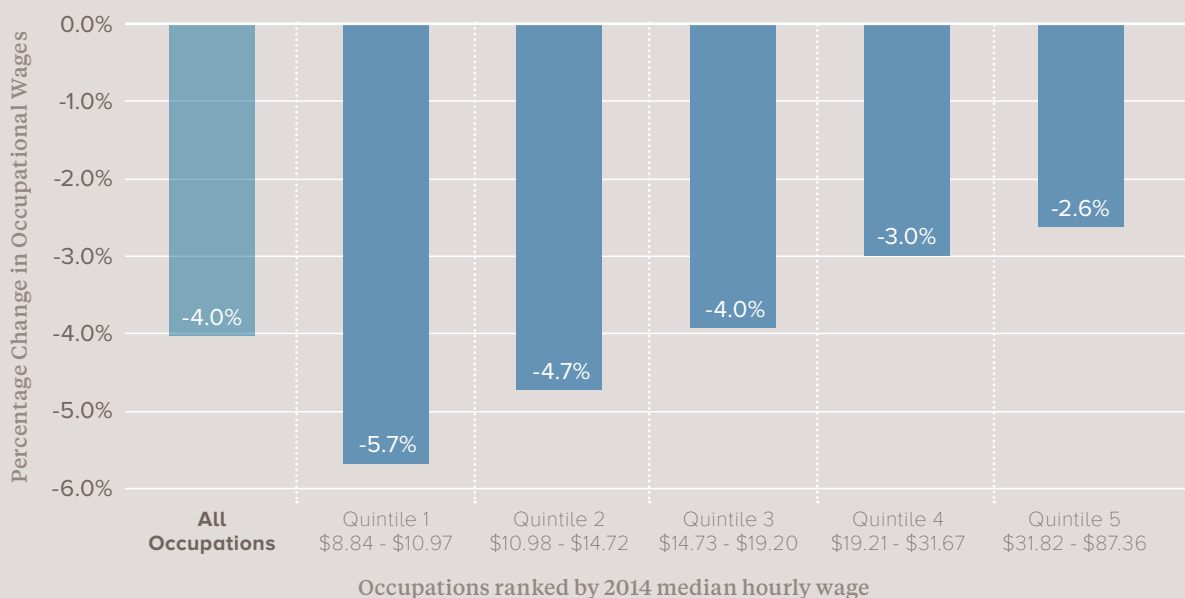
Of the largest occupations in the lowest-wage quintile, the two occupations with the greatest wage declines between 2009 and 2014 were both in the restaurant sector. As Table 1 shows, cooks and food preparation workers experienced wage declines of 8.9 percent and 7.7 percent, respectively. Wage declines were also especially pronounced for janitors and cleaners, personal care aides, home health aides, and maids and housekeeping cleaners.

Declines in real wages represent purchasing power losses for workers and their families. For example, for a restaurant cook who works full time, year-round, a real wage in 2014 that is 8.9 percent less than in 2009 translates into approximately $2,185 less in income in 2014 than in 2009, or an annual average decline of $437.

To put this lost value in context, it is equivalent to what the average household with comparable annual earnings will spend on nearly two months' worth of groceries (BLS 2015a).[2] For food preparation workers, a 7.7 percent decline in 2014 compared to 2009 means $1,622 less in income for 2014, or an average of $324 annually. This is equivalent to what an average household with comparable earnings will spend to refill its car's gas tank over a little more than two-and-a-half months out of the year. For retail salespeople, the largest bottom-quintile occupation, a 5.0 percent wage decline means a total loss of about $1,125, or $225 annually. This is slightly less than what a household with comparable annual earnings will spend on an average month's utility bill. For a higher-income worker, these losses might represent one fewer dinner out with family or friends, but for the household headed by a fast-food employee or a retail cashier, the losses in purchasing power are of major significance.

Workers in these lowest-wage jobs are doubly disadvantaged: their real wages are falling more quickly than workers in higher-paid jobs, and the starting points for the decline are already very low.[3] These wage declines compromise the ability of workers across occupations to make ends meet, and exact a greater burden on those workers whose earnings are already lowest.

Figure 1. The Decline in Occupational Real Wages, 2009 to 2014

Source: NELP analysis of May 2009 and 2014 Occupational Employment Statistics.
Note: Ranges shown represent the median hourly wage of the lowest- and highest-paid occupations within each quintile.

Table 1. Wage Declines for the 10 Largest Occupations in the Bottom Quintile, 2009 to 2014
(Occupations are sorted by total employment in 2014, from highest to lowest)

		Total employment, 2014 (in thousands)	Median hourly wage, 2014	Change in real median hourly wage, 2009 to 2014
1	Retail salespersons*	4,562.1	$10.28	-5.0%
2	Cashiers	3,398.3	$9.15	-3.9%
3	Combined food preparation and serving workers, including fast food*	3,131.3	$8.84	-3.9%
4	Waiters and waitresses	2,445.2	$9.00	-4.8%
5	Janitors and cleaners, except maids and housekeeping cleaners*	2,137.7	$10.97	-6.6%
6	Personal care aides*	1,257.0	$9.82	-6.6%
7	Cooks, restaurant	1,104.7	$10.80	-8.9%
8	Maids and housekeeping cleaners	929.5	$9.66	-6.1%
9	Food preparation workers	850,0	$9.39	-7.7%
10	Home health aides*	799.0	$10.27	-6.2%

Source: NELP analysis of May 2009 and 2014 Occupational Employment Statistics.
Note: An * indicates those occupations that are also projected to grow the most by 2022, as shown in Table 2.

Occupations that are adding the most jobs show above-average real wage declines

As **Table 2** shows, five of the ten occupations that the Bureau of Labor Statistics projects will add the greatest number of jobs between 2012 and 2022 were at the bottom of the occupational distribution in 2014, with real median wages between $8.84 and $10.97. In addition, six of the ten highest-growth occupations experienced real wage declines of 5.0 percent or more between 2009 and 2014, as compared to a 4.0 percent average decline across all occupations.

These findings suggest that the wage foundations for millions of new jobs over the coming years could be especially shaky and inadequate, providing little economic security. Workers in these jobs are typically less resilient to unemployment, illness, and other destabilizing life events, and as their numbers grow, so too will the consequences of this instability. If this pattern of real wage declines among the lowest-wage occupations persists, then we can expect the overall pattern of stagnating wages to continue.

Table 2. Occupations with the Greatest Projected Job Growth Between 2012 and 2022
(Occupations are sorted by projected change in employment, from highest to lowest)

	Projected change in number of jobs, 2012-22 (in thousands)	Projected % change in number of jobs, 2012-22	Median hourly wage, 2014	Change in real median hourly wage, 2009-2014	Quintile
All Occupations	**15,628.0**	**10.8%**	**$17.09**	**-4.0%**	-
Personal care aides	580.8	48.8%	$9.82	-6.6%	1
Registered nurses	526.8	19.4%	$33.16	-2.6%	5
Retail salespersons	434.7	9.8%	$10.28	-5.0%	1
Home health aides	424.2	48.5%	$10.27	-6.2%	1
Combined food preparation and serving workers, including fast food	421.9	14.2%	$8.84	-3.9%	1
Nursing assistants	312.2	21.1%	$12.05	-6.2%	2
Secretaries and administrative assistants, except legal, medical, and executive	307.8	13.2%	$15.97	-0.2%	3
Customer service representatives	298.7	12.6%	$14.99	-7.4%	3
Janitors and cleaners, except maids and housekeeping cleaners	280.0	12.1	$10.97	-6.6%	1

Source: BLS Employment Projections and NELP analysis of May 2009 and 2014 Occupational Employment Statistics.

Real wage declines are *mostly* greater for the lowest-paid workers across the occupational distribution

Figure 2 builds on Figure 1 by showing average declines from 2009 to 2014 in real 10th and 90th percentile hourly wages across occupations within each of the five quintiles. In effect, we measured wage declines among the highest- and lowest-paid workers, employed in lower-, mid-, and higher-wage jobs. This helps us to understand whether or not measuring change in median wages masks sharper declines elsewhere, especially among the lowest hourly wages in the lowest-wage jobs. As in Figure 1, occupations are ranked by their 2014 median hourly wages, and grouped into quintiles based on 2014 employment levels.

Averaged across all occupations, the real wage at the 10th percentile declined by 3.8 percent from 2009 to 2014, which is just below the average decline in real median wages (4.0 percent) over this period (Figure 1). The lowest-paid workers employed in occupations in the two lowest quintiles experienced below-average declines, with 10th percentile wages in the first quintile declining by just 1.6 percent from 2009 to 2014. By contrast, 10th percentile wages of occupations in the top three-fifths of the distribution experienced average declines of greater than 4.0 percent.

The second set of findings in **Figure 2** show average declines at the 90th percentile wage of occupations within each of the five quintiles. Averaged across all occupations, the inflation-adjusted wage at the 90th percentile declined by 3.2 percent from 2009 to 2014.

In contrast to findings on 10th percentile wages, average declines at the 90th percentile wage were greater at the bottom of the occupational distribution than at the top, with real declines in the bottom quintile averaging 4.9 percent. Real 90th percentile wages across jobs in the top quintile declined by less than half this rate, or 2.1 percent, on average.

Our analysis reveals that with the exception of occupations in the bottom quintile, average declines in 10th percentile wages exceeded average declines in 90th percentile wages from 2009 to 2014. That we did not observe this pattern at the bottom of the occupational distribution underscores the importance of a wage floor. Some workers' wages are so low that employers are not able to push them down any further. Additionally, the federal minimum wage last increased in 2009, from $6.55 to $7.25. Minimum wages in 22 states increased even further between 2009 and 2014, either as a result of legislation or automatic adjustments (WHD 2015); and minimum wage increases in numerous cities either passed or took effect (NELP 2015). These increases are likely another reason average wage declines by occupation between 2009 and 2014 were least among workers paid the least in the lowest quintile. This is consistent with recent research finding that real hourly wages actually increased at the 10th percentile of the wage distribution between 2013 and 2014, whereas they decreased for everyone else (Gould 2015b).

Figure 2. The Decline in Real Wages for the Lowest- and Highest-Paid Workers Across the Occupational Distribution, 2009 to 2014
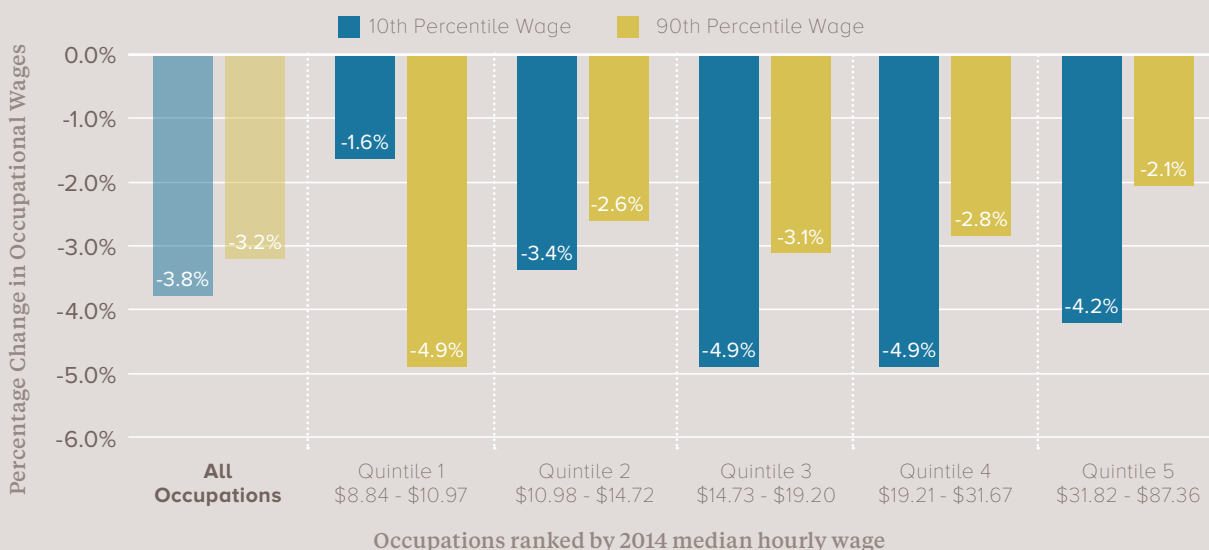
Source: NELP analysis of May 2009 and 2014 Occupational Employment Statistics.

Conclusion

This data brief updates NELP's earlier work analyzing wage declines across the occupational distribution since the end of the Great Recession. In summary, we find that real wage declines were greatest for the lowest-wage occupations. In the bottom quintile, restaurant cooks and food preparation workers experienced wage declines well in excess of the average for all bottom-quintile occupations and the entire occupational distribution. Real median wages fell by 5.0 percent or more in six of the ten occupations with the greatest projected job growth by 2022. Moreover, five of the ten highest-growth jobs were at the bottom of the occupational distribution in 2014, suggesting a future of continued imbalance.

Building on our findings in Figure 1, we analyzed average declines in real 10th and 90th percentile wages across occupations in each of the five quintiles. On the whole, average declines in real hourly wages at the 10th percentile were proportionately smaller at the bottom of the occupational distribution than at the higher-end. By contrast, average declines in real wages at the 90th percentile generally increased with each additional step down the distribution. Average declines in 10th percentile wages exceeded average declines in 90th percentile wages from 2009 to 2014, on the whole and by quintile, with one exception—in occupations in the bottom quintile, 10th percentile wages fell by an average of just 1.6 percent, the least of all reported declines. The numerous increases in state and local minimum wages over this period likely contributed to this smaller decline in wages for those who are effectively the lowest-wage employees among these lowest-paid occupations.

Our findings on occupational wage declines are consistent with a longer-run trend in wage stagnation and growing income inequality for America's workers. Reversing these trends will require concerted effort on the part of federal, state, and local policymakers, regulators and private-sector leaders to reorient our economy toward better-paying jobs. Some immediate steps that can contribute to this change include raising the minimum wage to at least $12.00 per hour by 2020 nationally, and to $15 per hour in higher-cost cities and states; restoring workers' freedom to form unions and bargain collectively; enforcing existing wage protections aggressively (including protections against misclassification of employees as independent contractors); extending federal wage protections to excluded workers (such as home care workers); and raising wages for low-paid workers in the public sector and at businesses receiving public contracts or subsidies.

Addressing wage declines, especially for workers in the lowest-paid occupations, is urgent and critical; it should be a central focus of policymaking efforts at the federal, state, and local level in coming years.

For questions about this data brief, please contact Irene Tung at itung@nelp.org or Claire McKenna at cmckenna@nelp.org.

Appendix 1: Data and Methods

This brief draws on data from the Occupational and Employment Statistics (OES) for 2009 and 2014. Every year, OES produces detailed employment and wage estimates for approximately 800 occupations based on six semi-annual surveys covering 1.2 million establishments. Other sources of data, such as the Current Population Survey and Current Employment Statistics, do not have sufficient sample sizes to allow for an analysis of wage declines at the level of detailed occupations.

Our analysis is based on 785 occupations classified according to the Standard Occupational Classification (SOC) system. Because a revised SOC was introduced in 2010, we used the SOC 2000 to 2010 crosswalk to recode 2009 and 2014 data to form a consistent series of occupation codes across years. During this process, we consolidated 42 occupation codes, representing 4.8 percent of total employment, into 23 existing occupation codes.

In addition, the OES does not report hourly wage data for occupations with irregular work schedules (e.g., teacher, athletes, and pilots). We imputed median hourly wages for education-related occupations by dividing median annual earnings by 1,560 hours (nine months of full-time work), and divided by 2,080 hours (12 months of full-time work) for the remaining occupations. In addition, the OES did not report median earnings data (hourly or annual) for seven high-wage occupations. We excluded these occupations from our analysis.

For Figures 1 and 2, we ranked occupations from highest to lowest using their 2014 median hourly wage, weighted by 2014 employment, and then grouped the occupations into five approximately equal quintiles. For each quintile, we calculated the average of the percentage change in the median hourly wage for the occupations in that quintile (or, as in Figure 2, the average of the percentage change in the hourly wage at the 10th and 90th percentiles, respectively). Similarly, the total percentage change is the weighted average percentage change for all occupations. To compare wages across years, we used the annual CPI-U to adjust for inflation. We produce similar results—that is, proportionately greater average declines in lower-wage occupations—when we group occupations into terciles and deciles.

To produce estimates of lost purchasing power for restaurant cooks, food preparation workers, and retail salespeople, we converted their 2009 and 2014 real median hourly wages into annual earnings first by multiplying by 2,080 hours and then by taking the difference. For simplicity, we assume full-time, year-round employment; however, we acknowledge that this likely overstates annual earnings for these workers given that many work part-time. We then divided the results by five years, to produce annual average declines in real earnings. To show what these losses represent in terms of typical household expenditures, we first matched 2014 real annual earnings for each occupation with the closest corresponding category of average annual income before taxes in BLS Consumer Expenditure Survey published data (BLS 2015b). For the purposes of this brief, we assume these workers are the primary earners in their households. Within each corresponding income group, we then located nominal average expenditures on food at home; gasoline and motor oil; and utilities, fuels, and public services, and then divided those values by 12 to estimate average monthly spending. Finally, we compared these monthly expenditures figures to the average annual real earnings declines for each of three occupations shown.

Finally, it is important to note that although the OES methodology is designed to produce cross-sectional employment and wage estimates, we believe that absent other sources of reliable data at the level of detailed occupations, these data provide valuable insight into occupational wage trends over time. BLS produces OES estimates for any given reference period using six semi-annual panels for three consecutive years. Given that our analysis spans a five-year period (2009 to 2014), the samples in question do not overlap.

Appendix 2: Table

Table A.1. Wage Declines for the 10 Largest Occupations by Quintile, 2009-2014 _(Occupations are sorted by total employment in 2014, from highest to lowest)_		Projected % change in number of jobs, 2012-22	Median hourly wage, 2014	Change in real median hourly wage, 2009-2014
1st Quintile ($8.84 - $10.97)	Retail Salespersons	4,562,160	$10.28	-5.0%
	Cashiers	3,398,330	$9.15	-3.9%
	Combined Food Preparation and Serving Workers, Including Fast Food	3,131,390	$8.84	-3.9%
	Waiters and Waitresses	2,445,230	$9.00	-4.8%
	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	2,137,730	$10.97	-6.6%
	Personal Care Aides	1,257,000	$9.82	-6.6%
	Cooks, Restaurant	1,104,790	$10.80	-8.9%
	Maids and Housekeeping Cleaners	929,540	$9.66	-6.1%
	Food Preparation Workers	850,220	$9.39	-7.7%
	Home Health Aides	799,080	$10.27	-6.2%
2nd Quintile ($10.98 - $14.72)	Office Clerks, General	2,889,970	$13.77	-1.4%
	Laborers and Freight, Stock, and Material Movers, Hand	2,400,490	$11.73	-5.0%
	Stock Clerks and Order Fillers	1,878,860	$10.98	-2.0%
	Orderlies/Nursing Assistants	1,480,160	$12.05	-6.2%
	Security guards/Protective service workers, all other/ Security Guards/Transportation Security Screeners	1,233,760	$12.14	-6.3%
	Team Assemblers	1,125,160	$13.63	-4.8%
	Receptionists and Information Clerks	981,150	$12.86	-4.0%
	Landscaping and Groundskeeping Workers	868,770	$11.67	-7.0%
	First-Line Supervisors of Food Preparation and Serving Workers	867,340	$14.20	-9.8%
	Light Truck or Delivery Services Drivers	797,010	$14.20	-6.2%
3rd Quintile ($14.73 - $19.20)	Customer Service Representatives	2,511,130	$14.99	-7.4%
	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	2,207,220	$15.97	-0.2%
	Heavy and Tractor-Trailer Truck Drivers	1,625,290	$18.98	-5.9%
	Bookkeeping, Accounting, and Auditing Clerks	1,575,060	$17.49	-2.1%
	Maintenance and repair workers, general	1,282,920	$17.37	-6.1%
	First-Line Supervisors of Retail Sales Workers	1,199,770	$18.18	-2.5%
	Teacher Assistants	1,192,590	$15.65	-3.8%
	Construction Laborers	852,870	$14.94	-4.0%
	Automotive Service Technicians and Mechanics	633,390	$17.82	-5.9%
	Industrial Truck and Tractor Operators	521,840	$15.06	-4.6%

		Projected % change in number of jobs, 2012-22	Median hourly wage, 2014	Change in real median hourly wage, 2009-2014
4th Quintile ($19.21 - $31.67)	First-Line Supervisors of Office and Administrative Support Workers	1,404,070	$24.40	-2.6%
	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,394,640	$26.43	-2.9%
	Accountants and Auditors	1,187,310	$31.67	-1.8%
	Teachers and Instructors, All Other/Substitute Teachers/ Special Education Teachers, All Other	931,980	$20.37	-9.3%
	Sales Representatives, Services, All Other	826,650	$24.82	-6.0%
	Executive Secretaries and Executive Administrative Assistants	713,730	$24.63	10.6%
	Licensed Practical and Licensed Vocational Nurses	695,610	$20.41	-4.0%
	Police and Sheriff's Patrol Officers	638,810	$27.29	-4.0%
	Carpenters	617,060	$19.61	-7.0%
	First-Line Supervisors of Production and Operating Workers	592,830	$26.67	-4.1%
5th Quintile ($31.82 - $87.36)	Nurse Midwives/Nurse Anesthetists/Registered Nurses/ Nurse Practitioners	2,851,060	$33.16	-2.6%
	General and Operations Managers	2,049,870	$46.73	-5.6%
	Elementary School Teachers, Except Special Education	1,353,020	$34.66	-3.7%
	Secondary School Teachers, Except Special and Career/ Technical Education	960,380	$36.07	-3.0%
	Business Operations Specialists, All Other	934,370	$32.32	-0.2%
	Computer Software Engineers, Applications	686,470	$45.88	-1.8%
	Middle School Teachers, Except Special and Career/ Technical Education	630,620	$35.19	-2.7%
	Lawyers	603,310	$55.22	-8.7%
	Management Analysts	587,450	$38.85	-3.4%
	Computer Systems Analysts	528,320	$39.72	-3.6%

Source: NELP analysis of May 2009 and 2014 Occupational Employment Statistics.

Endnotes

1. This decline was also more pronounced than the 4.3 percent decline for the lowest-wage quintile over the 2009 through 2013 period, as reported in NELP's earlier analysis of occupational real wages (NELP 2014).
2. For more information about these calculations, please see the Data and Methods section of the Appendix.
3. And because these wage declines reflect national data, a loss in income of $2,185 likely understates real earnings losses for restaurant workers living in areas where inflation was greater and hence, a worker's purchasing power declined by more than the national average (but at the same time, they may overstate them for workers living in areas where declines in purchasing power were below average).

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