U.S. Health Reform—Monitoring and Impact

# How Have Workers Fared Under the ACA?

November 2018

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Robert Wood Johnson Foundation

Support for this research was provided by the Robert Wood Johnson Foundation. The views expressed here do not necessarily reflect the views of the Foundation.

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# EXECUTIVE SUMMARY


A central aim of the Patient Protection and Affordable Care Act (ACA) was to increase health insurance coverage. In a previous brief, we documented that, through 2015, coverage gains for workers under the ACA were largest in occupations with lower baseline coverage rates, employer-sponsored insurance (ESI) coverage rates, hourly wages, and weekly earnings.[1] These findings indicated that coverage gains were well-targeted to workers and their dependents who most needed the assistance.

In this brief, we assess whether coverage gains from 2010 to 2016 were associated with changes in labor market outcomes across occupations. We show how employment, hours worked per week, and weekly earnings changed, by occupation group, and how these changes differed for occupations experiencing larger and smaller coverage gains under the ACA. We also examine whether occupations experiencing increased coverage through nonemployment sources (i.e., through Medicaid or individual plans purchased on the ACA's Marketplace exchanges) also experienced offsetting declines in ESI coverage.

Widely cited predictions that the coverage provisions of the ACA would lead to reduced employment and work hours did not materialize, nor did predictions that employer-based coverage rates would fall as employers dropped coverage. Millions of workers gained insurance coverage under the ACA without the adverse effects on labor markets that some had forecasted.


# KEY FINDINGS

- We find that, from 2010 to 2016, occupations that experienced greater coverage gains under the ACA were not more likely to experience adverse labor market consequences. We find no association between changes in worker coverage rates within an occupation and changes in employment levels, the number of hours worked, or weekly earnings over this period.
- Using American Community Survey (ACS) and Current Population Survey (CPS) data, and after adjusting for changes in demographic composition, about 10.6 million workers were added to the workforce between 2010 and 2016, an 8 percent increase. Nearly all occupations gained workers over this period.
- From 2010 to 2016, workers' coverage rates increased from 81.6 percent to 89.4 percent, the largest gains occurring among occupations with the lowest coverage rates in 2010. Thus, 11 million more workers had coverage in 2016 than would be the case without the ACA. By occupation, we find no association between changes in employment levels and changes in insurance coverage over this period.
- Among workers, we observe a small increase in hours worked per week (0.34 percent) and a small decrease in

weekly earnings (0.85 percent) after adjusting for inflation and changes in workforce composition. Across occupation groups, however, changes in the hours worked per week and weekly earnings bear no relation to the gains in insurance coverage.

- About 9.4 million workers (85 percent of the 11 million gaining coverage) gained coverage through non-employer sources such as individual Marketplace plans or Medicaid. We observe no evidence of a corresponding "crowd-out" effect on ESI coverage. In fact, we find that occupations experiencing larger increases in non-ESI coverage also experienced increased ESI coverage.

# INTRODUCTION

Since the ACA's enactment in 2010, the law's potential impact on workers' insurance coverage and labor market opportunities has been intensely debated. Several studies have shown that, following the implementation of the ACA's main provisions in 2014, insurance coverage among low-income adults has increased greatly,[2] yet researchers have found little evidence of adverse labor market consequences.[3]

Several provisions of the ACA were intended to increase insurance coverage among workers. Workers with incomes between 100 and 400 percent of the federal poverty level benefited from premium subsidies if they did not have affordable ESI offered to them and, in many cases, cost-sharing reductions for Marketplace insurance plans. Depending on their state of residence, workers with incomes below 138 percent of the federal poverty level gained eligibility for public health insurance under the ACA's Medicaid expansion to nonelderly, low-income adults. Starting in 2015, the employer mandate required firms with more than 100 full-time equivalent employees to provide ESI coverage to full-time workers or pay penalties to the federal government if one or more workers claimed premium tax credits to purchase Marketplace coverage.[4] The employer mandate was then phased in to all firms with more than 50 full-time equivalent employees in 2016. The individual mandate imposed a tax penalty on people who could afford coverage (as defined by the ACA's affordability standards) but remained uninsured. Federal tax legislation enacted late in 2017 will eliminate the federal penalty for violations of the ACA's individual coverage requirement in 2019.

Though these ACA provisions were expected to increase insurance coverage, they may also change worker and employer incentives in ways that could produce unintended, adverse labor market outcomes. First, premium subsidies for Marketplace plans and increased eligibility for public health insurance could reduce the number of hours workers choose to work. Lower-earning workers who may have otherwise worked extra hours to pay for health insurance could now receive Medicaid or premium tax credits, enabling a reduction in their work effort. Second, workers may choose to reduce work effort so their income would be low enough to qualify for Medicaid or for financial assistance with Marketplace plans. Third, to avoid the employer mandate, larger employers could reduce their full-time staff by cutting individual employees' hours or shrinking the workforce to below the 50-worker threshold.

Whether such incentives are relevant to the affected workers and employers or would change their behavior are empirical questions. The Congressional Budget Office predicted that the ACA would reduce the total number of hours worked by 1.5 percent to 2.0 percent, mostly because workers would choose to work less.[5] One prominent prediction held that the ACA would reduce aggregate hours worked by 3 percent, equivalent to 4 million full-time jobs.[6] Others predicted, based on available evidence, that adverse employment effects would be minimal, at most.[7]

Others predicted that by providing subsidized insurance options outside of employment, the ACA would cause millions of workers to lose employer health benefits, either because firms would stop offering insurance or because workers would decline coverage offers. The Congressional Budget Office and the Joint Committee on Taxation estimated that the ACA would have a small negative effect on employer coverage, with about 3 to 5 million fewer people obtaining coverage through an employer.[8] Some predicted that many employers would stop offering ESI coverage, leaving millions of Americans uninsured.[9] Urban Institute researchers had estimated the ACA would have very little effect on employer coverage.[10]

Previously, we documented how health insurance coverage changed for workers by occupation.[11] We found that coverage gains from 2010 to 2015 were larger for occupations that had lower pre-ACA coverage rates, lower ESI rates, lower wages, and lower earnings. Through 2015, we found that the ACA provided coverage for an estimated 9.5 million additional workers and 5.2 million of their family members.

In this analysis, with an additional year of data from 2016, we assess whether these dramatic coverage gains carried

adverse labor market consequences. First, we examine whether increased insurance coverage, by occupation group, is associated with changes in employment levels, the number of hours worked per week, and weekly earnings. Then we examine, by occupation group, whether increases in non-ESI coverage (primarily Medicaid or Marketplace plans) were offset by reductions in ESI.

We find that, through 2016, occupations that experienced more substantial coverage gains under the ACA were not more likely to experience adverse labor market consequences. We find no association between changes in worker coverage rates within an occupation and changes in the number of workers, the number of hours worked, or weekly earnings over this period. Put simply, the ACA increased coverage substantially for workers and their family members, without creating any appreciable adverse effects on labor markets.

# FINDINGS

We use data from the ACS to compute, for 2010 and 2016, coverage rates from all sources, the share of workers with ESI, and the number of workers by occupation. The term "worker" refers to people who are currently employed and excludes those who are not currently employed but are seeking employment. We adjust the 2010 measures to account for demographic, occupational, industrial, and geographic changes in workforce composition between 2010 and 2016. (See more details in the data and methods section.) We use the monthly CPS to compute hours worked per week, wage rates, and earnings by occupation type in 2016 and 2010, again adjusting our 2010 estimates to account for compositional changes between 2010 and 2016. These adjustments take changes in population characteristics into account and are necessary to allow an apples-to-apples comparison of insurance coverage and labor market characteristics between 2010 and 2016. For the same reason, we inflate 2010 earnings to 2016 dollars using the consumer price index.

### Change in Employment and Insurance Coverage by Occupation

Table 1 reports changes in employment and coverage rates from 2010 to 2016 by occupations classified by their 2010 coverage rates. An additional 10.6 million workers (8.2 percent) were added to the economy between 2010 and 2016. During the same period, coverage rates for workers increased by 7.8 percentage points, from 81.6 percent to 89.4 percent. The coverage gains were higher for workers in occupations that had lower 2010 coverage rates; occupations with 2010 coverage rates below 70 percent experienced a 15.6 percentage-point increase in coverage, approximately twice the average rate for all workers.

We report changes in employment and coverage rates over this period for specific occupation categories in appendix table A1, which indicates that nearly every occupational category gained workers between 2010 and 2016. The number of workers in the food preparation and serving occupations, for example, increased by 12.5 percent, contrary to assertions about a so-called "restaurant recession."[12] Extraction and office and administrative support occupations were the exception, experiencing decreases of about 40,000 (19.8 percent) and 93,000 (0.51 percent) workers, respectively.

Table 1 and figure 1 illustrate that the change in occupation-level coverage does not correlate with the change in the number of workers in each occupation from 2010 to 2016. Among all occupations, employment increased by 8.2 percent as coverage rose by 7.8 percentage points. But for workers in occupations with very low 2010 insurance coverage rates (fewer than 70 percent of workers covered), employment rose by 9.3 percent, even as health insurance coverage increased by 15.6 percentage points.

A simple trend line in figure 1 indicates a weak and statistically insignificant relationship between the change in an occupation's employment levels and the change in its health insurance coverage from 2010 to 2016. These findings contrast starkly with a prominent prediction that the ACA's coverage gains would reduce aggregate employment by about 4 million full-time jobs.

## Table 1: Change in the Number of Workers and Insurance Coverage Rates, 2010-2016

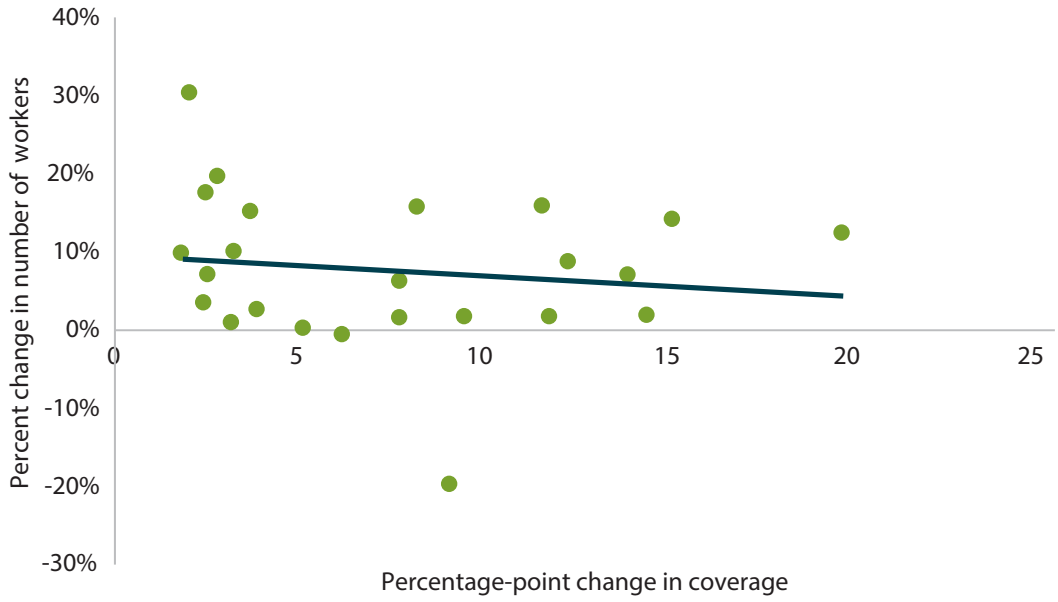
*By occupations' share of insured workers in 2010*

| | Number of Workers in 2010 | Number of Workers in 2016 | Change in number of workers | Change in number of workers (percent) | 2010 coverage rate (adjusted percent) | 2016 coverage rate (percent) | Percentage-point change in coverage rates |
|---|---|---|---|---|---|---|---|
| **All occupations** | **130,325,000** | **140,941,000** | **10,616,000** | **8.2** | **81.6** | **89.4** | **7.8** |
| **Occupations' share of insured workers in 2010** | | | | | | | |
| <70% | 19,617,000 | 21,441,000 | 1,824,000 | 9.3 | 58.4 | 74.0 | 15.6 |
| 70%–79% | 34,121,000 | 36,328,000 | 2,207,000 | 6.5 | 76.4 | 87.3 | 10.9 |
| 80%– 89% | 31,369,000 | 32,177,000 | 809,000 | 2.6 | 84.8 | 91.5 | 6.7 |
| 90%–100% | 45,219,000 | 50,994,000 | 5,776,000 | 12.8 | 93.0 | 96.0 | 3.1 |

Source: Urban Institute analysis of 2010 and 2016 ACS and Integrated Public Use Microdata Series-USA data.

*Notes: 2010 estimates are adjusted to reflect the demographic, occupational, industrial, and geographic composition of the 2016 workforce. Worker totals by occupation groups do not sum to estimated total number of workers due to rounding. Similarly, changes in the number of workers and percentage-point change in coverage rates may not report exact difference across columns due to rounding.*

## Figure 1: Percent Change in Number of Workers and Percentage-Point Change in Coverage Rates, 2010-2016 by Occupation




Source: Urban Institute analysis of 2010 and 2016 ACS, CPS, and Integrated Public Use Microdata Series-USA data.

*Notes: Slope of best fit line indicates that a 10 percentage-point increase in coverage is associated with a 1.8 percent decline in the number of workers, with a 95% confidence interval of (-8.6%, 4.9%). Estimated coverage rates for 2010 are adjusted to reflect the demographic, occupational, industrial, and geographic composition of the 2016 workforce.*

### Changes in Insurance Coverage, Hours Worked, and Earnings by Occupation

Among occupations that exhibited larger gains in coverage under the ACA through 2016, we observe no association with changes in the number of workers. However, the ACA may have influenced workers to reduce work intensity or earnings to gain eligibility for Medicaid or subsidized premiums on the individual Marketplace. It may also have spurred some employers to reduce the number of full-time equivalent workers to avoid employer mandate penalties. In table 2, we describe the change in coverage, hours worked, and earnings from 2010 to 2016 by occupations classified by their 2010 hourly wages; changes by specific occupation categories are described in appendix table A2. We find that, over this period, the number of hours worked per week stayed relatively constant. We would expect the coverage provisions of the ACA to disproportionately increase coverage for workers with lower wages because they are more likely to have lower family income and qualify for Medicaid coverage or larger subsidies in the Marketplaces. Indeed, we find that workers in lower-wage occupations experienced larger coverage gains from 2010 to 2016.

In 2010, workers averaged 39.1 hours of work per week. By 2016, workers averaged an additional 0.1 hours (7.8 minutes) of work per week. With the adjusted earnings measure, we estimate that real weekly earnings slightly declined from 2010 to 2016 by 0.9 percent. Without adjusting for demographic and other compositional changes, real weekly earnings increased 2.4 percent, from $920 in 2010 (not shown in table) to $942 in 2016.[13]

Across occupations, the change in workers' hours between 2010 and 2016 varied slightly. Extraction workers were the outliers with an average decrease of 5.3 hours per week, a 9.7 percent decline.[14] Among the remaining occupations, the change in number of hours worked ranges from -3.1 percent to 3.8 percent. We also find modest variation in earnings between 2010 and 2016, outside of a few outliers. Though farming, fishing, and forestry occupations experienced a substantial 14 percent increase in earnings from 2010 to 2016, all other occupations' earnings changed by between -6.4 percent and 3.9 percent.

Figures 2 and 3 indicate that little of the variation in hours worked and earnings per week across occupations can be explained by the change in coverage rates. Because occupation-level changes in coverage are larger in occupations with lower 2010 wages and lower 2010 coverage rates, we consider changes in coverage across occupations to be highly aligned with the degree to which those occupations were affected by the ACA. Figure 2 demonstrates that occupations with larger coverage increases between 2010 and 2016 also experienced slight increases in hours worked. However, this relationship is not statistically significant ($p$=0.24). Figure 3 shows that larger changes in coverage rates were associated with small percent increases in weekly earnings ($p$=0.08). If newly available subsidized coverage causes workers to cut back on work effort, or if employers were cutting back workers' hours in a widespread manner, we would expect to see occupations with larger coverage gains experience declines in hours worked. Instead we find the opposite.

## Table 2: Change in Hours Worked and Earnings per Week, 2010-2016

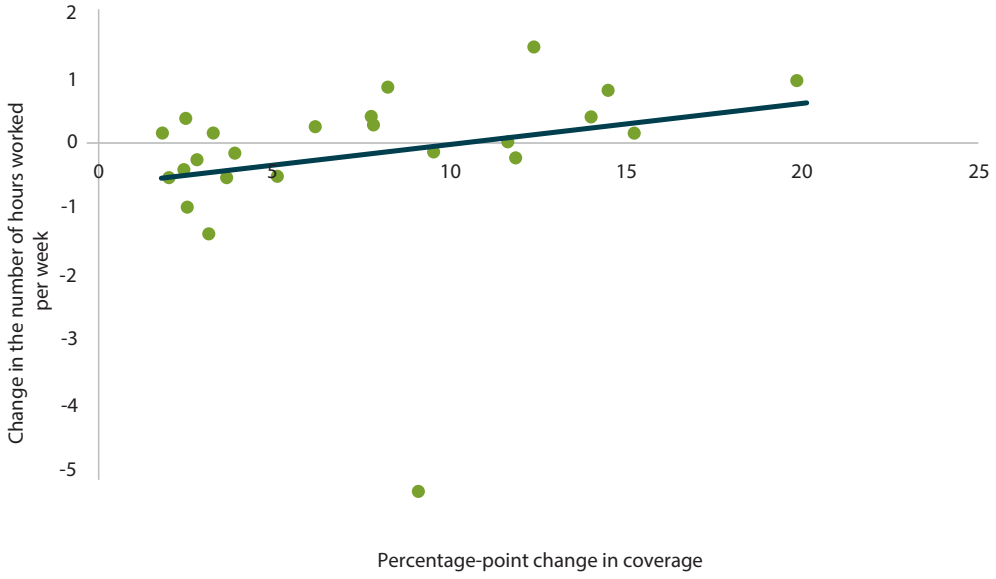
*By occupations' 2010 hourly wages*

| | Hours worked per week in 2010 (adjusted) | Hours worked per week in 2016 | Change in hours worked (hours) | Change in hours worked (percent) | Weekly earnings, 2010 (adjusted, 2016 dollars) | Weekly earnings, 2016 | Percent change in earnings | Percentage-point gain in coverage rate |
|---|---|---|---|---|---|---|---|---|
| **All occupations** | **39.1** | **39.3** | **0.1** | **0.3** | **950** | **942** | **-0.9** | **7.8** |
| **Occupations' 2010 hourly wage** | | | | | | | | |
| <$15 | 36.5 | 36.9 | 0.3 | 0.9 | 559 | 560 | 0.1 | 14.8 |
| $15–$19 | 38.9 | 39.1 | 0.3 | 0.7 | 798 | 802 | 0.5 | 8.2 |
| $20–$29 | 41.2 | 41.0 | -0.2 | -0.5 | 1,300 | 1,282 | -1.4 | 3.6 |
| ≥$30 | 42.0 | 41.6 | -0.4 | -1.0 | 1,554 | 1,527 | -1.7 | 2.2 |

Source: Urban Institute analysis of 2010 and 2016 ACS, CPS, and Integrated Public Use Microdata Series-USA data.

*Notes: Earnings and hours worked are estimated using the monthly CPS. Figures for 2010 are adjusted to reflect the demographic, occupational, industrial, and geographic composition of the 2016 workforce. Change in hours and percent change in earnings may not report exact difference across columns due to rounding.*

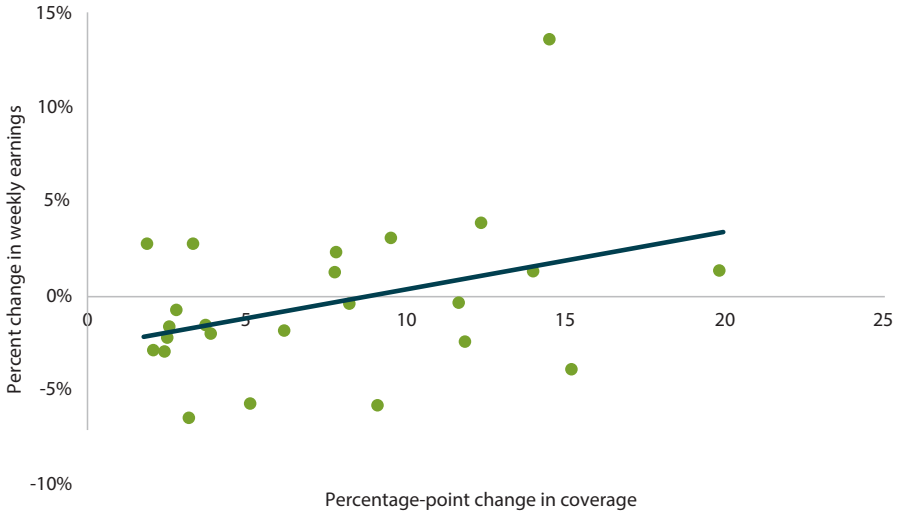
## Figure 2: Change in Hours Worked per Week and Percentage-Point Gain in Coverage Rates, 2010-2016 by Occupation




Source: Urban Institute analysis of 2010 and 2016 ACS, CPS, and Integrated Public Use Microdata Series-USA data.

*Notes: Slope of best fit line indicates that a 10 percentage-point increase in coverage is associated with a 0.62 hour increase in hours worked per week, with a 95% confidence interval of (-0.44, 1.68). Coverage rates and the number of hours worked in 2010 are adjusted to reflect the demographic, occupational, industrial, and geographic composition of the 2016 workforce.*

## Figure 3: Percent Change in Weekly Earnings and Percentage-Point Gain in Coverage Rates, 2010-2016 by Occupation




Source: Urban Institute analysis of 2010 and 2016 ACS, CPS, and Integrated Public Use Microdata Series-USA data.

*Notes: Slope of best fit line indicates that a 10 percentage-point increase in coverage is associated with a 3 percent increase in weekly earnings, with a 95% confidence interval of (-0.4%, 6.3%). Coverage rates and weekly earnings in 2010 are adjusted to reflect the demographic, occupational, industrial, and geographic composition of the 2016 workforce.*

### Change in Employer-Sponsored and Non-Employer-Sponsored Coverage by Occupation

One often-cited concern about the ACA was whether the expansion of Medicaid and the availability of premium subsidies for Marketplace plans would replace ESI plan coverage.[15] Individual coverage may crowd out employer coverage if those who are gaining coverage under the ACA were previously privately insured rather than uninsured. The Congressional Budget Office predicted that subsidized individual coverage would lead some employers to discontinue offering ESI, slightly reducing ESI coverage. Others predicted large declines in ESI coverage. In table 3, we investigate whether the expansion of non-ESI coverage (i.e., Medicaid coverage and Marketplace exchange plans) is associated with changes in ESI coverage by occupations classified by their 2010 hourly wage rates. Appendix table A3 presents changes in ESI and non-ESI coverage by specific occupation categories.

Table 3 lists occupation groups from lowest to highest hourly adjusted 2010 wages. Occupations with the lowest wages in 2010 tended to have the lowest ESI coverage rates before the ACA. ESI coverage among workers increased slightly from 70.0 percent in 2010 to 71.2 percent in 2016. Non-ESI coverage increased from 11.6 percent to 18.2 percent over the period. As a result, of the 11.0 million workers who gained coverage from 2010 to 2016, more than 9.4 million (85 percent) gained non-ESI coverage and 1.6 million gained ESI coverage (not shown in table).

Appendix table A3 indicates every occupational category experienced increased non-ESI coverage between 2010 and 2016. These increases were largest among low-wage occupations. Among the six occupations with hourly wages under $15 in 2010, ESI coverage rates for workers ranged from 34 to 62 percent. In contrast, among the 12 occupations with average hourly wages above $20 in 2010, ESI rates ranged from 66 to 90 percent. The rate of non-ESI coverage is lower among higher-wage occupations, with some exceptions. For example, despite an average 2010 hourly wage over $30, 12.0 percent of workers in legal occupations were covered by non-ESI plans.

Table 3 and figure 4 show a positive association between the changed rates of both ESI and non-ESI coverage between 2010 and 2016. A positive slope indicates that in the very occupations that were most targeted by the ACA and consequently experienced the highest non-ESI coverage gains by 2016, there were larger increases in ESI coverage as well. The trend line in figure 4 indicates that a 10 percentage-point increase in non-ESI coverage is associated with a 3.8 percentage-point increase in ESI coverage; this relationship is statistically significant ($p<0.01$). Thus, non-ESI coverage, despite some predictions to the contrary, did not crowd out ESI coverage. If a substantial number of employers dropped ESI coverage in response to the ACA, we would expect ESI coverage to decline among lower-wage workers who are more likely eligible for Marketplace subsidies. We find the opposite.

## Table 3: Change in ESI and Non-ESI Coverage Rates, 2010-2016

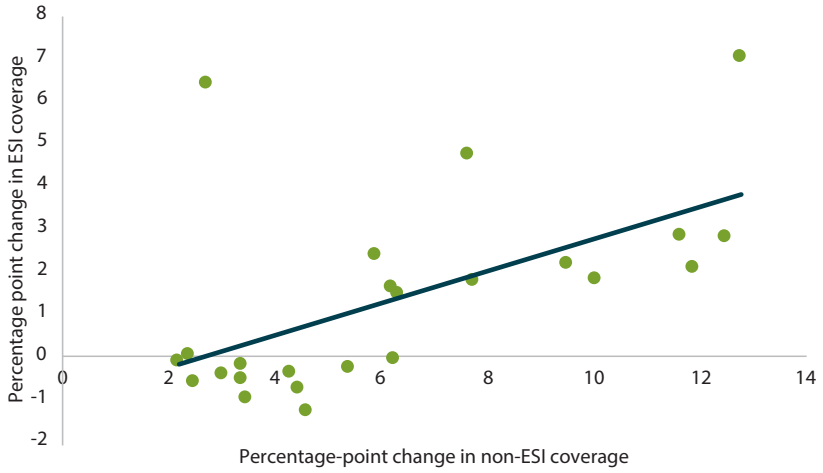
*By occupations' 2010 hourly wages*

| | 2010 ESI rate (adjusted percent) | 2016 ESI rate (percent) | Percentage-point change in ESI rates | 2010 non-ESI coverage rate (adjusted percent) | 2016 non-ESI coverage rate (percent) | Percentage-point change in non-ESI coverage rates |
|---|---|---|---|---|---|---|
| **All occupations** | **70.0** | **71.2** | **1.2** | **11.6** | **18.2** | **6.6** |
| **Occupations' 2010 hourly wage** | | | | | | |
| <$15 | 50.3 | 53.7 | 3.5 | 15.9 | 27.2 | 11.3 |
| $15–$19 | 68.6 | 70.0 | 1.4 | 11.2 | 18.0 | 6.8 |
| $20–$29 | 82.1 | 81.7 | -0.5 | 9.8 | 13.9 | 4.0 |
| ≥$30 | 87.8 | 87.6 | -0.3 | 7.2 | 9.7 | 2.5 |

Source: Urban Institute analysis of 2010 and 2016 ACS and Integrated Public Use Microdata Series-USA data.

*Notes: ESI = employer-sponsored insurance. Figures for 2010 are adjusted to reflect the demographic, occupational, industrial, and geographic composition of the 2016 workforce. Percentage point change in ESI rates and non-ESI rates may not report exact difference across columns due to rounding.*

## Figure 4: Percentage-Point Change in ESI and Non-ESI Coverage Rates, 2010-2016 by Occupation




Source: Urban Institute analysis of 2010 and 2016 American Community Survey and Integrated Public Use Microdata Series-USA data.

*Notes: ESI = employer-sponsored insurance. Slope of best fit line indicates that a 10 percentage-point increase in non-ESI coverage is associated with a 3.8 percentage-point increase in ESI coverage, with a 95% confidence interval of (1.4%, 6.1%). ESI and non-ESI coverage rates and the number of hours worked in 2010 are adjusted to reflect the demographic, occupational, industrial, and geographic composition of the 2016 workforce.*

# DISCUSSION

Prior research has shown significant gains in health insurance coverage following the ACA. Previously, we showed that health insurance coverage gains were highest among workers in occupations with the lowest pre-ACA coverage rates, lowest hourly wages, lowest rates of ESI-coverage, and the lowest weekly earnings.[16] However, in contrast to some well-publicized and controversial predictions, the coverage gain for an estimated 11.0 million workers between 2010 and 2016 did not produce unintended consequences in the form of reduced employment, reduced earnings, or reduced number of hours worked. In this brief, we find little to no association between an occupation's change in health insurance coverage and these labor market factors.

From 2010 to 2016, total employment increased by 10.6 million workers, with nearly every occupation gaining employees over this period. However, there is no observed relationship between the change in employment levels and the change in the coverage rate across occupations. This finding runs contrary to predictions that the ACA would reduce employment among those most affected by the coverage provisions.[17] In aggregate, real earnings fell slightly (holding the workforce composition fixed at 2016 levels), and the number of hours worked increased slightly during this period. Again, we find across occupations that larger coverage gains under the ACA were not associated with lower real earnings or hours worked. Finally, while ESI rates increased slightly from 2010 to 2016, non-ESI coverage increased dramatically, which is expected due to the availability of Marketplace plans with and without subsidies and Medicaid program eligibility expansions for low-income adults. Still, among occupations that experienced large increases in the rate of non-ESI coverage, we do not observe declines or smaller increases in ESI coverage. Rather, we found a positive association between ESI and non-ESI coverage across occupations suggesting that both ESI and non-ESI coverage increased to support workers in occupations with low pre-ACA coverage rates.

Though our adjusted measures account for the changing demographic, occupational, industrial, and geographic workforce between 2010 and 2016, our analysis may not fully account for economic and labor market recovery following the Great Recession. The recovery may have affected occupation groups in ways we do not fully control, which could affect our interpretation of the findings. For example, even though we find no reduction in hours worked among occupations with the largest coverage gains, it is possible their hours would have increased by a larger amount due to the economic recovery absent the ACA. Additional research is needed to better isolate the causal effect of the ACA on the labor market outcomes we examine. Nonetheless, if adverse labor market consequences of the magnitude some had predicted had occurred, some sign of it would likely have shown up in our data, but it does not. Instead, we find broadly improving labor market outcomes under the ACA, substantial gains in health insurance coverage, and no adverse consequences for workers in occupations with the largest coverage gains.

# DATA AND METHODS

The primary data source used in this brief is the CPS, which provides monthly updates on the status of labor markets. We use CPS information on workers' wages, number of hours worked per week, and weekly earnings. A quarter of CPS respondents are asked about these topics each month. We pooled all months in 2010 and 2016 to establish an annual average of these outcomes by occupation. Hourly wages in the CPS are only assessed for workers who reported an hourly wage; we calculated the hourly wage for all other workers by dividing their reported weekly earnings by the number of hours worked per week. Wages and earnings information in 2010 are adjusted to 2016 dollars using the Bureau of Labor Statistics' consumer price index.

We use data from the ACS to calculate health insurance coverage rates by occupation.[18] The ACS provides demographic, employment, and health insurance information for more than 2 million Americans each year. Using 2010 and 2016 ACS data for nonelderly adults (ages 19 to 64) from the Integrated Public Use Microdata Series, we estimate workers' health insurance coverage rates, including ESI coverage, by occupation.

We use the Integrated Public Use Microdata Series-harmonized 2010 Census Bureau occupation classifications to identify occupation-specific uninsured, ESI, and non-ESI rates from the ACS and occupation-specific wages, hours worked, and weekly earnings from the CPS. Observation counts within detailed occupation categories are too small to provide precise estimates. Instead, we aggregate occupations into 24 predefined categories. All estimates use individual-level survey weights.

Between 2010 and 2016, factors other than the ACA may have affected workers' coverage, wages, and earnings (i.e., macroeconomic improvements or decreased labor supply because of an aging population). To separate these factors from the ACA, we compare our 2016 coverage and labor measures with a "counterfactual" 2010 estimate that is adjusted to reflect the demographic, occupational, industrial, and geographic composition of the 2016 workforce. Specifically, we calculate the weighted average for each outcome measure by crossing all combinations of age groups, gender, education, race and ethnicity, occupation classifications, industrial classifications, and state. We then match the 2010 outcome cell to the corresponding 2016 cell, creating the "adjusted" 2010 estimate. Across occupations, the largest difference between the actual 2010 measures and adjusted 2010 measures are minimal: 1.8 percentage points for uninsured rates; 1.7 percentage points for ESI rates; 0.8 percentage points for non-ESI rates; 1.2 hours worked per week; and $70 for weekly earnings.

# APPENDIX. ANALYSIS BY OCCUPATIONS

## Table A1: Change in the Number of Workers and Insurance Coverage Rates, 2010-2016

*By occupation*

| | Number of workers, 2010 | Number of workers, 2016 | Change in number of workers | Percent change in number of workers | 2010 coverage rate (adjusted percent) | 2016 coverage rate (percent) | Percentage-point change in coverage rates |
|---|---|---|---|---|---|---|---|
| **All occupations** | **130,325,000** | **140,941,000** | **10,616,000** | **8.2** | **81.6** | **89.4** | **7.8** |
| **Occupations with <70% 2010 coverage rate** | **19,617,000** | **21,441,000** | **1,824,000** | **9.3** | **58.4** | **74.0** | **15.6** |
| Farming, fishing, and forestry | 939,000 | 958,000 | 20,000 | 2.1 | 49.5 | 64.0 | 14.5 |
| Food preparation and serving | 6,908,000 | 7,775,000 | 867,000 | 12.5 | 56.5 | 76.3 | 19.8 |
| Construction | 6,641,000 | 7,223,000 | 582,000 | 8.8 | 59.8 | 72.1 | 12.4 |
| Building and grounds cleaning and maintenance | 5,129,000 | 5,485,000 | 356,000 | 6.9 | 60.8 | 74.8 | 14.0 |
| **Occupations with 70%–79% coverage rate** | **34,121,000** | **36,328,000** | **2,207,000** | **6.5** | **76.4** | **87.3** | **10.9** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Personal care and service | 4,641,000 | 5,300,000 | 659,000 | 14.2 | 70.4 | 85.6 | 15.2 |
| Transportation and material moving | 7,629,000 | 8,839,000 | 1,210,000 | 15.9 | 73.1 | 84.7 | 11.7 |
| Health care support | 3,338,000 | 3,401,000 | 63,000 | 1.9 | 76.9 | 88.8 | 11.8 |
| Installation, maintenance, and repair | 4,434,000 | 4,502,000 | 68,000 | 1.5 | 79.3 | 87.1 | 7.8 |
| Sales and related | 13,880,000 | 14,127,000 | 247,000 | 1.8 | 79.7 | 89.2 | 9.5 |
| Extraction | 199,000 | 160,000 | -40,000 | -19.8 | 79.8 | 88.9 | 9.1 |
| **Occupations with 80%–89% 2010 coverage rate** | **31,369,000** | **32,177,000** | **809,000** | **2.6** | **84.8** | **91.5** | **6.7** |
| Production | 7,902,000 | 8,410,000 | 508,000 | 6.4 | 80.0 | 87.8 | 7.8 |
| Arts, design, entertainment, sports, and media | 2,419,000 | 2,802,000 | 383,000 | 15.8 | 83.6 | 91.8 | 8.2 |
| Office and administrative support | 18,132,000 | 18,039,000 | -93,000 | -0.5 | 86.4 | 92.6 | 6.2 |
| Protective service | 2,916,000 | 2,926,000 | 10,000 | 0.4 | 89.4 | 94.5 | 5.1 |
| **Occupations with 90%–100% 2010 coverage rate** | **45,219,000** | **50,994,000** | **5,776,000** | **12.8** | **93.0** | **96.0** | **3.1** |
| Management, business, science, and arts | 12,767,000 | 14,716,000 | 1,949,000 | 15.3 | 90.8 | 94.5 | 3.7 |
| Community and social services | 2,204,000 | 2,426,000 | 221,000 | 10.0 | 92.3 | 95.6 | 3.3 |
| Education, training, and library | 8,228,000 | 8,451,000 | 223,000 | 2.7 | 92.5 | 96.3 | 3.9 |
| Legal | 1,525,000 | 1,538,000 | 13,000 | 0.8 | 93.4 | 96.6 | 3.2 |
| Business operations specialists | 3,157,000 | 3,780,000 | 623,000 | 19.7 | 93.6 | 96.4 | 2.8 |
| Health care practitioners and technicians | 7,330,000 | 8,630,000 | 1,300,000 | 17.7 | 94.0 | 96.5 | 2.5 |
| Financial specialists | 3,047,000 | 3,152,000 | 106,000 | 3.5 | 94.7 | 97.2 | 2.4 |
| Life, physical, and social science | 1,163,000 | 1,248,000 | 85,000 | 7.3 | 95.0 | 97.6 | 2.6 |
| Computer and mathematical | 3,376,000 | 4,396,000 | 1,020,000 | 30.2 | 95.3 | 97.3 | 2.1 |
| Architecture and engineering | 2,421,000 | 2,658,000 | 237,000 | 9.8 | 95.6 | 97.5 | 1.9 |

Source: Urban Institute analysis of 2010 and 2016 ACS and Integrated Public Use Microdata Series-USA data.

*Notes: Coverage rate estimates for 2010 are adjusted to reflect the demographic, occupational, industrial, and geographic composition of the 2016 workforce. Occupations are sorted by lowest to greatest 2010-adjusted coverage rates. Worker totals by occupation groups do not sum to estimated total number of workers due to rounding. Similarly, changes in the number of workers and percentage-point change in coverage rates may not report exact difference across columns due to rounding.*

## Table A2: Change in Hours Worked and Earnings per Week, 2010-2016

*By occupation*

| | Hours worked per week, 2010 (adjusted) | Hours worked per week, 2016 | Change in hours worked | Pecent change in hours worked | 2010 weekly earnings (adjusted, 2016 dollars) | 2016 weekly earnings | Percent change in earnings | Percentage-point change in coverage rate |
|---|---|---|---|---|---|---|---|---|
| **All occupations** | **39.1** | **39.3** | **0.1** | **0.3** | **950** | **942** | **-0.9** | **7.8** |
| **Occupations with 2010 hourly wage <$15** | **36.5** | **36.9** | **0.3** | **0.9** | **559** | **560** | **0.1** | **14.8** |
| Food preparation and serving | 32.8 | 33.7 | 1.0 | 3.0 | 432 | 438 | 1.4 | 19.8 |
| Farming, fishing, and forestry | 42.6 | 43.4 | 0.8 | 1.9 | 507 | 576 | 13.7 | 14.5 |
| Building and grounds cleaning and maintenance | 35.4 | 35.8 | 0.4 | 1.2 | 506 | 512 | 1.3 | 14.0 |
| Personal care and service | 34.4 | 34.6 | 0.2 | 0.5 | 506 | 486 | -3.9 | 15.2 |
| Health care support | 36.1 | 36.0 | -0.2 | -0.5 | 537 | 524 | -2.4 | 11.8 |
| Transportation and material moving | 40.4 | 40.4 | 0.0 | 0.1 | 739 | 736 | -0.3 | 11.7 |
| **Occupations with 2010 hourly wage of $15–$19** | **38.9** | **39.1** | **0.3** | **0.7** | **798** | **802** | **0.5** | **8.2** |
| Production | 40.1 | 40.5 | 0.4 | 1.1 | 738 | 748 | 1.3 | 7.8 |
| Office and administrative support | 37.1 | 37.4 | 0.3 | 0.7 | 710 | 697 | -1.8 | 6.2 |
| Sales and related | 38.4 | 38.3 | -0.1 | -0.2 | 816 | 842 | 3.1 | 9.5 |
| Construction | 39.5 | 41.0 | 1.5 | 3.8 | 867 | 901 | 3.9 | 12.4 |
| Installation, maintenance, and repair | 41.3 | 41.6 | 0.3 | 0.7 | 914 | 936 | 2.4 | 7.8 |
| Protective service | 41.4 | 40.9 | -0.5 | -1.2 | 982 | 927 | -5.6 | 5.1 |
| **Occupations with 2010 hourly wage of $20–$29** | **41.2** | **41.0** | **-0.2** | **-0.5** | **1,300** | **1,282** | **-1.4** | **3.6** |
| Extraction | 54.4 | 49.1 | -5.3 | -9.7 | 1,296 | 1,222 | -5.8 | 9.1 |
| Community and social services | 38.8 | 38.9 | 0.2 | 0.4 | 952 | 979 | 2.9 | 3.3 |
| Education, training, and library | 38.0 | 37.9 | -0.1 | -0.3 | 985 | 965 | -2.0 | 3.9 |
| Arts, design, entertainment, sports, and media | 36.9 | 37.8 | 0.9 | 2.4 | 1,097 | 1,092 | -0.4 | 8.2 |
| Business operations specialists | 41.1 | 40.9 | -0.2 | -0.5 | 1,289 | 1,280 | -0.7 | 2.8 |
| Health care practitioners and technicians | 38.7 | 39.1 | 0.4 | 1.0 | 1,209 | 1,183 | -2.2 | 2.5 |
| Life, physical, and social science | 41.2 | 40.2 | -1.0 | -2.3 | 1,325 | 1,305 | -1.6 | 2.6 |
| Financial specialists | 41.6 | 41.2 | -0.4 | -0.9 | 1,389 | 1,349 | -2.9 | 2.4 |
| Management, business, science, and arts | 44.2 | 43.7 | -0.5 | -1.1 | 1,502 | 1,480 | -1.5 | 3.7 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Occupations with 2010 hourly wage ≥$30** | **42.0** | **41.6** | **-0.4** | **-1.0** | **1,554** | **1,527** | **-1.7** | **2.2** |
| Architecture and engineering | 42.0 | 42.2 | 0.2 | 0.4 | 1,505 | 1,547 | 2.8 | 1.9 |
| Legal | 44.0 | 42.6 | -1.4 | -3.1 | 1,663 | 1,556 | -6.4 | 3.2 |
| Computer and mathematical | 41.3 | 40.8 | -0.5 | -1.2 | 1,548 | 1,503 | -2.9 | 2.1 |

Source: Urban Institute analysis of 2010 and 2016 ACS, CPS, and Integrated Public Use Microdata Series-USA data.

*Notes: Earnings and hours worked are estimated using the monthly CPS. Figures for 2010 are adjusted to reflect the demographic, occupational, industrial, and geographic composition of the 2016 workforce. Occupations are sorted by lowest to greatest 2010-adjusted wages. Change in hours and percent change in earnings may not report exact difference across columns due to rounding.*

## Table A3: Change in ESI and Non-ESI Coverage Rates, 2010-2016

*By occupation*

| | 2010 ESI rate (adjusted percent) | 2016 ESI rate (percent) | Percentage-point change in ESI rates | 2010 non-ESI coverage rate (adjusted percent) | 2016 non-ESI coverage rate (percent) | Percentage-point change in non-ESI coverage rates |
|---|---|---|---|---|---|---|
| **All occupations** | **70.0** | **71.2** | **1.2** | **11.6** | **18.2** | **6.6** |
| **Occupations with 2010 hourly wage <$15** | **50.3** | **53.7** | **3.5** | **15.9** | **27.2** | **11.3** |
| Food preparation and serving | 39.4 | 46.5 | 7.1 | 17.1 | 29.9 | 12.7 |
| Farming, fishing, and forestry | 34.2 | 37.1 | 2.9 | 15.3 | 26.9 | 11.6 |
| Building and grounds cleaning and maintenance | 45.8 | 47.9 | 2.1 | 15.0 | 26.9 | 11.9 |
| Personal care and service | 47.8 | 50.5 | 2.8 | 22.6 | 35.1 | 12.4 |
| Health care support | 60.7 | 62.5 | 1.8 | 16.2 | 26.3 | 10 |
| Transportation and material moving | 61.8 | 64.0 | 2.2 | 11.2 | 20.7 | 9.5 |
| **Occupations with 2010 hourly wage of $15–$19** | **68.6** | **70.0** | **1.4** | **11.2** | **18.0** | **6.8** |
| Production | 71.5 | 73.0 | 1.5 | 8.5 | 14.8 | 6.3 |
| Office and administrative support | 76.0 | 76.0 | 0.0 | 10.4 | 16.7 | 6.2 |
| Sales and related | 64.5 | 66.4 | 1.8 | 15.2 | 22.9 | 7.7 |
| Construction | 48.3 | 53.1 | 4.7 | 11.4 | 19.1 | 7.6 |
| Installation, maintenance, and repair | 69.9 | 71.6 | 1.6 | 9.3 | 15.5 | 6.2 |
| Protective service | 82.0 | 81.8 | -0.3 | 7.4 | 12.8 | 5.4 |
| **Occupations with 2010 hourly wage of $20–$29** | **82.1** | **81.7** | **-0.5** | **9.8** | **13.9** | **4.0** |
| Extraction | 74.4 | 80.9 | 6.4 | 5.3 | 8.0 | 2.7 |
| Community and social services | 82.3 | 81.0 | -1.3 | 10.0 | 14.6 | 4.6 |
| Education, training, and library | 83.9 | 83.5 | -0.4 | 8.6 | 12.9 | 4.3 |
| Arts, design, entertainment, sports, and media | 65.8 | 68.2 | 2.4 | 17.8 | 23.6 | 5.9 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Business operations specialists | 84.7 | 84.2 | -0.6 | 8.9 | 12.3 | 3.4 |
| Health care practitioners and technicians | 85.0 | 84.0 | -0.9 | 9.0 | 12.4 | 3.4 |
| Life, physical, and social science | 87.1 | 86.7 | -0.4 | 7.9 | 10.9 | 3.0 |
| Financial specialists | 86.4 | 86.4 | 0.1 | 8.4 | 10.7 | 2.4 |
| Management, business, science, and arts | 80.6 | 79.8 | -0.8 | 10.3 | 14.7 | 4.4 |
| **Occupations with 2010 hourly wage ≥$30** | **87.8** | **87.6** | **-0.3** | **7.2** | **9.7** | **2.5** |
| Architecture and engineering | 90.1 | 89.5 | -0.6 | 5.5 | 8.0 | 2.5 |
| Legal | 81.4 | 81.2 | -0.2 | 12.0 | 15.4 | 3.4 |
| Computer and mathematical | 88.7 | 88.6 | -0.1 | 6.6 | 8.7 | 2.2 |

Source: Urban Institute analysis of 2010 and 2016 ACS and Integrated Public Use Microdata Series-USA data.

*Notes: Figures for 2010 are adjusted to reflect the demographic, occupational, industrial, and geographic composition of the 2016 workforce. Occupations are sorted by lowest to greatest 2010-adjusted wages. Percentage point change in ESI rates and non-ESI rates may not report exact difference across columns due to rounding.*

# NOTES

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13. A slight decrease in real earnings from 2010 to 2016 is not unique to this period. Examining earnings from 2004 to 2010, and adjusting demographic and worker composition to 2010 population characteristics, we observe that real weekly earnings (in 2010 dollars) decreased from $866 to $836, a nearly 3.5 percent decline. The unadjusted change in real earnings indicates a 0.8 percent decrease from 2004 to 2010. This is consistent with Loprest P, Nightingale D. "The Nature of Work and the Social Safety Net." Washington: Urban Institute; 2018. https://www.urban.org/research/publication/nature-work-and-social-safety-net., which documents long-term stagnation in median wages and earnings.
14. Between 2010 and 2016, coal mining employment decreased substantially. Also, oil and gas extraction employment peaked in 2014 before falling sharply. Both trends may have contributed to reduced hours worked per week in extraction occupations.

15. See note 9.
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18. The Annual Social and Economic Supplement to the CPS also contains health insurance information for workers, but the survey redesigned the health insurance questions in 2013 to include both "point-in-time" estimates and "entire-year" estimates. This distinction was not made in prior years. Consequently, trends in coverage before and after 2013 using the ASEC supplement are not comparable. For more details, see: https://www.cbpp.org/research/understanding-the-census-bureaus-upcoming-health-insurance-coverage-estimates.



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**Acknowledgments**
This brief was funded by the Robert Wood Johnson Foundation. We are grateful to them and to all our funders, who make it possible for Urban to advance its mission. We are also grateful to Linda Blumberg and John Holahan for many helpful comments, and to Rachel Kenney for copy editing.

The views expressed are those of the authors and should not be attributed to the Urban Institute, its trustees, or its funders. Funders do not determine research findings or the insights and recommendations of Urban experts. Further information on the Urban Institute's funding principles is available at **www.urban.org/support.**

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