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Effects of the Affordable Care Act on part-time employment: Early evidence

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W.E. UPJOHN INSTITUTE
FOR EMPLOYMENT RESEARCH
Researching the causes and consequences of unemployment

Effects of the Affordable Care Act on Part-Time Employment: Early Evidence

Upjohn Institute Working Paper 16-258

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June 2016

ABSTRACT

The Affordable Care Act (ACA) requires employers with at least 50 full-time-equivalent employees to offer "affordable" health insurance to employees working 30 or more hours per week. If employers do not comply with the mandate, they may face substantial financial penalties. Employers can potentially circumvent the mandate by reducing weekly hours below the 30-hour threshold or by using other nonstandard employment arrangements (direct-hire temporaries, agency temporaries, small contractors, and independent contractors). We examine the effects of the ACA on short-hours, part-time employment. Using monthly CPS data, we estimate that the ACA resulted in an increase in low-hours, involuntary part-time employment of a half-million to a million workers in retail, accommodations, and food services, the sectors in which employers are most likely to reduce hours if they choose to circumvent the mandate, and also the sectors in which low-wage workers are most likely to be affected. Our empirical strategy uses as a control group Hawaii, which has had a more stringent employer health insurance mandate than that of the ACA for several decades. The findings are robust to placebo tests and alternative specifications.

JEL Classification Codes: I13, J23, J3

Key Words: Affordable Care Act, employer-sponsored health insurance, employer mandate, part-time employment, involuntary part-time employment

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Despite considerable improvement since the Great Recession, the labor market continues to show signs of weakness, with historically low labor force participation rates and flat or minimal growth in real wages and benefits. In this context, the implementation of the Patient Protection and Affordable Care Act (ACA) presents an opportunity to significantly improve compensation, particularly for low-wage workers. Employer-sponsored health insurance is an important component of compensation, though its incidence was declining sharply prior to the ACA, both because fewer employers were offering this benefit and because employers have passed along higher premium costs to employees, leading fewer of them to take health insurance when offered (Vistnes et al. 2010). Under the ACA's provisions, employers with at least 50 full-time-equivalent workers (FTEs) are required to offer "affordable" health insurance meeting minimum standards of coverage to their full-time employees, defined as those who work at least 30 hours per week. Large employers who do not offer any health insurance to full-time employees, whose policies do not cover minimum benefits, or who do not cover a sufficient share of the policy's premium may face substantial financial penalties.

While the employer mandate in the ACA is intended to increase employer-sponsored health insurance and thereby improve workers' compensation and the quality of jobs, some are concerned it could backfire. In theory, to the degree that employees value the health insurance benefit offered, employers may pass along the premium costs to workers in the form of lower real wages or other reduced benefits. Particularly for low-wage workers, however, employers' ability to lower wages may be constrained by the minimum wage. Moreover, employers may avoid cutting nominal wages because of adverse effects on morale and productivity, and inflation may not be a viable mechanism to reduce real wages if the relatively low rates of price growth of the recent past persist.

Alternatively, large employers may increase their use of workers in staffing arrangements that are not covered by the employer mandate: workers averaging less than 30 hours per week or working in organizations with fewer than 50 full-time employees. Federal rules stipulate that to determine work hours for a particular employee, an employer may use up to a 12-month "look back" period to establish whether an employee works an annual average of 30 hours per week. As a result, employers will not be required to offer insurance to many, if not most, on-call and temporary workers. To circumvent the mandate, therefore, employers may choose to reduce standard weekly hours below 30 or shift their mix of staffing toward greater use of on-call,

direct-hire temporaries, or agency temporaries. Additionally, employers may choose to outsource certain tasks to firms with fewer than 50 full-time employees. Ironically, the employer mandate could reduce the quality of jobs for low- and middle-skilled workers by increasing the share of low-hours part-time, temporary, and contract employment—categories that often are associated with relatively low compensation and job instability.

Reflecting such concerns, a July 2013 letter from three of the largest labor unions to congressional leaders argued that the law would "shatter not only our hard-earned health benefits, but destroy the foundation of the 40-hour work week that is the backbone of the American middle class."[1] The union leaders argued, and some public accounts confirm, that employers would be incentivized to keep or cut workers' hours to below 30 hours per week to avoid the obligation to provide insurance. For example, as of September 2014, several months before the mandate took effect for employers with at least 100 FTEs, *Investor's Business Daily* had compiled a list of 450 public and private employers for which it claims there was "strong proof" (i.e., official documents or accounts) that these employers had cut work hours from full- to part-time or reduced hours of new hires to be less than 30 in order to circumvent the health insurance benefit requirement.[2] Similarly, industry analysts have predicted a boost to temporary-help firms from the ACA (Hancock 2013).

In this paper, we seek to shed light on the early effects the ACA employer mandate has had on short-hours, part-time employment. In our analysis, we distinguish between part-time employment for personal reasons and part-time employment for economic reasons. The latter should best capture any changes owing to an increase in employer demand for short-hours part-time employment. We previously estimated that around the time of the ACA's passage, about 5 percent of the wage and salary workers were vulnerable to changes in their employment arrangement and argued that, if employers chose to circumvent the mandate, the mechanisms would likely vary across industries according to the organization of production and established staffing practices (Dillender, Heinrich, and Houseman 2015). The relatively small share of the workforce potentially affected by the mandate implies that any impacts on hours may be difficult

[1] http://www.forbes.com/sites/theapothecary/2013/07/15/labor-leaders-obamacare-will-shatter-their-health-benefits-cause-nightmare-scenarios/

[2] http://news.investors.com/politics-obamacare/020314-669013-obamacare-employer-mandate-a-list-of-cuts-to-work-hours-jobs.htm.

to detect empirically outside of industries with a high share of such workers and in which use of low-hours part-time workers is an attractive alternative.

Our empirical strategy uses Hawaii as a control group in comparison with the rest of the nation. Hawaii has had, for several decades, a more stringent employer health insurance mandate than that contained in the ACA. Consequently, the introduction of the mandate in the ACA should have no effect on employer behavior in that state. Although Hawaii is in many ways a unique state, we find that part-time employment in Hawaii closely tracks part-time employment in the rest of the nation prior to the passage of the ACA, using monthly data from the Current Population Survey (CPS). Using the same data, we estimate that the ACA increased low-hours, involuntary part-time employment by two to three percentage points, or a half-million to a million workers, in retail, accommodations, and food services—the sectors where employers are most likely reduce hours if they choose to circumvent the mandate. Our findings are robust to placebo tests and alternative specifications.

The remainder of the paper is organized as follows. We provide background on the employer mandate in the ACA, on Hawaii's employer mandate, and on Massachusetts's health insurance reforms in Section 1. We provide an overview of the theory of employer-mandated benefits and prior research findings on the effects of mandated benefits in Section 2. In Section 3, we examine the factors affecting firms' decisions to comply with the mandate or circumvent it by shortening workers' hours or outsourcing work, and we provide descriptive evidence suggesting the mandate may have increased involuntary part-time employment in certain sectors. We detail our methodology and data in Section 4, and we present findings from difference-in-differences and triple-difference specifications in Section 5. In the concluding section, Section 6, we review our findings, place them in context to those of related studies, and discuss implications for future research.

1. THE EMPLOYER MANDATE IN THE AFFORDABLE CARE ACT AND IN HAWAII AND MASSACHUSETTS HEALTH INSURANCE REFORMS

In the decades before the passage of the ACA, health care spending had been growing as a percentage of GDP and of household expenditures. From 2000 to 2010, health care costs rose from 13.4 percent of GDP to 17.4 percent (Centers for Medicare and Medicaid Services 2014),

and the growth in health care spending eroded much of people's real wage gains (Auerbach and Kellermann 2011). Paralleling the growth in insurance costs, the percentage of people without health insurance rose (Kaiser Family Foundation 2013), leading many people to push for health care reform.[3] During the 2008 presidential election, health care reform was a major part of Barack Obama's platform. In March 2010, Congress narrowly passed the ACA, with the vote occurring generally along party lines, and President Obama immediately signed the bill into law.

The ACA features a mandate that large employers provide full-time workers with affordable coverage, along with a health insurance mandate for individuals, an expansion of Medicaid, and subsidies for those purchasing coverage in the individual market. The ACA employer mandate requires that companies with 50 or more FTEs offer affordable coverage to their full-time employees or face a penalty. The act defines full-time employment as employment that averages 30 hours or more per week and affordable coverage as an insurance plan that pays for at least 60 percent of covered health care expenses and for which employees pay no more than 9.5 percent of family income for the coverage.

Although originally scheduled to take effect January 1, 2014, the employer mandate was delayed in various ways. In July 2013, the effective date of the employer mandate was delayed until January 1, 2015, and in February 2014, the mandate for employers with 50–99 full-time employees was further delayed until 2016 (Kennedy 2014). As of January 1, 2015, employers with 100 or more FTEs were required to offer at least 70 percent of their full-time employees and their dependents health insurance; that share rose to 95 percent on January 1, 2016. If an employer subject to the mandate fails to offer health insurance and if at least one employee purchases insurance through an exchange and receives a subsidy or tax credit, the employer is subject to a penalty equal to $2,160 multiplied by the number of full-time employees less 30 (less 80 in 2015). If an employer offers employees health insurance but that insurance fails to pay for 60 percent of covered expenses or the premium exceeds 9.66 percent of family income (the 2016 indexed threshold), the employer may also be subject to a penalty. Specifically, if, under these circumstances, employees receive subsidized insurance in the exchanges, then the employer is subject to a penalty of $3,240 for each employee receiving a tax credit or subsidy

[3] In fact, people had been pushing for health care reform for many years, and previous attempts were made to reform the health care system, perhaps most notably under the Clinton administration in 1993.

after the first 30 (80 in 2015). As of January 1, 2016, the employer mandate became effective for all employers with 50 or more FTEs.

The nation has been divided on health care reform. The constitutionality of the ACA has been challenged in federal courts. The U.S. Supreme Court upheld the constitutionality of the individual mandate in *National Federation of Independent Business v. Sebelius* but ruled that states did not have to expand Medicaid coverage. In *King v. Burwell*, the court ruled that people who purchased insurance on the federal exchanges could be eligible for subsidies. The ACA also was a major factor in the 2012 presidential election, and Republicans in Congress have made many attempts to repeal the legislation (Liptak 2012). Meanwhile, employers have voiced complaints about the employer mandate, both because of the added reporting requirements and because of the costs of expanded insurance coverage for employees. The Healthcare Trends Institute (2015) reported that employers were finding it difficult to assemble disparate data sources from the human resources, finance, insurance, and payroll departments and to reformat them for filing the tax forms required for compliance with the employer mandate. It also found that those lacking the ability to expand information technology infrastructure were increasingly outsourcing these tasks to payroll companies. According to a 2013 survey, 88 percent of the employers polled thought the ACA would increase their costs, and 4.7 percent reported that they already had adjusted hours so that fewer employees qualify for insurance. Another 11.1 percent reported that they would adjust hours in the future (Mrkvicka et al. 2013).

State Health Insurance Mandates: Hawaii and Massachusetts

Prior to the passage of the ACA, two states—Hawaii and Massachusetts—required employers to provide health insurance to employees. Hawaii's Prepaid Health Care Act (PHCA), passed in 1974, requires that all private-sector employers provide health insurance to employees working more than 20 hours per week. Employers must pay at least 50 percent of the premium cost, and the employee contribution is limited to 1.5 percent of an employee's earnings. The Hawaiian mandate exempts coverage of those with very low monthly earnings—less than 87 times the minimum hourly wage, which amounts to earning the minimum wage and working 20 hours per week. Like the ACA, employer-sponsored health insurance must cover minimum benefits, which include inpatient and emergency-room hospital care, maternity care, and medical and surgical services.

Although Hawaii's health insurance mandate was passed in 1974, its legality was successfully challenged on the grounds that the federal government regulates employer-sponsored benefit programs under the Employee Retirement and Income Security Act (ERISA) of 1974. In 1983, Congress granted a permanent exception to the PHCA. Hawaiian employers who do not comply with the employer mandate face penalties and may be shut down (Buchmueller, DiNardo, and Valletta 2011).

Hawaii's employer mandate is notable in that it has been in effect for more than 30 years. By requiring coverage of employees working as few as 20 hours per week (versus 30 in the ACA) and by capping employee premium contributions at 1.5 percent of earnings (compared to 9.66 percent of family income), Hawaii's mandate is considerably stronger than the mandate contained in the ACA. Thus, the ACA employer mandate should not have been binding on Hawaiian employers and should have had little if any effect on their behavior.

The goal of Massachusetts health insurance reform, which was signed into law in 2006, was to attain nearly universal coverage by expanding Medicaid, subsidizing insurance purchased through the individual market, and mandating that individuals purchase coverage and employers provide it. This three-pronged approach used in the Massachusetts health insurance reform was subsequently the model for the ACA, although the details of the Massachusetts health reform and the ACA differ in key respects.

Although Massachusetts employers with at least 10 FTEs were subject to the mandate, the mandate's requirements in the Massachusetts law were generally weaker than those in the ACA for large employers. First, the hours threshold defining part-time employment was higher in the Massachusetts reform than in the ACA. Massachusetts employers with more than 10 FTEs were required to provide coverage to all employees who worked at least 35 hours per week, as compared to 30 hours per week in the ACA. Second, the penalty structure for employers who failed to comply with the mandate was quite different. Massachusetts employers who did not offer affordable coverage had to pay a penalty of $295 per employee. Although for some employers the financial penalty for noncompliance could be greater under the Massachusetts rules, the potential penalties for large employers—particularly those with many low-wage workers—is considerably greater under the ACA (as described above). Third, the definition of "affordable" differed between the Massachusetts reform and the ACA. Under the Massachusetts reform, insurance was considered affordable if the employer offered to pay at least 33 percent of

the premium cost or if at least 25 percent of full-time employees were enrolled in the plan.[4] Under the ACA, the employee's premium is capped at 9.66 percent of family income. Therefore, for low-wage workers whose employers are least likely to voluntarily provide health insurance, the premium employers would be required to pay would likely be higher under the ACA mandate.[5] In anticipation of the federal law, the Massachusetts employer mandate was repealed in 2013, and owing to delays in implementing the ACA, large Massachusetts employers were not subject to any health insurance mandate for a period of one to two years.

In sum, while we expect that some Massachusetts employers would be affected by the ACA mandate, the ACA mandate should have little or no effect on employer behavior in Hawaii, because a more stringent mandate had been in operation in that state for decades prior to the passage of the ACA. Reflecting that more stringent mandate, the incidence of employer-sponsored health insurance is substantially higher in Hawaii than in any other state. To illustrate, we pooled annual data on employees from the March CPS Supplement for the years 2005 to 2010—a period that represents the six years prior to the passage of the ACA—and estimated a linear probability model on whether an individual received health insurance from his or her own employer.[6] The model controls for job and demographic characteristics (occupation, industry, firm size, part-time status, gender) and year fixed effects. Figure 1, which plots the mean residuals by state from this model, shows that Hawaii is an outlier. Controlling for job and demographic characteristics, we find that Hawaiian employees were 21 percentage points more likely to receive employer-sponsored coverage from their employer than the national average, and the incidence in Hawaii was 15 percentage points higher than in Nevada, the state with the next highest incidence of own employer-sponsored health insurance.

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[4] The vast majority of employers complied with the law. In 2010, 4.6 percent of employers who were required to provide coverage were penalized for noncompliance (Goodnough 2012).

[5] This section applies to states with and without Medicaid expansions. Because the ACA initially required states to expand Medicaid eligibility to people earning less than 133 percent of the federal poverty level, it specified that only people earning at least 133 percent of the federal poverty level are eligible for subsidies to purchase insurance on the exchanges. In states with Medicaid expansions, working adults with incomes of less than 133 percent of the federal poverty level are eligible for Medicaid. In states that opted not to expand Medicaid after *National Federation of Independent Business v. Sebelius*, people earning less than 133 percent of the federal poverty level are not eligible for Medicaid or for subsidies on the exchanges. As penalties are triggered when a worker receives a subsidy (and not from firms having uninsured workers or workers who receive Medicaid), neither case would trigger a penalty for an employer.

[6] March CPS Supplements ask respondents about their health insurance coverage during the prior calendar year, and therefore the responses pertain to the period 2004—2009.

2. THEORY AND PRIOR EVIDENCE ON THE EFFECTS OF EMPLOYER-MANDATED HEALTH BENEFITS

Although under the ACA large employers are required to provide health insurance benefits to employees working more than 30 hours per week, employers will not necessarily pay the cost of this benefit and may instead be able to shift some or all of the health insurance costs onto workers. Summers (1989) argues that any mandated benefit will function like a tax at a rate equal to the difference between the employer's cost of providing the benefit and the employee's valuation of it. That is, a mandated benefit only functions like a tax on employers to the extent that the employer's costs of providing the benefit are not equal to the employee's willingness to pay for it. If employees fully value the new benefit, theory predicts that employees will bear its costs through lower wages or other forms of compensation.

In practice, even if employees fully value the benefit, however, employers' ability to shift their costs onto workers in the form of lower wages may be constrained by minimum wages or union contracts. In addition, in a period of low inflation, as currently exists, employers may need to cut nominal wages in order to reduce real wages to cover the benefit cost; nominal wage cuts can have significant adverse consequences on worker morale and productivity. Moreover, empirical evidence suggests that at the premium rates that employers have recently been charging for health insurance benefits, take-up of those benefits has been declining in both small and larger firms. In other words, there appears to be a growing gap between employer costs and employees' willingness to pay for these benefits.

Schultz and Doorn (2009) reviewed the existing literature on how employers respond to increases in health insurance costs or health insurance mandates and found some shifting of the costs of health benefit coverage to workers through lower wages. Gruber (1994), for example, found evidence that mandated maternity benefits lowered the wages of demographic groups likely to use the benefit. Kolstad and Kowalski (2012) studied the effects of the Massachusetts mandate for employer-sponsored health insurance and found that employers complying with the law lowered wages by an average of $6,058 annually, and that this compensating differential was only slightly smaller in magnitude than the average cost to employers of providing the insurance, suggesting that employees valued the benefits and thus were willing to accept lower wages. Other research has found evidence that increases in health insurance costs or mandated health insurance benefits leads to increases in hours worked (and overtime labor) among those with

health insurance coverage and increases in the percentage of workers that do not qualify for benefits.[7] If employers are unable to fully shift the cost of the mandated benefit onto workers, they may pass along the costs to consumers in the form of higher prices, potentially reducing demand for their products and resulting in lower employment levels.

Alternatively, employers may increase their use of workers in staffing arrangements that are not covered by the employer mandate. In the case of the ACA, this involves workers averaging less than 30 hours per week or working in organizations with fewer than 50 full-time employees. Large employers may choose to reduce standard weekly hours below 30 hours per week for a larger share of the workforce. Because organizations with fewer than 50 FTEs are exempt from the mandate, large employers also may outsource tasks to small contract companies. In addition, although temporary workers with sufficiently long hours and prolonged assignments may be subject to the mandate, typically they will be exempted. Federal rules stipulate that to determine work hours for a particular employee, an employer may use up to a 12-month "look-back" period to establish whether an employee works an annual average of 30 hours per week. As a result, employers will not be required to offer insurance to many, if not most, on-call and temporary workers.

To the extent that employers seek to circumvent the mandate, the types of staffing arrangements used are likely to vary systematically across industries. Whether firms wishing to avoid the mandate choose to cut workers' hours or outsource tasks to independent contractors or small firms will depend on the organization of production and the relative costs of using these alternative arrangements. We expand on this point further below, but first we review existing research evidence on firms' use of alternative staffing arrangements to lower benefit costs.

Evidence on Use of Alternative Arrangements to Lower Benefit Costs

A large research literature has examined the many and diverse reasons organizations use part-time, temporary, and contract employment arrangements. Staffing needs in many organizations lend themselves to part-time schedules. For example, in retail, a store may wish to bring in additional staff during peak hours, or, depending on its hours of operation, it may be unable to staff exclusively with employees on 40-hour-per-week schedules. In the same way, organizations typically use direct-hire or agency temporary workers to meet increased staffing

[7] See Schultz and Doorn (2009) for a review of the literature.

needs during temporary periods of higher demand or to fill in for absent employees. Contractors are often used for their specialized expertise.[8]

Savings on health insurance and retirement benefits represent another factor widely believed to affect certain organizations' decisions to use or to expand their use of part-time, temporary, and contract workers. Using Medical Expenditure Panel Survey–Insurance Component (MEPS-IC) data from 1996 to 2004, Schultz and Doorn (2009) examined an organization's change in staffing in response to an increase in health insurance costs and found that a 1 percent increase in spending on health insurance benefits was associated with a 3.7 percent increase in part-time workers (when health insurance coverage was not offered to part-time employees).

Several studies have examined the effects of employer mandates in state health insurance reforms on staffing arrangements. Buchmueller, DiNardo, and Valletta (2011) argue that as health insurance costs increased following the passage of Hawaii's Prepaid Health Care Act, employer incentives to pass along the costs of health insurance to workers or to circumvent the mandate by using exempt part-time workers would grow. Using CPS data for the years 1979 to 2005, they find evidence that employers increasingly relied on low-hours part-time employees, particularly among workers most affected by the mandate. Similarly, in a study of the Massachusetts health insurance reform, we use CPS data and a difference-in-differences strategy to study the mandate's effect on part-time employment (Dillender, Heinrich, and Houseman, forthcoming). We find a significant shift toward exempt part-time hours among low-educated workers—who are the ones most likely to be affected by the employer mandate. Silber and Condra (2013) show that from 2005 to 2007 temporary-help employment increased by 13.9 percent in Massachusetts compared to just 2.2 percent for the country overall, in spite of the fact that overall growth in Massachusetts was weaker than in the aggregate economy. Any effect of the Massachusetts health reform on employers' use of temporary staffing is particularly hard to disentangle, because the industry is highly cyclical and the Massachusetts reform was implemented on the eve of the Great Recession. Even so, the authors point out that this pattern suggests that a secular factor contributed to the growth of temporary-help employment in the state during the period, which coincided with the implementation of health care reform.

[8] See Cappelli and Keller (2013) for a recent review of the literature.

To date, evidence of the effects of the employer mandate in the ACA on staffing arrangements has been mixed. Even and Macpherson (2015) argue that although employers have an incentive to shift new health insurance coverage costs to workers by requiring employee contributions or reducing wages, because these strategies are less likely to work for low-wage workers, employers will look for other ways to avoid complying with the coverage mandate for low-wage workers. They use data from the CPS (1994–2014) to assess whether the ACA employer mandate increased involuntary part-time employment. They apply a difference-in-differences strategy to estimate the average percentage of workers (aged 19–64) by year that are in involuntary (and voluntary) part-time employment and test whether the ACA effects show up in more new part-time jobs that are held involuntarily.[9] They find that involuntary part-time employment was higher in 2014 than one would have expected, given economic conditions and the composition of the labor market. Furthermore, their estimated increase in the probability of involuntary part-time employment was highest for workers without a college degree and for those earning lower wages in industries and occupations most likely to be affected by the ACA mandate.

Alternatively, Mathur, Slavov, and Strain (2016) use CPS data from 2008 to 2014 to examine the effects of the ACA mandate on part-time work. Using a difference-in-differences strategy, they test whether there was an increase in those working 25–29 hours compared to 31–35 hours in industries and occupations they deemed most likely to be affected by the mandate. They conclude that the ACA mandate had no effect on part-time work, although the coefficients in their models were imprecisely estimated. Pinkovskiy (2015) examines changes in employment at the county level during the last U.S. recession and recovery period using data from the Quarterly Census of Employment and Wages, the CPS, and the MEPS-IC. He found that counties more exposed to changes from the ACA had a statistically insignificant decline in their part-time to full-time employment ratio. However, as he acknowledged, the ACA employer mandate had not yet taken effect in the time period of his analysis, and thus his analysis does not preclude the possibility of adverse labor market effects accompanying its full implementation.

[9] In contrast to our approach, they exclude Hawaii and Massachusetts from their estimations, citing the earlier mandates in those states.

3. POTENTIAL EFFECTS OF THE ACA ON PART-TIME EMPLOYMENT AND DESCRIPTIVE EVIDENCE

The potential effects of the ACA mandate on employer demand for short-hours part-time workers will depend on the following factors: 1) the number of workers who are vulnerable to a change in employment arrangement because of the mandate—workers who average 30 or more hours a week and who are employed at firms with at least 50 FTEs, but whose employers did not previously offer them health insurance coverage; 2) the cost of complying with the mandate—i.e., offering health insurance that complies with the mandate; 3) the penalty for not complying with the mandate; and 4) the cost of using more short-hours part-time workers, and how this cost compares to the costs of using other employment arrangements (independent contractors, small contractors, temporary workers) to circumvent the mandate.

With respect to the first factor, the ACA employer mandate may have little effect on employer demand for short-hours part-time workers—or other alternative staffing arrangements—if it largely codifies existing practices. In other words, the ACA mandate may generally apply to employees who are already offered health insurance by their employers. Indeed, in earlier work, we estimated that the large majority of wage and salary workers who are not offered employer-sponsored insurance are not subject to the mandate because they work in small firms or work fewer than 30 hours per week. Using 2008–2010 data from the March CPS, which contains information on coverage by an own-employer plan, as well as statistics on insurance take-up rates by industry, we estimate that only about 5 percent of the wage and salary workforce is covered by the mandate but not already offered health insurance by their employers (Dillender, Heinrich, and Houseman 2015). While these estimates are rough, they nevertheless indicate that the share of the workforce that is vulnerable to a reduction in hours or other change in staffing arrangement is relatively small.

For those covered by the mandate, an employer will also weigh the costs of complying with it relative to the penalties associated with noncompliance. Prior to the mandate taking effect, low-wage workers comprised the majority of those who were not offered health insurance but were covered by the mandate, and the costs to employers of providing health insurance for them are high both in an absolute sense and as a percentage of their wages. To illustrate, consider a single, 40-year-old nonsmoker, who works 30 hours per week and earns $11 per hour, or $16,500 per year. That individual earns slightly above the threshold that would make her

eligible for Medicaid in most states, but she would be eligible for assistance on the exchanges. The average premium cost in 2016 of a bronze plan (which provides the minimum coverage under the ACA) is $3,480 for this individual.[10] Because the premium contribution from the employee cannot exceed 9.66 percent of her income, the employer must cover at least $1,886 of the premium, which amounts to 11.4 percent of the worker's wage income. Particularly if take-up rates are expected to be high, then the costs to employers hiring a large pool of low-wage workers of offering health insurance to all full-time employees could constitute a substantial percentage increase in labor costs. At the same time, as discussed above, the penalties firms face for not complying with the mandate are potentially high.

Given the relatively high costs of complying with the mandate and the financial penalties for noncompliance, some employers will have an incentive to circumvent the mandate by altering the way they staff. Reflecting differences in the organization of production, however, the types of staffing arrangements used are likely to systematically vary across industries.[11] Certain service industries utilize staffing models that heavily rely on part-time employment and algorithms to vary workers' hours from week to week according to demand.[12] In such industries, the costs of reducing average weekly hours below the 30-hour threshold for certain employees to circumvent the mandate may be relatively low. In other sectors, such as manufacturing, production is organized around full-time shifts. The incidence of part-time employment is low, and consequently reduction of weekly hours to avoid the mandate may be a costly strategy. Use of temporary-help employment in manufacturing, however, is high. Although it is beyond the scope of this paper, the rise of temporary-help employment since the Great Recession could partly reflect a response to the ACA (Dillender, Heinrich, and Houseman (2015).

Even though the focus of our inquiry is on the effect of the ACA employer mandate on employer demand for short-hours part-time work, it should be noted that the ACA may also increase the supply of workers desiring part-time jobs. In the past, because of adverse selection in insurance markets, individuals purchasing health insurance often faced very high premiums, and many sought full-time jobs in order to have access to affordable health insurance through

[10] Information on average premium costs comes from the technology company HealthPocket, which compiles and ranks information on health insurance plans, and can be found at https://www.healthpocket.com/healthcare-research/infostat/2016-obamacare-premiums-deductibles#.VxkL63osBOU.

[11] We developed this argument originally in Dillender, Heinrich, and Houseman (2015).

[12] For evidence on such practices, see University of Chicago Work Scheduling Study reports and papers, available at http://ssascholars.uchicago.edu/work-scheduling-study/work-scheduling-study-papers.

their employers, who had group rates. By prohibiting price discrimination based on preexisting health conditions and by providing affordable care to individual buyers on the exchanges, the ACA is expected to reduce the hours that individuals choose to work; it thereby may increase voluntary part-time employment. In addition, low-earnings workers receive subsidies for health insurance, and those subsidies are phased out as earnings increase. The resulting high effective marginal tax on earned income for these workers may, for some, reduce the number of work hours they desire (CBO 2014). For that reason, we distinguish between involuntary and voluntary part-time employment. Although an increase in voluntary part-time employment could be the consequence of a supply-side or demand-side response, an increase in involuntary part-time employment would only be consistent with increased employer demand for part-time scheduling.[13]

The CPS, the Bureau of Labor Statistics monthly household survey that covers around 60,000 households, is the primary source for data on employment and hours in the United States. For individuals working part-time, the CPS collects information on whether part-time employment is voluntary (i.e., the individual works part-time for personal reasons) or involuntary (i.e., the individual works part-time for economic reasons—specifically, she cannot find full-time work or her employer has reduced her work hours).[14] A number of observers have noted that, although it has fallen during the recovery period, the rate of involuntary part-time employment has remained higher than would be expected given the state of the macroeconomy, suggesting that structural factors help to explain why it has a higher incidence today than before the recession (e.g., Valletta and van der List 2015). In addition, higher-than-normal involuntary part-time employment has been concentrated in sectors with high baseline rates of part-time employment (Dillender, Heinrich, and Houseman 2015; Robertson and Terry 2014).

Figures 2 and 3 depict the percentage of employees working fewer than 30 hours per week voluntarily and the percentage working fewer than 30 hours per week for economic

[13] Studying Hawaii also helps us focus more narrowly on the effects of the employer mandate, since Hawaii, along with the rest of the nation, has experienced the other features of the ACA, in particular the individual mandate and expanded Medicaid coverage.

[14] Although the American Community Survey has a much larger sample than the CPS, it does not ask about hours worked at a specific job, nor does it probe respondents as to the reasons they work part-time, thus making it insufficient for our study.

reasons, respectively, for selected sectors for the years 2003 to 2015.[15] Although the rate of voluntary part-time employment displays seasonal fluctuations, no cyclical or secular trends are evident. The fluctuation in the rate of part-time employment over the business cycle is due entirely to changes in the incidence of part-time employment for economic reasons. The rate of involuntary part-time employment jumped during the recession in 2008 and 2009 and has remained stubbornly high in accommodations and food services and in retail. Other sectors also registered increases in involuntary part-time employment during the recession, but they are less pronounced, and the drop in involuntary part-time employment during the recovery has been proportionately greater than in accommodations and food services and retail.

These patterns of persistently high low-hours involuntary part-time employment in the accommodations and food services sector and the retail sector are plausibly consistent with an employer response to the ACA mandate in two ways. First, prior to the mandate taking effect, these sectors accounted for a large and disproportionate share of workers who would be covered by the mandate but who were not offered health insurance. Although they accounted for only 20 percent of wage and salary employment, they accounted for an estimated 42 percent of workers vulnerable to a change in staffing arrangements (Dillender, Heinrich, and Houseman 2015). Given the large numbers and exceptionally high concentration of vulnerable workers in these sectors, it is plausible that any response to the mandate would be detected there. Second, for employers who wish to sidestep the mandate by changing the way they staff some positions, shortening hours is likely to be a particularly attractive alternative. Almost 70 percent of the workers in jobs identified as vulnerable to a staffing change in these sectors worked between 30 and 39 hours per week, and so were relatively close to the 30-hour threshold (Dillender, Heinrich, and Houseman). Moreover, the organization of work in these sectors has long made heavy use of variable-hours scheduling and low-hours part-time employment. Case studies have documented the extensive use of variable-hours scheduling in these sectors, and survey evidence from the National Longitudinal Survey of Youth (NLSY) shows that three out of the four occupations with the greatest variability in hours were core occupations in these sectors: retail workers, food service workers, and janitors and cleaners (Henly and Lambert 2015; Lambert, Fugiel, and Henly 2014). These institutional factors suggest that it would be relatively

[15] The figures come from authors' tabulations of the monthly CPS public use files. Omitted sectors have very low rates of part-time and involuntary part-time employment and were dropped from the figures to improve their readability.

straightforward for many employers in these sectors to cut hours, particularly the hours of those close to the 30-hour threshold, should they wish to sidestep the mandate.

We turn now to formally testing the effects of the ACA on part-time employment.

4. METHODOLOGY AND DATA

Our methodology for estimating the effects of the ACA employer mandate on short-hours part-time employment exploits the fact that this mandate should have virtually no effect on employer, or household, behavior in Hawaii. To determine the effect of the ACA on the probability of holding a short-hours part-time job in the other states, where the mandate would be binding, we estimate the following difference-in-differences equation:

(1) $y_{ijst} = \alpha X_{ist} + unemp_{st}\lambda + postACA_t \times HI_s\beta + \gamma_t + \phi_s + \theta_j + \epsilon_{ist}.$

Outcome *y* is an indicator variable measuring whether individual *i* working in sector *j* in state *s* and time *t* is in a short-hours part-time job. We estimate models in which the outcome measure includes all short-hours part-time employment, and we also estimate models in which the outcome measure is restricted to part-time employment for economic reasons (i.e., involuntary). The regression model controls for demographic and job characteristics (age, age^2, gender, education, race and ethnicity, occupation); the state monthly unemployment rate; and month-year, state, and major sector fixed effects. The period following the passage of the ACA is interacted with Hawaii, and the coefficient β captures differences between Hawaii and the other states in the probability of being part-time that did not exist prior to the act's passage. Because available evidence indicates that many employers began to adjust their behavior shortly after the act's passage in response to the prospect of the mandate, we define the post-ACA period as 2011 and later. Although the employer mandate was postponed in July 2013 and did not take effect until January 2015 for employers with 100 or more FTEs, it is plausible that many employers would have begun their adjustment to the mandate years before the mandate took effect. If employers wished to cut the hours of existing employees to avoid the mandate, legally they would need to establish that those employees' hours fell below the 30-hour-per-week threshold in the year before the start of the mandate—which according to the original schedule would have been 2013. In addition, it bears noting that in the initial years following the ACA's passage regulations had not been fully promulgated, there was much confusion about the law's

requirements, and opposition to the mandate was intense among many businesses. In light of the confusion and hype surrounding the ACA, some businesses that had cut hours during the recession may have decided not to increase workers' hours in anticipation of the mandate, even as demand recovered. We also expect that the incentives employers have to shorten hours of work to circumvent the mandate will vary substantially across industries. In particular, as detailed above, we expect that the financial benefits would be potentially relatively high and costs relatively low for shortening hours to circumvent the mandate in the retail and the accommodations and food services sectors, and we expect that any impacts of the ACA employer mandate on short-hours part-time work will be concentrated in these sectors, except in Hawaii. In view of this, we also estimate the following triple-difference specification:

$$(2)\ y_{ijst} = \alpha X_{ist} + postACA_t \times RAF_j \times HI_s\beta + \gamma_{st} + \phi_{j=RAF,s} + \theta_{j=RAF,t} + \epsilon_{ijst}$$

Along with controls for demographic and job characteristics, the triple-difference specification includes a more extensive set of fixed effects—state-month-year; state interacted with employment in retail, accommodations, and food services (*RAF*); and month-year interacted with *RAF*—that control for other factors potentially affecting the probability of short-hours part-time employment.[16] In Equation (2), β captures the change, following the passage of the ACA, in the in the probability of short-hours part-time work in the RAF sector in Hawaii compared to the probability of short-hours part-time work in the RAF sector in other states that is not explained by differences in general economic conditions between the pre- and post-ACA period in Hawaii relative to the rest of the country.[17]

We estimate Equations (1) and (2) using CPS data. In addition to collecting information on workers' demographic and job characteristics, the survey collects information on usual weekly hours worked in up to two jobs, and, if total usual hours are less than 35 (the BLS definition of part-time employment), on whether the individual worked part-time for personal (voluntary) or economic (involuntary) reasons. The latter consists of workers whose employers have reduced their work hours or who indicate that they cannot find full-time work. We classify individuals as part-time based on their usual hours worked in their main job. Although data on weekly hours include the full range of possible integer values, responses tend to bunch at five-

[16] The inclusion of state-month-year fixed effects in Equation (2) obviates the need for including state unemployment rate as a control.

[17] In experimental terminology, Hawaii is the one "untreated" state, the state that is unaffected by the ACA employer mandate. Point estimates for β would be equal and opposite in sign if we were instead to interact an indicator for belonging to the set of treated states with the post-ACA time period.

hour increments (e.g., 20, 25, 30, 35, 40), suggesting that many respondents round their reported hours. In constructing measures of short-hours part-time employment, we therefore use two alternative cutoffs: work involving less than 30 hours per week in the main job (corresponding to the threshold that applies in the ACA mandate) and work involving 30 hours or less per week in the main job. The latter measure likely includes many who, in practice, work somewhat below (or above) 30 hours. In addition, we estimate equations with the outcome variable indicating any short-hours part-time work and indicating only involuntary short-hours part-time work.[18]

Our sample includes wage and salary workers aged 18 to 64; self-employed are excluded from the sample because the employer mandate does not apply to their situation. We present estimates of models over two time periods: 2003–2015 and 1994–2015. Although the longer time period, which incorporates two recessions, would generally be preferable, Buchmueller, DiNardo, and Valletta (2011) argue that Hawaiian employers continued to adjust behavior to the mandate as health insurance premium costs kept rising through the 1990s. We show that our findings are not sensitive to time period.

5. RESULTS

Table 1 presents results for the difference-in-differences specification in Equation (1). Selected coefficient estimates for four outcomes are displayed: 1) working fewer than 30 hours per week, 2) working 30 or fewer hours per week, 3) working fewer than 30 hours per week for economic reasons, and 4) working 30 or fewer hours per week for economic reasons. To show the time patterns of any response, we interact residence in Hawaii with the year before and the year of the ACA's passage (2009, 2010) and each year following the act's passage. We also present Wald tests for the joint significance of the coefficients on the post-ACA period. All

[18] The question concerning the reason for part-time work is only asked of those who were at work during the survey week and who usually work fewer than 35 hours per week in up to two jobs. It is possible that an individual has her hours reduced below 30 hours per week on a main job and picks up a second job that boosts her hours to 35 or above. That individual would not be counted as involuntarily part-time on the main job. The share of individuals with second jobs is very small—about 5 percent. In addition, some workers report that their weekly hours are variable, and they are subsequently asked if their usual hours are part-time or full-time. We classify variable-hours workers who indicate they usually work part-time as short-hours part-time, although deleting them from our sample has no substantive effect on our results.

observations are weighted using the CPS weights. In addition, because individuals in the CPS may appear in the data up to eight times, we cluster standard errors on individuals.[19]

Panel A of Table 1 reports coefficient estimates of the interaction of Hawaii with year from models based on the sample of workers employed in all sectors. If the passage of the ACA led to greater low-hours part-time employment except in Hawaii, one would expect that the coefficients on the Hawaii interaction terms would be negative after 2010. These coefficient estimates, however, are near zero and never statistically significant.

Panels B and C of Table 1 display coefficient estimates for models restricted to workers employed in retail, accommodations, and food services and workers employed in all other sectors, respectively. For the sample of workers in retail, accommodations, and food services, the coefficient estimates on the Hawaii-year interaction terms become large and negative beginning in 2011, and, except for 2015, are statistically significant at conventional levels. In all specifications, tests of joint significance suggest that, following the ACA's passage, the probability of being in a short-hours part-time job and of being involuntarily in a short-hours part-time job was significantly lower in Hawaii than in the rest of the United States relative to the differential during the period prior to the passage of the ACA. A comparison of estimates from models in which the dependent variable measures all short-hours part-time work with those in which the dependent variable is short-hours part-time work for economic reasons reveals that the coefficient estimates for the Hawaiian interaction term are generally only slightly more negative in the former than in the latter. This indicates that most of the effect is coming from involuntary part-time employment and so is demand driven. Estimates from a model in which the dependent variable is specified as voluntary short-hours part-time employment (not reported in Table 1) confirm that coefficient estimates on the Hawaiian interaction term during the post-ACA period are not jointly statistically significant.[20] Panel C coefficient estimates on the Hawaii-year interaction terms are uniformly near zero and insignificant for the period following the ACA's passage, indicating the mandate has to date had little discernible effect on short-hours part-time employment in other sectors.

[19] The CPS has a limited longitudinal structure. Participating households are in the sample for four months, out of the sample for eight months, and then included in the sample for four months.

[20] *P*-values are 0.73 and 0.48 for voluntary part-time employment less than 30 hours and voluntary part-time employment of 30 hours or less, respectively.

In view of these results, we estimate the triple difference specification of Equation (2), providing a more rigorous test of the hypothesis that in affected states the ACA increased short-hours part-time employment—in particular, involuntary short-hours part-time employment—in retail, accommodations, and food services. This model includes an extensive set of fixed effects in order to control for other factors that might affect changes in short-hours part-time employment in the Hawaiian retail, accommodations, and food services sectors relative to the rest of the country and to other Hawaiian sectors following the passage of the ACA. In addition, because of concerns that standard errors may be understated in difference-in-differences specifications when the number of treated and untreated states is unbalanced, we estimate a series of placebo tests to assess the statistical significance of our estimates.[21] Specifically, for Equation (2), we rerun each specification 50 times, substituting one of the other 49 states or the District of Columbia for Hawaii in the interaction with employment in retail, accommodations, or food services following the passage of the ACA. The fraction of placebo runs for which the coefficient on this state interaction term is less than the coefficient for the Hawaiian interaction term provides a conservative test of statistical significance.

The top panel of Table 2 reports the results of this specification using data for the period 2003–2015. The first two columns display the coefficient on the Hawaiian interaction term for models in which the dependent variable captures all short-hours part-time employment, defined either as less than 30 hours or as 30 hours or less per week, respectively. These estimates indicate that the ACA increased short-hours part-time employment on the order of two to three percentage points. In only four of the placebo tests (8 percent) were the interaction terms less than that of Hawaii's, suggesting the estimates are moderately significant (one-tailed test). The third and fourth columns report results from models in which the dependent variable is defined as short-hours part-time employment for economic reasons. The point estimates on the Hawaiian interaction terms are only 0.04 to 0.08 points less than the corresponding estimates in the first two columns, indicating that most of the estimated effect of the mandate arises from an increase in involuntary short-hours part-time work. Moreover, in none of the placebo models was the coefficient on the state interaction term smaller than that for Hawaii, indicating strong statistical significance.

[21] See Conley and Taber (2013) and Buchmueller, DiNardo, and Valletta (2011) for discussions of potential biases to standard errors when there are few treated (or in our case untreated) states. Our approach, which generates *p*-values based on a set of placebo estimates, follows that in Buchmueller, DiNardo, and Valletta.

Panel B displays models estimated over the years 1994–2015. In the first two columns, where the dependent variable is defined as any short-hours part-time employment, coefficient estimates for the Hawaiian interaction term are quite similar to those displayed in panel A for the shorter time period, and just two placebo estimates (4 percent) are smaller. In the third and fourth columns, where the dependent variable is involuntary short-hours part-time employment, the coefficient estimates on the Hawaiian interaction terms are only slightly smaller (0.001 to 0.003 points) than their counterparts for any short-hours part-time employment and are highly significant; no placebo estimate is smaller. Our estimates imply that the ACA increased involuntary short-hours part-time employment by 2.4 to 3.1 percentage points—or about 600,500 to 800,500 workers—in retail, accommodations, and food services.

The models reported in Table 2 include a single interaction of employment in the Hawaiian retail, accommodations, and food sectors with the period following the passage of the ACA. We also estimated equations that interact Hawaiian employment in this sector with an indicator variable for each year. For models with involuntary short-hours part-time employment as the dependent variable, we display coefficient estimates on these interaction terms, along with the 95 percent confidence intervals, in Figures 4 and 5. Figure 4 results are from models estimated on the 2003–2015 period, and Figure 5 results are from models estimated on the 1994–2015 period. Although individual-year interaction terms are imprecisely estimated, in each set there is a noticeable drop in the point estimates in 2011 to 2015 relative to the earlier period. Interestingly, there is a narrowing of the differential in 2015. This narrowing arises primarily from a jump in involuntary part-time employment in the Hawaiian retail, accommodations, and food sectors. More years of data will be needed to determine if the significant differential apparent following the passage of the ACA persists as employers come to better understand and adjust to the mandate.

6. CONCLUSION

Since the passage of the ACA in 2010, there has been considerable speculation that there would be widespread reduction in weekly scheduled hours below the 30-hour threshold by employers seeking to avoid its mandate. Those predictions, however, ignore the fact that the majority of workers who, prior to the ACA, were not receiving offers of health insurance

coverage from their employer were not covered by the mandate. In an earlier work, we estimate that at the time of the act's passage only about 5 percent of wage and salary workers would be covered by the mandate but were not already receiving an offer of employer-sponsored health insurance and so would be potentially vulnerable to a reduction in hours (Dillender, Heinrich, and Houseman 2015). Moreover, we emphasize that although compliance with the mandate could result in a substantial percentage increase in compensation for some—particularly low-wage workers—employers will have to weigh any increase in costs associated with offering health insurance against the costs of reorganizing work around short-hours schedules. Such reorganization may often be costly and infeasible, and in these circumstances firms will likely comply with the mandate or use other mechanisms, such as outsourcing, to circumvent it.

We find strong evidence that the ACA increased short-hours part-time employment, but only in sectors where a large concentration of workers was affected by the mandate and where use of variable weekly scheduling and low-hours part-time employment was already prevalent. Specifically, exploiting the fact that the employer mandate was not binding in Hawaii in difference-in-differences and triple-difference models, we estimate that the short-hours part-time employment increased by two to three percentage points in retail, accommodations, and food services; almost all of the increase was the result of an increase in involuntary part-time employment, indicating that employer demand, not worker supply, was the cause of the growth in short-hours part-time employment. Our results contrast with those of most existing studies of the effects of the ACA on part-time employment.[22] This, we suspect, is because in aggregate the effects will be small as a percentage of the workforce and because most prior studies are insufficiently powered or targeted to detect effects in sectors where they are likely concentrated.

Our study identifies causal effects resulting from employers' initial reactions to the mandate. Those effects could change over time. Our time analysis measures responses during the period following the passage of the ACA through the first year of implementation for employers with 100 or more FTEs. During much of the period, the regulations governing the mandate were being developed, and there was much confusion among employers over their costs. The period was also marked by strong opposition to the mandate among many employers, which may have been associated with some exaggeration of potential costs. As employers learn

[22] The notable exception is Even and MacPherson (2015), which, although using a quite different methodology from our study, examines effects by industry and occupation.

about the actual cost implications of the mandate in their circumstances, behavior may change. In addition, it is important to recognize that the effects of the mandate on staffing arrangements are not independent of economic conditions. If the economy continues to substantially improve and labor markets tighten, more employers may find it in their interests to offer longer work hours and health insurance benefits. In a different way, an increase in inflation could increase the probability that employers offer workers health insurance, by making it easier for them to pass along premium costs in the form of lower real wages without cutting nominal wages. There is a need, therefore, for future studies of the effects of the ACA mandate on part-time employment, as well as on other staffing arrangements, which have not been addressed in this or other research.

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Table 1 Effects of the ACA on Part-Time Employment: Hawaii Relative to the Rest of the United States, Difference-in-Differences Specification

	Panel A: All industries				Panel B: Retail, accommodations and food services				Panel C: All other industries			
Interaction Hawaii with:	Working < 30 hrs/wk	Working ≤ 30 hrs/wk	PT economic reasons, < 30 hrs/wk	PT economic reasons, ≤ 30 hrs/wk	Working < 30 hrs/wk	Working ≤ 30 hrs/wk	PT economic reasons, < 30 hrs/wk	PT economic reasons, ≤ 30 hrs/wk	Working < 30 hrs/wk	Working ≤ 30 hrs/wk	PT economic reasons, < 30 hrs/wk	PT economic reasons, ≤ 30 hrs/wk
2009	0.0035	0.0017	0.0049~	0.0036	−0.0054	−0.0119	0.0015	−0.0023	0.0037	0.0033	0.0034	0.0021
	(0.006)	(0.006)	(0.003)	(0.003)	(0.012)	(0.013)	(0.007)	(0.008)	(0.006)	(0.007)	(0.003)	(0.003)
2010	0.0039	0.0056	0.0113**	0.0154**	−0.0177	−0.0227	0.0052	0.0088	0.0075	0.0111	0.0099**	0.0132**
	(0.006)	(0.006)	(0.003)	(0.004)	(0.013)	(0.014)	(0.008)	(0.009)	(0.006)	(0.007)	(0.004)	(0.004)
2011	0.0004	−0.0015	−0.0006	−0.0008	−0.0301*	−0.0414**	−0.0194**	−0.0270**	0.0077	0.0085	0.0032	0.0047
	(0.006)	(0.006)	(0.003)	(0.003)	(0.013)	(0.014)	(0.007)	(0.008)	(0.006)	(0.007)	(0.003)	(0.004)
2012	−0.0034	−0.0030	−0.0019	−0.0032	−0.0263*	−0.0289*	−0.0168*	−0.0213**	0.0012	0.0023	0.0009	−0.0000
	(0.006)	(0.006)	(0.003)	(0.003)	(0.013)	(0.014)	(0.007)	(0.008)	(0.007)	(0.007)	(0.003)	(0.003)
2013	−0.0037	−0.0047	−0.0022	−0.0049	−0.0262*	−0.0322*	−0.0230**	−0.0328**	0.0011	0.0009	0.0024	0.0016
	(0.006)	(0.006)	(0.003)	(0.003)	(0.012)	(0.014)	(0.006)	(0.007)	(0.006)	(0.007)	(0.003)	(0.003)
2014	−0.0035	−0.0059	−0.0001	−0.0024	−0.0359**	−0.0532**	−0.0200**	−0.0313**	0.0033	0.0053	0.0039	0.0040
	(0.006)	(0.007)	(0.003)	(0.003)	(0.014)	(0.015)	(0.007)	(0.008)	(0.006)	(0.007)	(0.003)	(0.004)
2015	0.0070	0.0077	0.0036	0.0020	−0.0091	−0.0183	−0.0062	−0.0114	0.0094	0.0126~	0.0051	0.0041
	(0.006)	(0.007)	(0.003)	(0.003)	(0.014)	(0.015)	(0.007)	(0.008)	(0.007)	(0.007)	(0.003)	(0.003)
R-sq.	0.13	0.15	0.03	0.04	0.16	0.19	0.03	0.03	0.10	0.11	0.02	0.02
Joint significance of estimates for post-ACA period (2011–15), *p*-values	0.67	0.54	0.77	0.59	0.02	0.00	0.00	0.00	0.67	0.52	0.50	0.57
N	All industries = 8,094,919				All retail, accommodations, and food services = 1,475,840				All other industries = 6,619,079			

NOTE: Each column represents a separate regression with the indicated dependent variable. Reported coefficient estimates are for variables measuring the interaction of Hawaii with the indicated year. All models also include month-year, state, and industry fixed effects; interactions of industry dummy variables with Hawaii; controls for demographic and job characteristics (age, age^2, gender, race-ethnicity, education, occupation); and state-month-year unemployment rate. Data come from the monthly CPS covering the period January 2003 through December 2015. Observations include wage and salary workers aged 18–64. Observations are weighted by the CPS weights, and standard errors are clustered on individuals. ~ denotes significance at the 0.10 level, * at the 0.05 level, and ** at the 0.01 level.

SOURCE: Authors' calculations using CPS data.

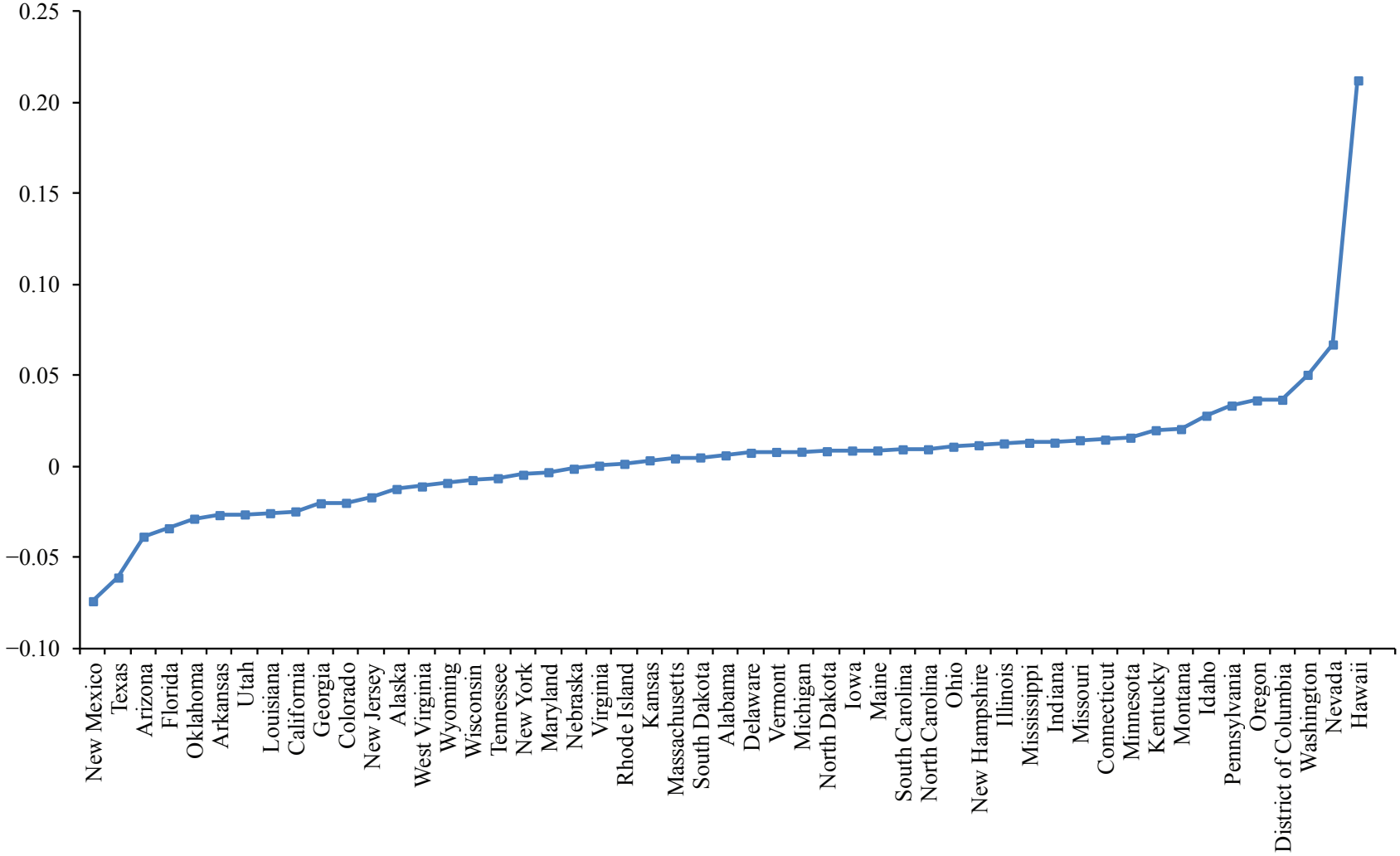
Table 2 Effects of ACA on Part-Time Employment: Hawaii Relative to Rest of U.S., Triple Difference Specification

	Dependent variable:			
	(1) Working < 30 hrs/wk	(2) Working ≤ 30 hrs/wk	(3) PT economic reasons, < 30 hrs/wk	(4) PT economic reasons, ≤ 30 hrs/wk
	Panel A: 2003–2015			
Hawaii × retail-hotel-food × post-ACA	−0.0237**	−0.0322**	−0.0179**	−0.0247**
	(0.008)	(0.008)	(0.004)	(0.004)
Fraction of placebo estimates smaller than Hawaii's	0.08	0.08	0.00	0.00
R-sq.	0.12	0.14	0.03	0.04
N	8,094,919	8,094,919	8,094,919	8,094,919
	Panel B: 1994–2015			
Hawaii × retail-hotel-food × post-ACA	−0.0251**	−0.0344**	−0.0240**	−0.0313**
	(0.007)	(0.007)	(0.003)	(0.004)
Fraction of placebo estimates smaller than Hawaii's	0.04	0.04	0.00	0.00
R-sq.	0.12	0.14	0.03	0.03
N	13,478,440	13,478,440	13,478,440	13,478,440

NOTE: Each column represents a separate regression with the indicated dependent variable. Reported coefficient estimates are for variables measuring the interaction of employment in the Hawaiian retail, accommodations, and food (RAF) sectors with the period 2011–2015. All models also include demographic and job characteristics variables (age, age^2, gender, race-ethnicity, education, occupation), state-month-quarter, RAF sector-month-quarter, and RAF sector-state fixed effects. Data come from the monthly CPS. Observations include wage and salary workers aged 18–64; observations are weighted by the CPS weights. ~ denotes significance at the 0.10 level, * at the 0.05 level, and ** at the 0.01 level.

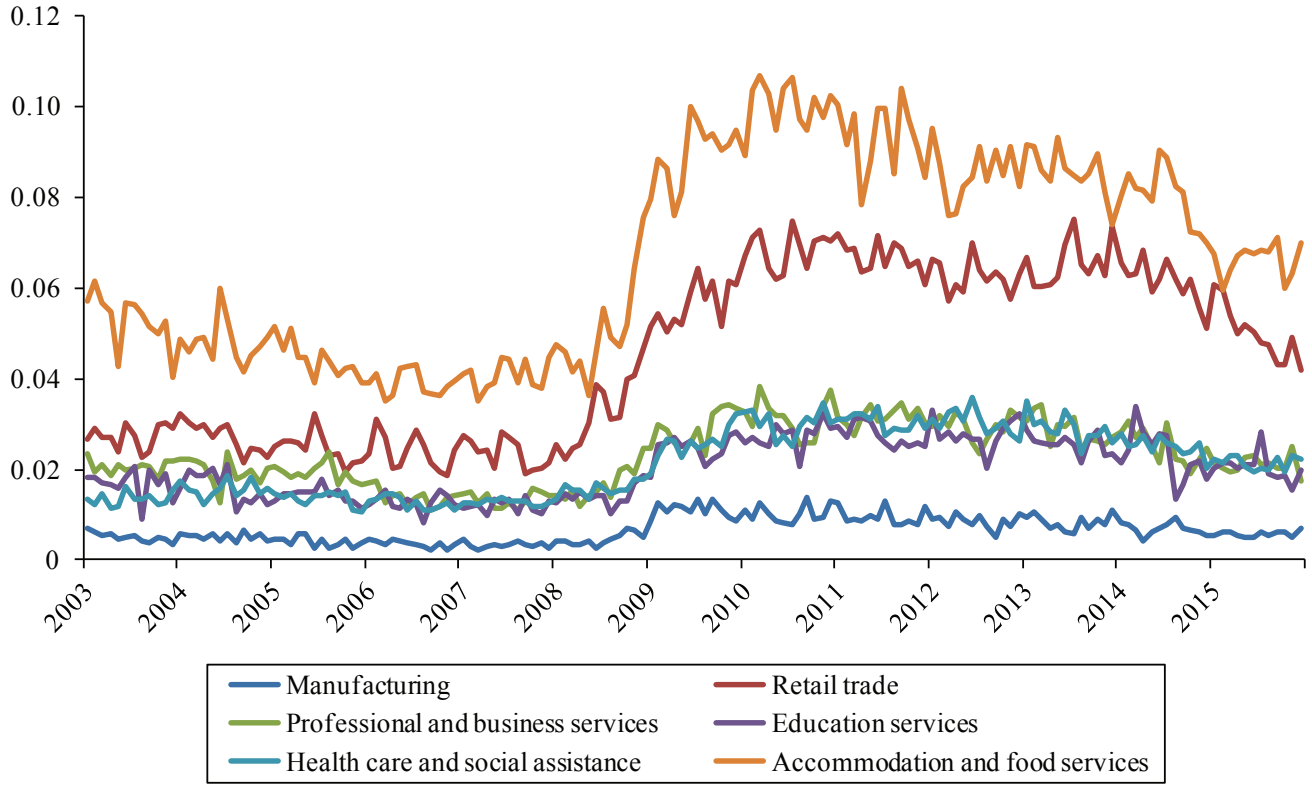
SOURCE: Authors' calculations using CPS data.

Figure 1 Relative Probability of Having Health Insurance Coverage from Own Employer, by State



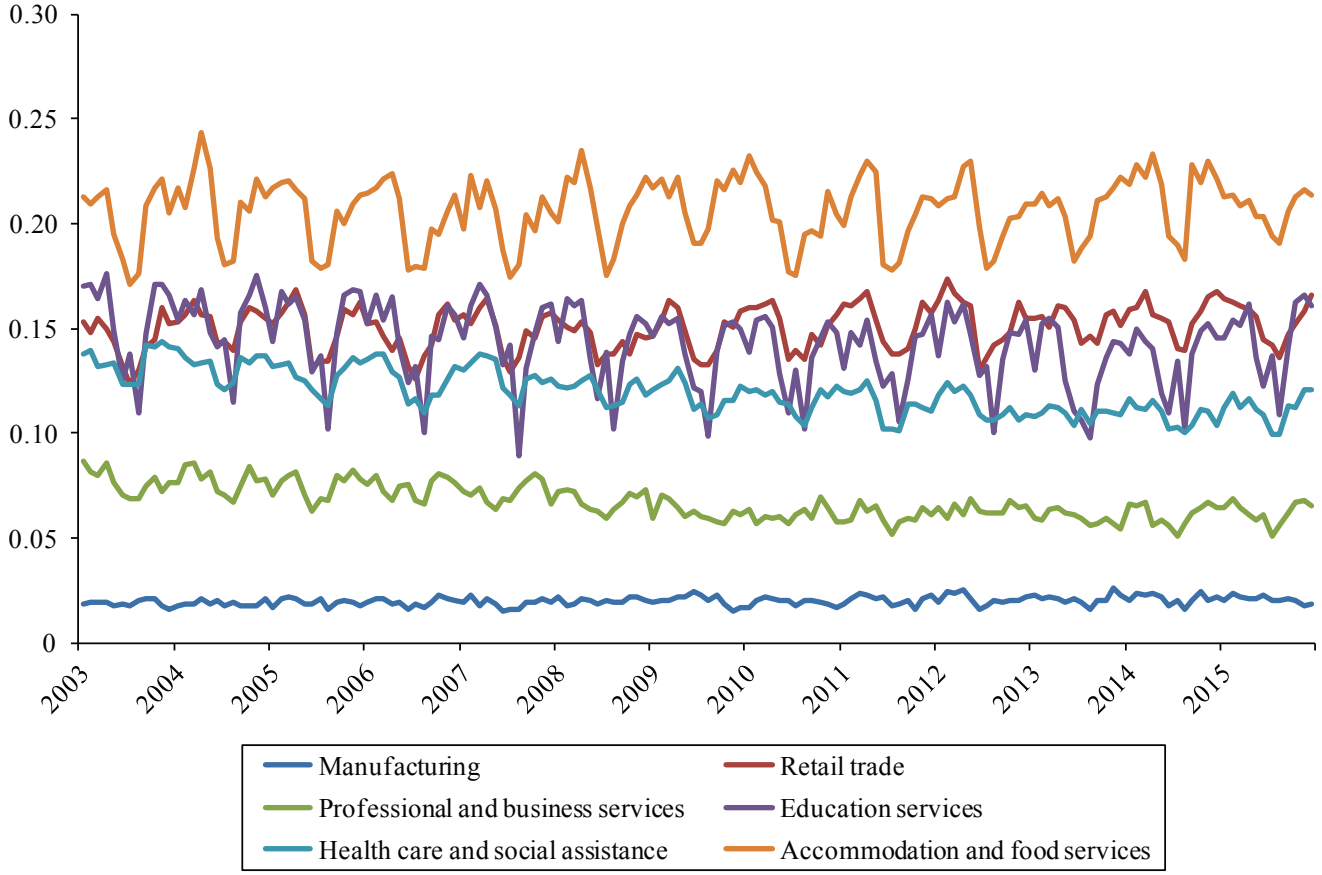
NOTE: Figure plots mean state-level residuals from a regression of a variable indicating worker receives employer-sponsored health insurance on demographic and job characteristics for six years prior to ACA passage (2004–2009).
SOURCE: March 2005–2010 CPS Supplements.

Figure 2 Share of Involuntary Short-Hours (< 30 hours/week) Part-Time Employment, Selected Sectors, 2003–2015



SOURCE: Authors' tabulations of monthly CPS public use files.

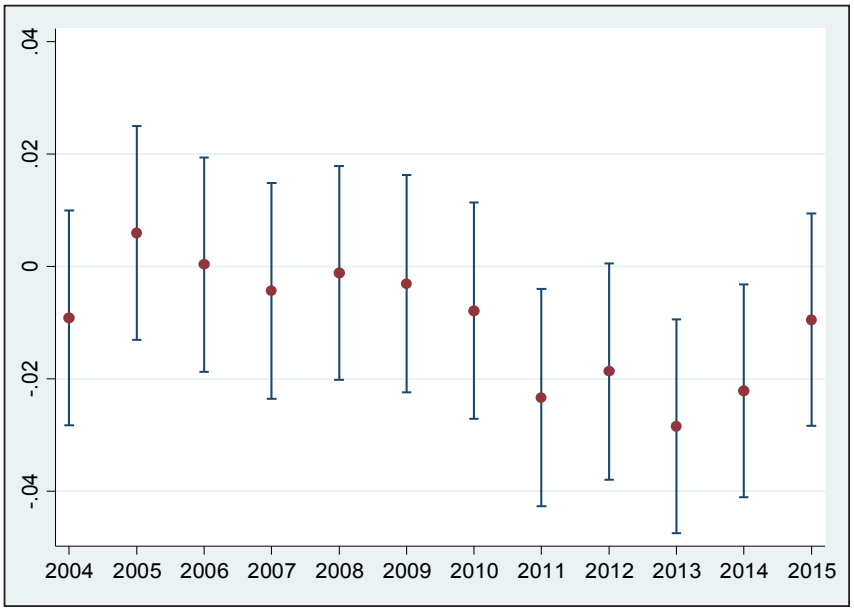
Figure 3 Share of Voluntary Short-Hours (< 30 hours/week) Part-Time Employment, Selected Sectors, 2003–2015



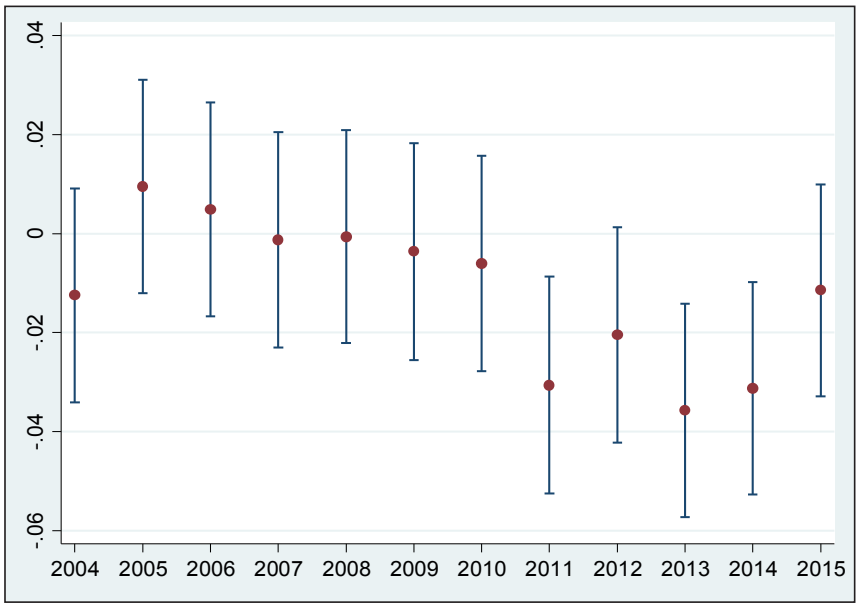
SOURCE: Authors' tabulations of monthly CPS public use files.

Figure 4 Estimated Effects of ACA on Involuntary Short-Hours Part-Time Employment in Retail, Accommodations, and Food Services Sectors, 2003–2015

Weekly hours < 30



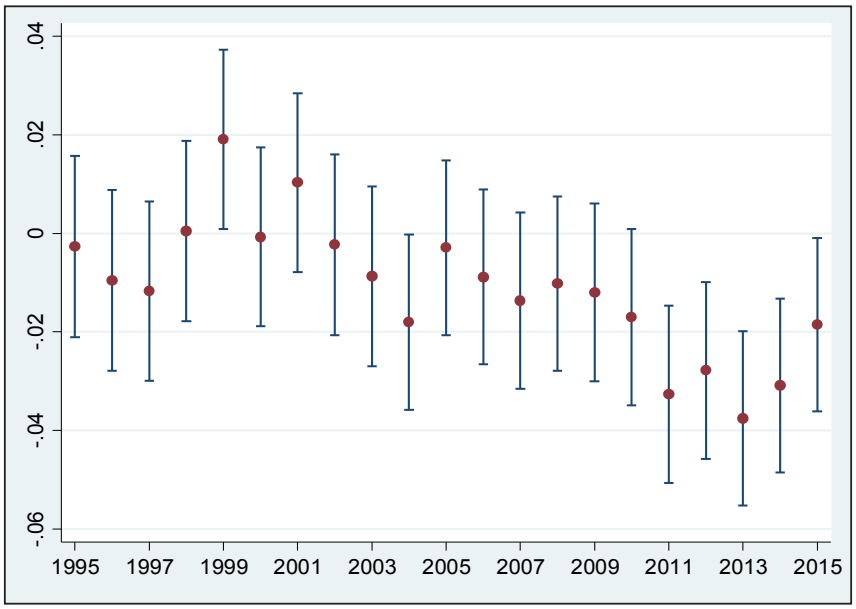
Weekly hours ≤ 30



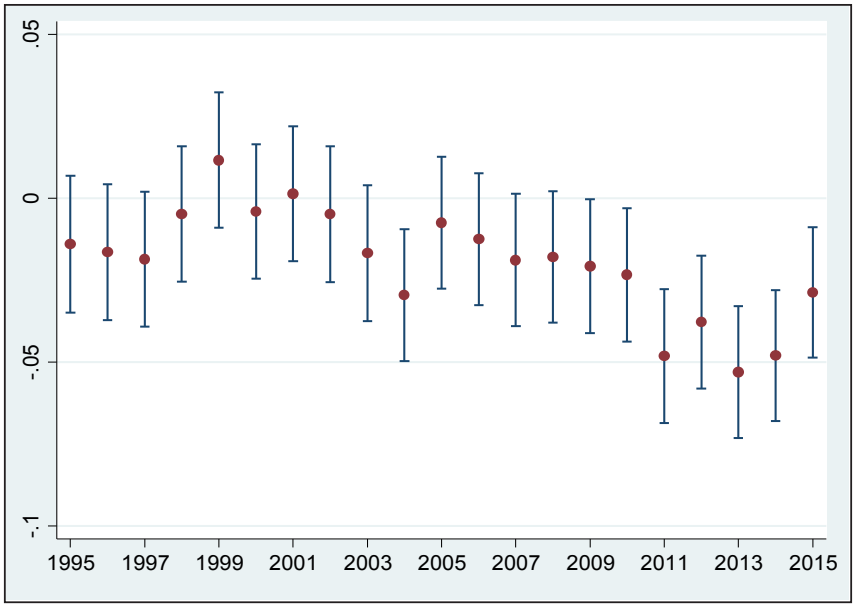
NOTE: Each set of plots displays selected coefficient estimates and 95% confidence intervals from models in which the dependent variable indicates involuntary part-time employment with weekly hours less than 30 or involuntary part-time employment with weekly hours of 30 or less. Reported coefficient estimates are for variables measuring the interaction of employment in the Hawaiian retail, accommodations, and food (RAF) sectors with the indicated year. All models also include demographic and job characteristics variables (age, age^2, gender, race-ethnicity, education, occupation), state-month-quarter, RAF sector-month-quarter, and RAF sector-state fixed effects. Data come from the monthly CPS for the period 2003–2015. Observations include wage and salary workers aged 18–64; observations are weighted by CPS weights. ~ denotes significance at the 0.10 level, * at the 0.05 level, and ** at the 0.01 level.

Figure 5 Estimated Effects of ACA on Involuntary Short-Hours Part-Time Employment in Retail, Accommodations, and Food Services Sectors, 1994–2015

Weekly hours < 30



Weekly hours ≤ 30



NOTE: Each set of plots displays selected coefficient estimates and 95% confidence intervals from models in which the dependent variable indicates involuntary part-time employment with weekly hours less than 30 or involuntary part-time employment with weekly hours of 30 or less. Reported coefficient estimates are for variables measuring the interaction of employment in the Hawaiian retail, accommodations, and food (RAF) sectors with the indicated year. All models also include demographic and job characteristics variables (age, age^2, gender, race-ethnicity, education, occupation), state-month-quarter, RAF sector-month-quarter, and RAF sector-state fixed effects. Data come from the monthly CPS for the period 1994–2015. Observations include wage and salary workers aged 18–64; observations are weighted by CPS weights. ~ denotes significance at the 0.10 level, * at the 0.05 level, and ** at the 0.01 level.