The Effect of an Employer Health Insurance Mandate on Insurance Coverage and Labor Market Outcomes: Evidence from Hawaii

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Background and Motivation: Employer-Sponsored Insurance

- Employer-sponsored insurance (ESI) is a cornerstone of the US health care system.
- ESI coverage has been declining gradually for over 2 decades.
- Policy Question: Should health care reforms build on or reduce the role of employers?
- ***One approach: mandate employers to provide insurance***.

Background and Motivation: Employer Mandate Proposals

- For many years, employer mandates played a central role in reform proposals.
  - Richard Nixon proposed an individual mandate in 1974.
  - An employer mandate was a centerpiece of Clinton's 1993 health plan.
  - Several states have proposed employer mandates:
    - Massachusetts (1988)
    - Oregon (1989)
    - Washington (1993)
    - California's SB 2 (2002)

    None of these was enacted

Treatment of ESI in the Reform Bill

- An employer mandate is not part of the recent reforms.
  - The 2010 Reform bill is centered on an ***individual*** mandate (actually a tax penalty for not having insurance).
  - Individuals with incomes below 400% of the Federal Poverty Level and without access to ESI will receive refundable tax credits.

- There are new requirements for employers with more than 50 full-time employees.
  - Must pay a fee if 1 or more full-time employee receives a tax credit.
  - Note: Over 95% of firms with more than 50 employees offer insurance.

- ***Given the importance of ESI in the US system, it is still of interest to understand the effect of an employer insurance mandate.***

Background and Motivation: Previous Mandate Bills

- The only employer health insurance mandate ever enacted is Hawaii's Prepaid Health Care Act (PHCA), passed in 1974.

- Received considerable attention in the health care reform debate of the early 1990s.

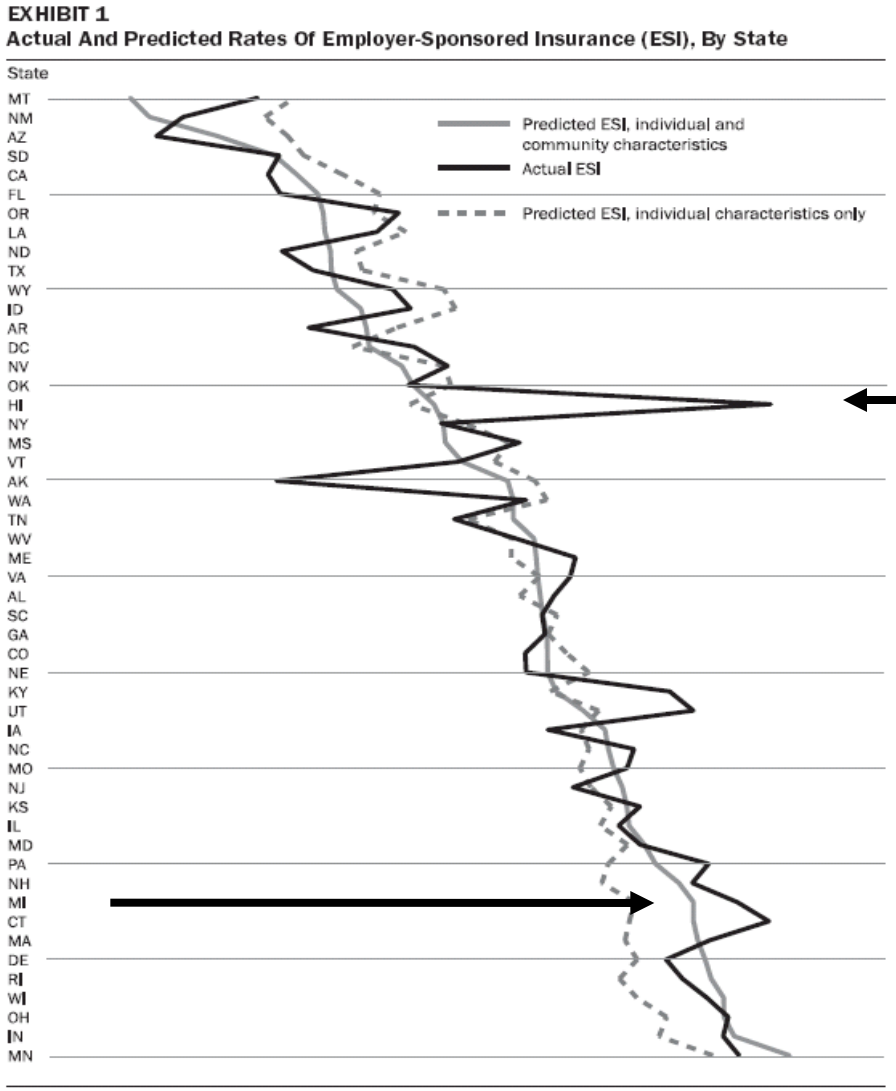
- But it has received very little attention from researchers.
  - Probably because of empirical challenges.

Challenge: What is the Counterfactual?

- Most obvious point of comparison is other states. But, is Hawaii too “different”?

- Hawaii is actually not unusual with respect to expected insurance coverage (based on worker demographics and labor market factors).

Expected and Actual ESI Coverage by State



Hawaii

Michigan

Source: Kronick et al (2004)

Industry Distribution: Hawaii and Other States

	1980-1983		2003-2006	
	Hawaii	**Other States**	**Hawaii**	**Other States**
Agriculture	0.045	0.021	0.017	0.011
Construction	0.077	0.063	0.093	0.077
Manufacturing	**0.084**	**0.287**	**0.045**	**0.153**
Transp., Utilities, Comm.	0.086	0.070	0.080	0.070
Retail, Wholesale Trade	0.298	0.242	0.186	0.180
F.I.R.E.	0.111	0.070	0.077	0.080
Business & Prof. Services	0.196	0.184	0.293	0.302
Personal Services	**0.085**	**0.038**	**0.187**	**0.103**
Entertainment Serv.	0.015	0.012	0.019	0.018

Occupation Distribution: Hawaii and Other States

	1980-1983		2003-2006	
	Hawaii	**Other States**	**Hawaii**	**Other States**
Managerial	0.097	0.090	0.124	0.128
Professional, Technical	0.120	0.116	0.134	0.164
Sales	0.103	0.082	0.131	0.129
Administrative	0.195	0.187	0.159	0.148
Services	**0.196**	**0.134**	**0.225**	**0.163**
Prod/craft/repair	0.117	0.142	0.097	0.090
Oper/fab/labor	0.059	0.135	0.041	0.086
Trans/movers	0.039	0.042	0.044	0.045
Handlers/cleaners	0.042	0.054	0.030	0.038
Farm	0.032	0.016	0.015	0.009

Another Challenge: Inference

- Even if other states are a reasonable comparison group, how likely is it that with 27 years of CPS data we would find statistically significant differences if we compared any other state to the remaining 50?

- Our strategy: a permutation (placebo) test for hypothesis testing.
  - Compare every state to the other 50.
  - Conclude that there is a real "Hawaii effect" only if that effect stands out relative to all other states.

Another Challenge: Limited “Pre” Data

- The law was passed before national data sets included questions about health insurance.
- But, because of legal challenges, the law did not go into effect immediately.
- We do have data prior to 1983, when the legal issues were resolved.

Overview

1. A Brief History of Hawaii's PHCA
2. Economics of Employer Benefit Mandates
3. Data and Empirical Strategy
4. The Effect of the PHCA on Health Insurance Coverage
5. The Effect of the PHCA on Labor Market Outcomes
6. Conclusions

A Timeline of Hawaii's PHCA

- **1974:** Hawaiian Legislature passes PHCA; US Congress passes ERISA
- **1975**: Both laws become effective in January
- **1976:** Standard Oil of CA challenges PHCA in court
- **1977:** US District Court of North CA rules in favor of Standard Oil
- **1980:** US Court of Appeals, 9th Circuit affirms this ruling
- **1981:** US Supreme Court affirms lower court rulings
- **1982:** US Congress passes specific ERISA exemption for PHCA
- **1983**: PHCA re-instated

Hawaii's PHCA: Coverage

- Covers all private sector employers (no firm size exemption)

- Employers must provide insurance for all workers except:
  - Part-time (less than 20 hrs/week)
  - New hires (employed less than 4 consecutive weeks)
  - Seasonal employees
  - Paid by commission

- Minimum benefit package based on plans with the greatest number of subscribers statewide.

Hawaii's PHCA: Enforcement and Compliance

- Law is enforced by the State Department of Labor.

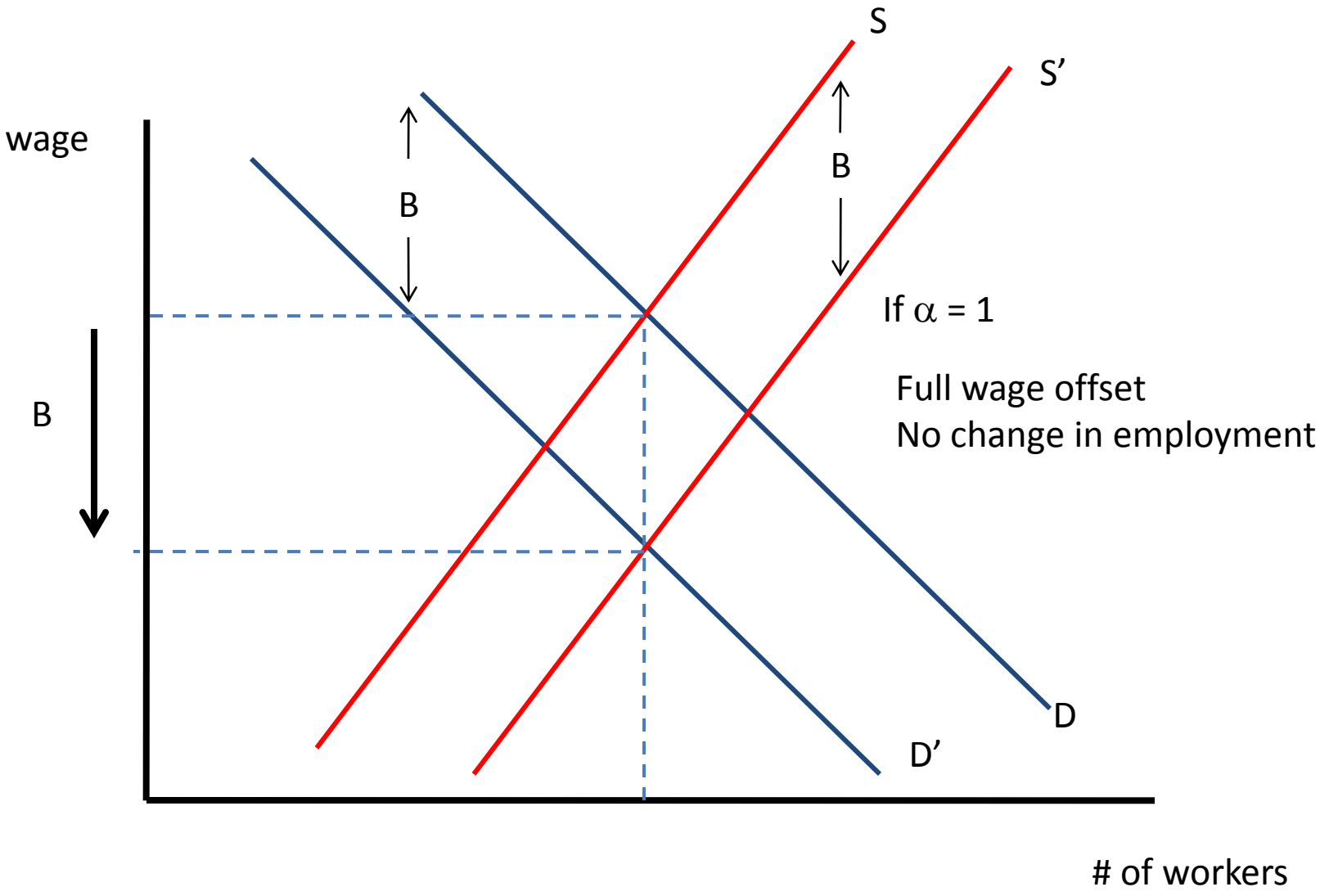
- Employers that fail to comply:
  - Are liable for health costs of employees that should have been covered.
  - Can be fined and prohibited from doing business in the state.

- No official data, but compliance is believed to be high.

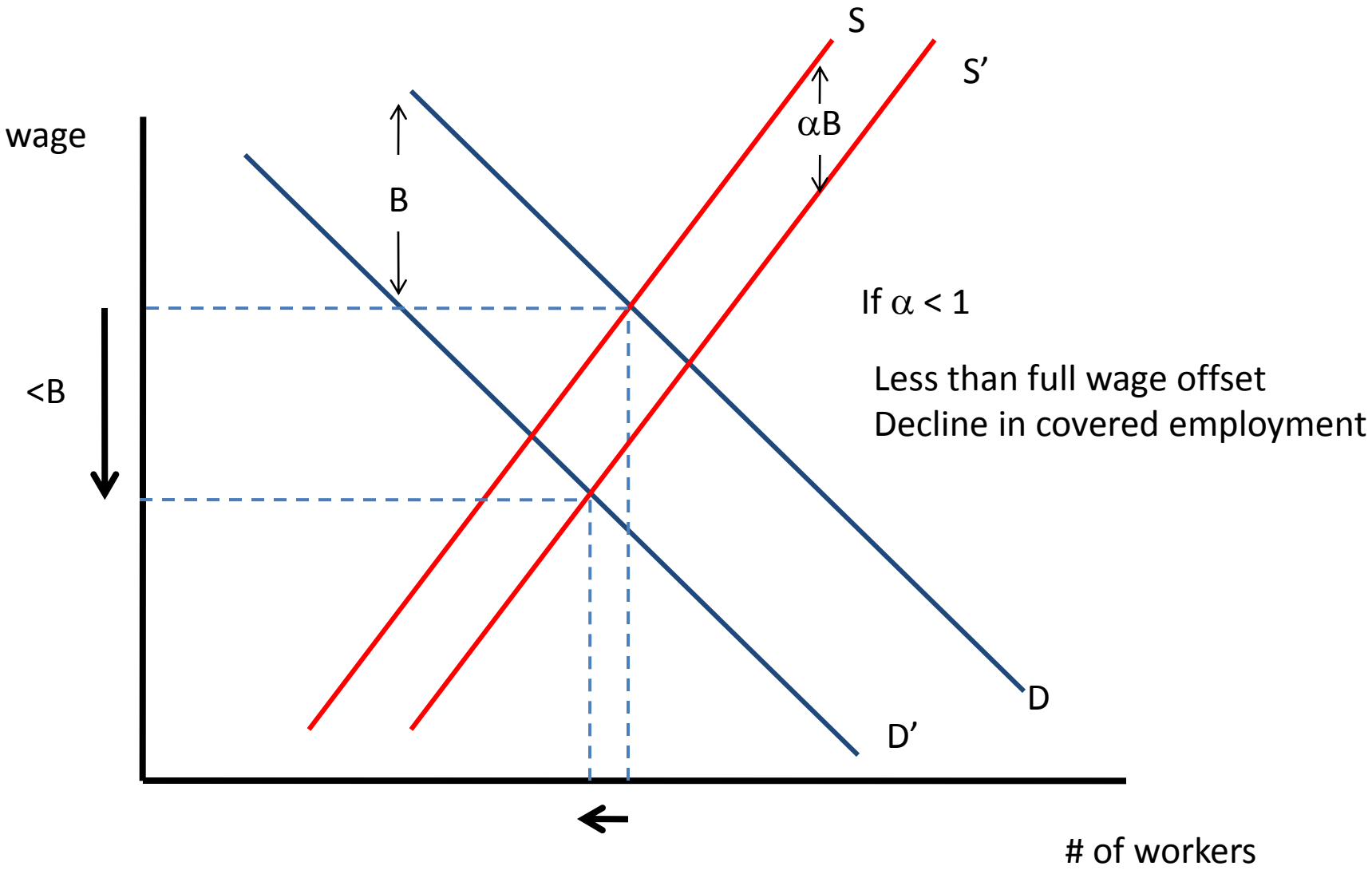
Basic Economics of Employer Mandated Insurance

- Summers (*AER* 1989) outlines a simple demand-supply model for evaluating employer benefit mandates.
- Start with a market where compensation is entirely in cash wages.
- Mandate shifts the labor demand curve by the cost of the mandate (B).
- But, since workers value the benefit, labor supply curve shifts out. Let αB = worker valuation.
- Effect on hours, employment depends on whether $\alpha > 1$ or $\alpha < 1$.

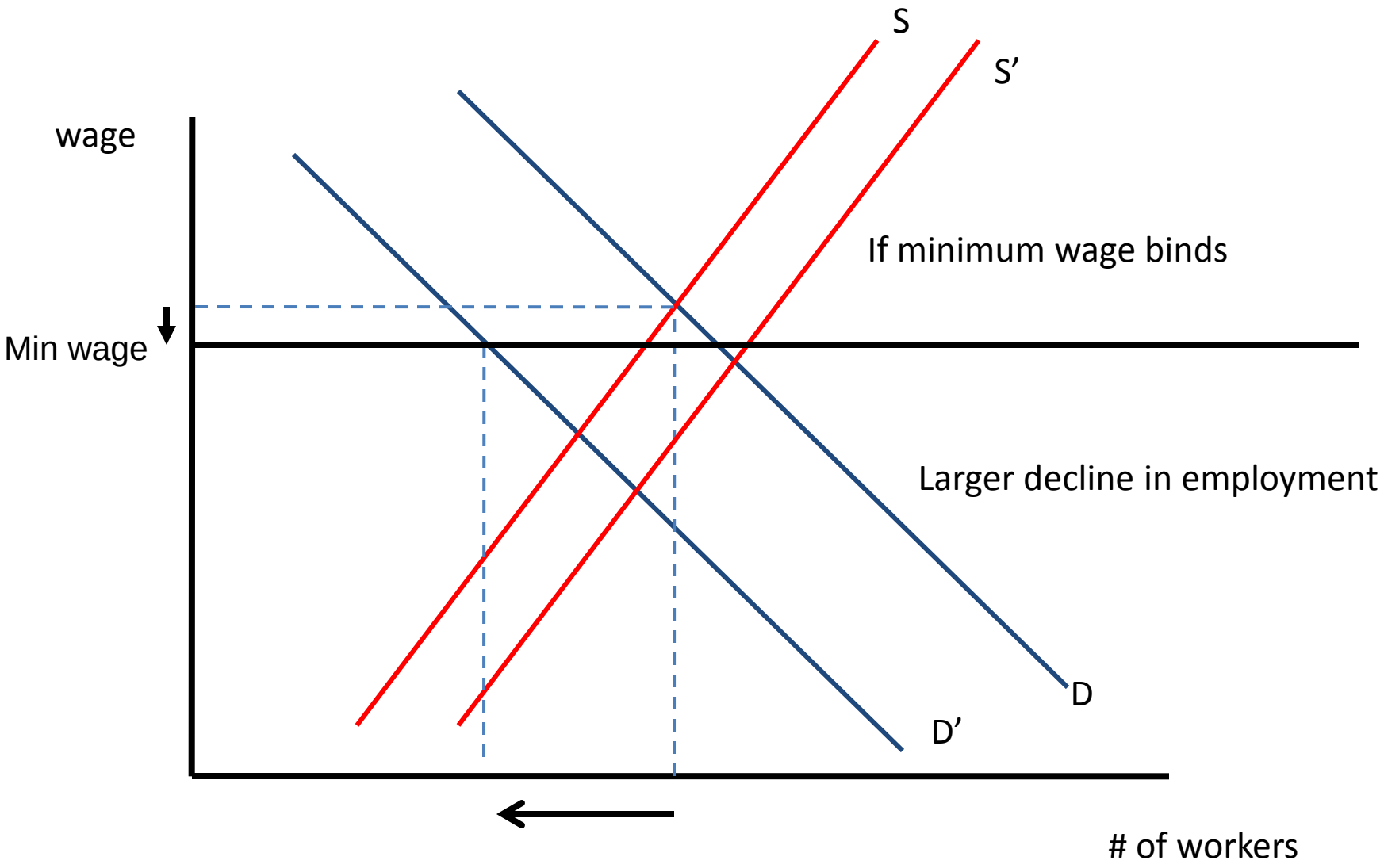
The Economics of an Employer Mandate



The Economics of an Employer Mandate



The Economics of an Employer Mandate

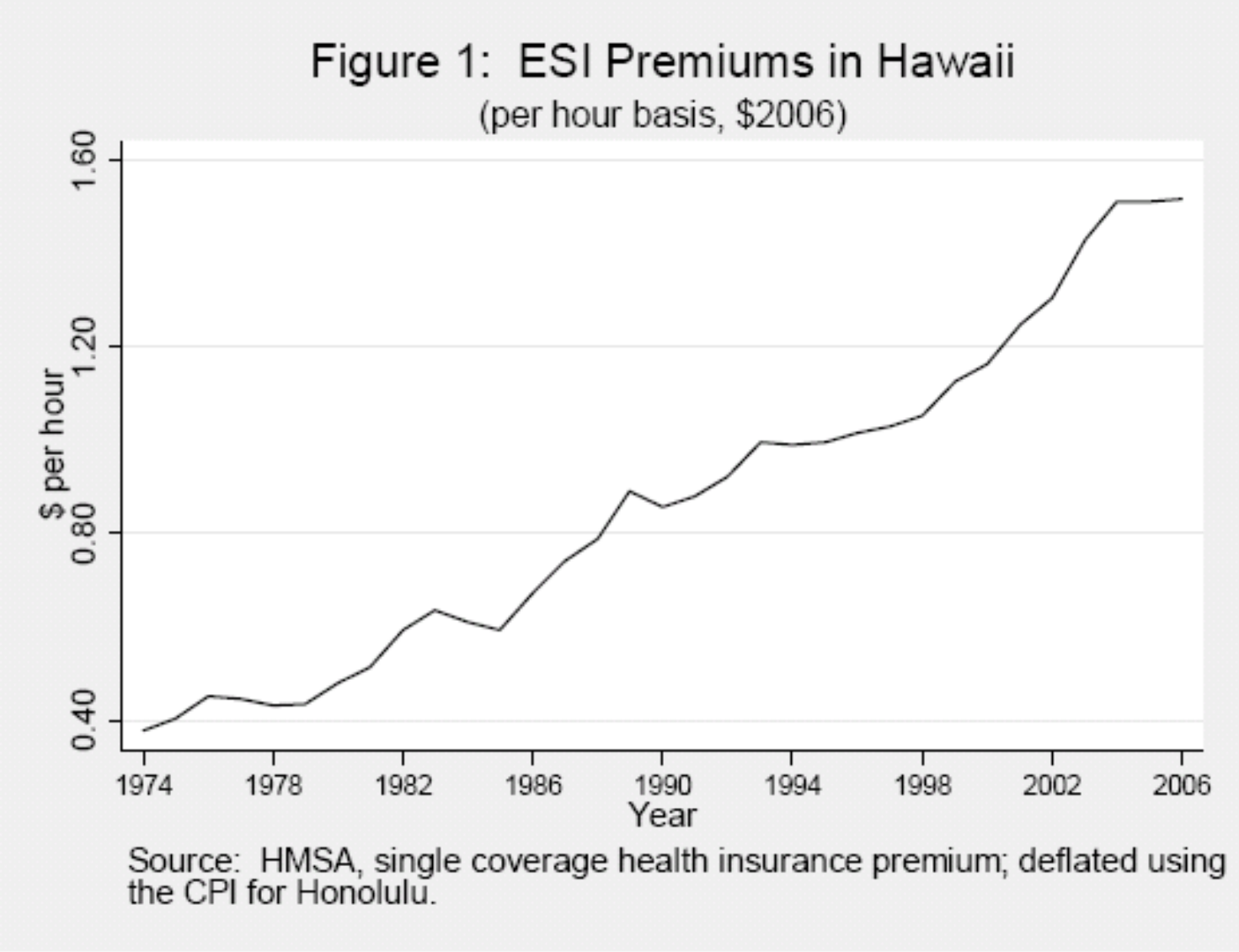


Empirical Implications

- Effect of a mandate should be strongest on workers who are least likely to receive ESI in a voluntary market.
  - e.g. low skill workers

- If wages of these workers cannot fully adjust, we would expect covered employment to fall. Either:
  - Employment in exempt categories ↑
  - Employment ↓

The cost of the PHCA has grown over time.



Implications of Rising Costs

- While employers may have simply absorbed initial cost, this has become increasingly hard to do.
- A simple “diff-in-diff” approach to evaluating the PHCA doesn’t make sense.
- Better to look for diverging trends between Hawaii and other states.

Data : Current Population Survey, 1979-2006

- March Annual Demographic Files
  - Insurance for prior year
    - ***We focus mainly on coverage from own employer (Own-name ESI)***

- Merged Outgoing Rotation Group (MORG) Files
  - Hourly wage
  - Employment, hours last week

Data: Covariates

- Individual-level variables
  - demographics and human capital: race, gender, marital status, gender x marital, age (quartic), gender x age, education, urban residence, veteran status, nativity (later years)
  - Job characteristics: industry, occupation, firm size (later years)

- State x Year variables
  - Real minimum wage
  - Real GDP growth
  - Union density

Testing for Heterogeneous Treatment Effects

- Simple approach: stratify by education
  - High school or less vs. College or more
- More refined approach: “prognostic score”
  - Use March data from rest of US
  - Estimate logit of own name ESI as a function of worker characteristics
  - Use fitted values to calculate probability of obtaining ESI in full sample
  - Stratify analysis by predicted probability

Characteristics of the Propensity Score Quintile Groups

	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile
Mean own name ESI	.390	.512	.603	.700	.767
Age	26.7	39.0	39.1	42.2	45.0
Married Male	.137	.241	.297	.585	.623
Education					
-- Less than HS	.418	.249	.008	.000	.000
-- HS Degree	.329	.425	.532	.408	.039
-- Some College	.245	.292	.211	.431	.177
-- College +	.008	.034	.247	.163	.784

Hypothesis Testing

- Standard "state random effects" set-up to test for difference between Hawaii (H) and other states:

$$ESI_{is} = X_{is}\beta + \delta H_i + e_s + u_i$$

  - Assumes all state effects (*e*) come from the same distribution under the null.

- What if we did the same test for some other state? Would we detect a similar "effect"?

A Permutation (Placebo) Test

- Run the model 51 times, comparing one state to all others.

- Use the distribution of these placebo effects to test "significance" of estimate for Hawaii.

  $\Rightarrow$ *If "Hawaii effect" looks unusual relative to all other estimates, reject the null.*

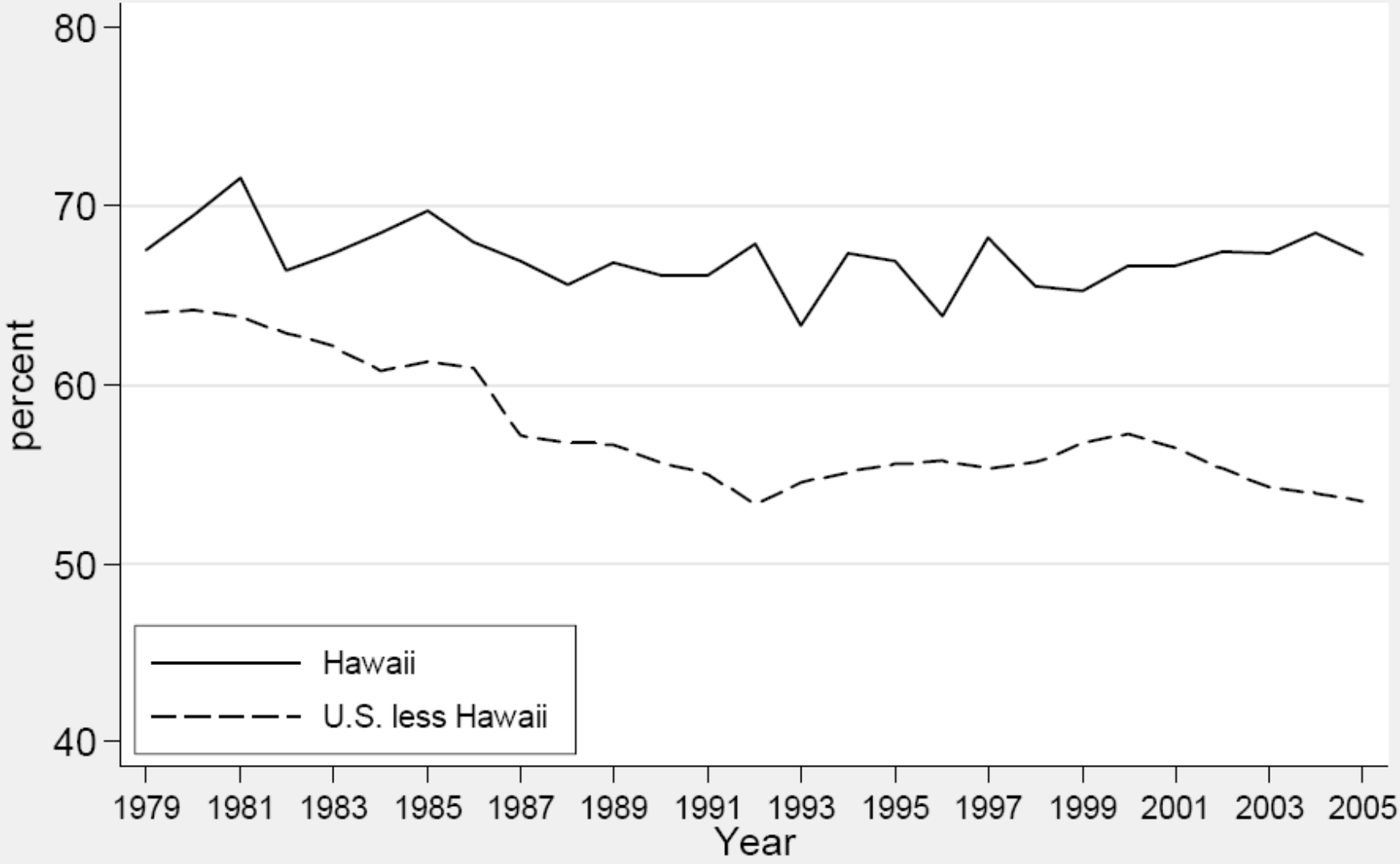
- Produces more conservative inferences relative to the usual "**`reg y x, cluster robust`**" approach.

Results: Health Insurance Coverage

- Trends in ESI Coverage, 1979 to 2005
- Regression-Adjusted Differences, 1979-1982 and 2002-2005
- Distribution of Coverage, 2002-2005

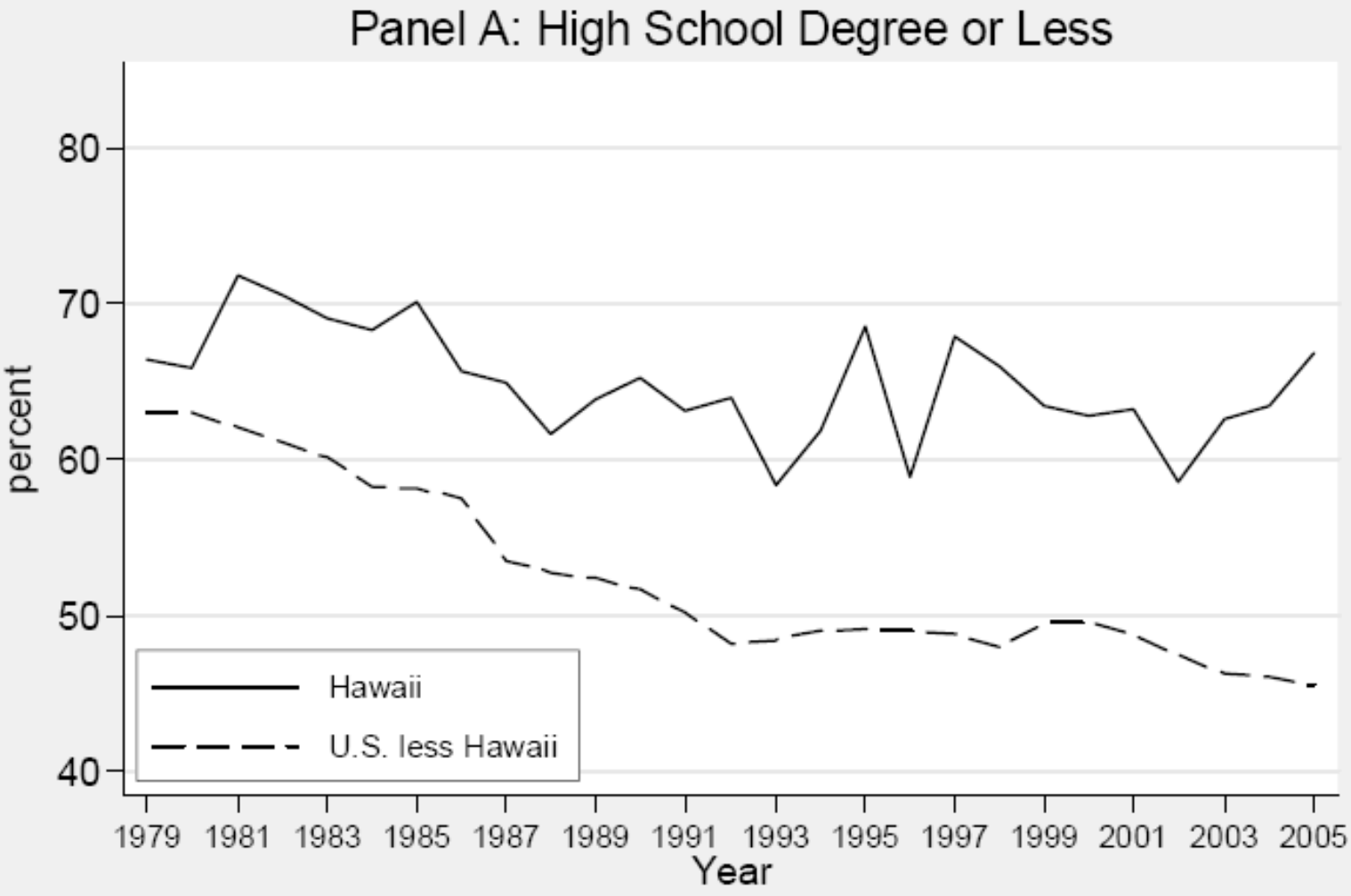
Figure 2: ESI Coverage, 1979-2005

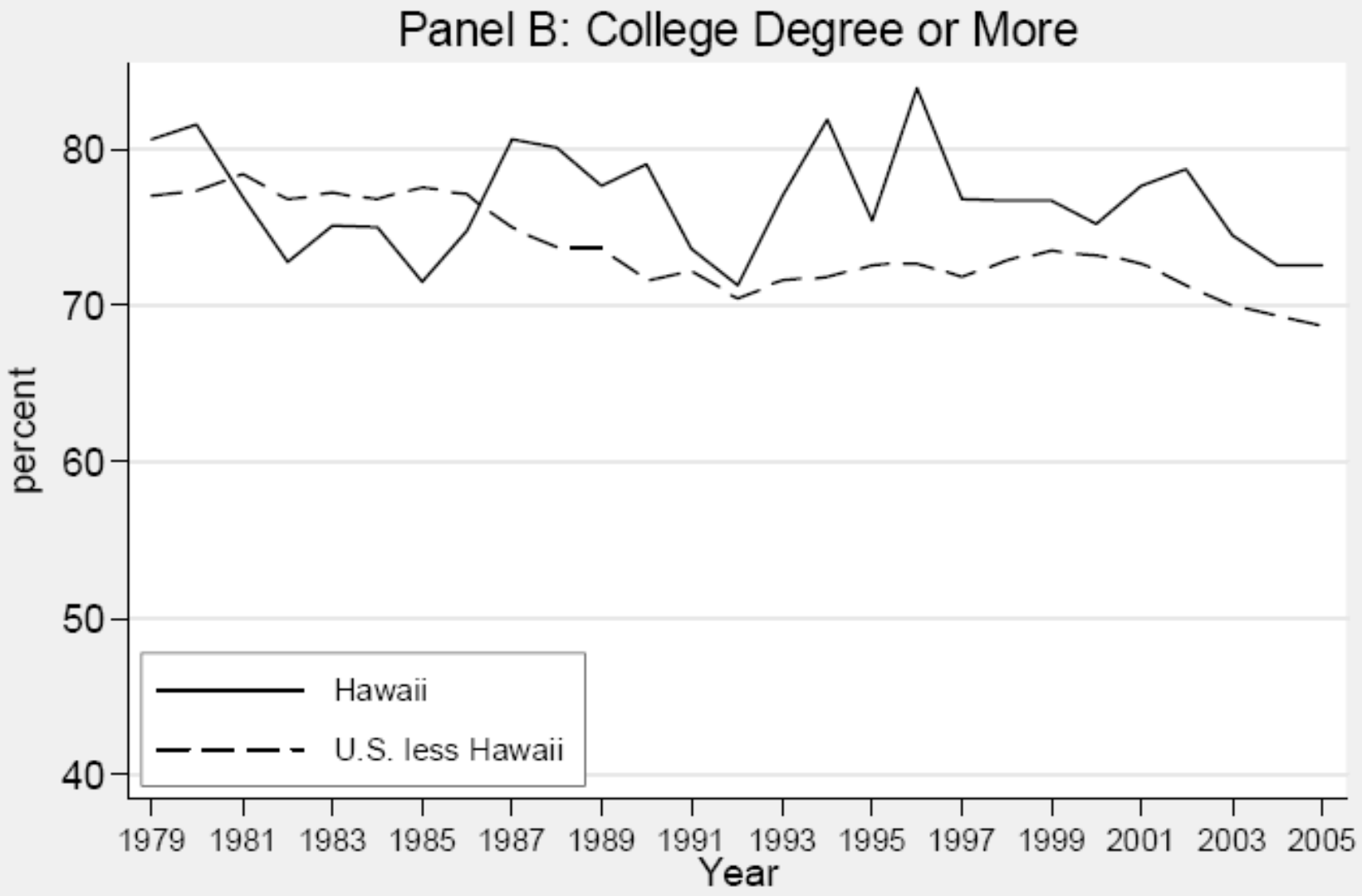
(private sector employees)



Note: Authors' tabulations (weighted) from March CPS files, 1980-2006.

Figure 3: ESI Coverage by Education, 1979-2005
(private sector employees)





Note: Authors' tabulations (weighted) from March CPS files, 1980-2006.

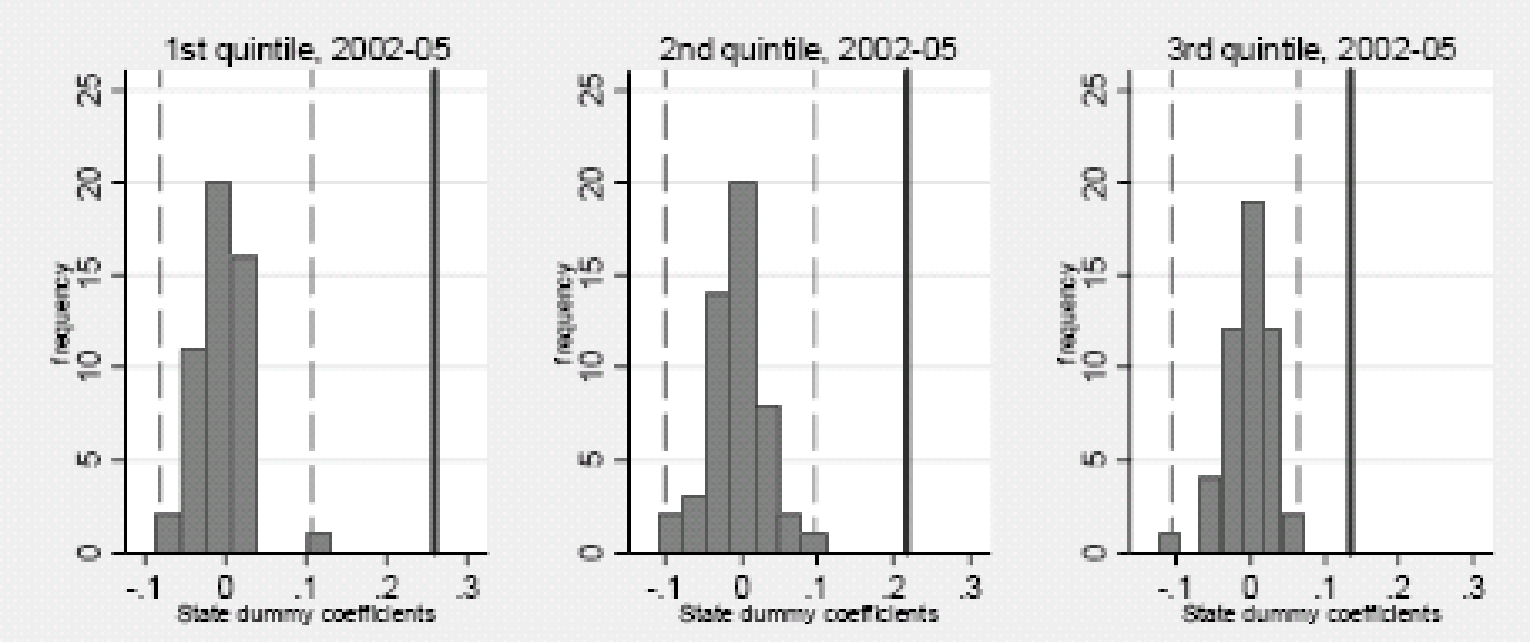
Table 1. ESI Coverage in Hawaii vs. Rest of US
Panel A: 1979-1982 (Full Sample)

	Raw Diff	Regression-Adjusted
Hawaii less all others	0.053	0.136
Placebo Estimate Results		
2.5 Percentile	-0.124	-0.060
97.5 Percentile	0.073	0.144

Table 1. ESI Coverage in Hawaii vs. Rest of US
Panel B: 2002-2005 (Full Sample)

	Raw Diff	Regression-Adjusted
Hawaii less all others	**0.140**	**0.164**
Placebo Estimate Results		
2.5 Percentile	-0.108	-0.066
97.5 Percentile	0.055	0.071

Coverage Differences by ESI Quintile, 2002-2005



The Distribution of Insurance Coverage, 2002-2005

	All Workers		
	US	**Hawaii**	
ESI-Own	53.8%	67.8%	Δ = 14.0 pts
ESI-Dependent			
Total			Δ = 12.0 pts
Private Non-Group			
Public			
Uninsured			Δ = -10.6 pts

The Distribution of Insurance Coverage, By Education, 2002-2005

	HS degree or less		*College educated*	
	US	Hawaii	US	Hawaii
ESI-Own		Δ =16.4		Δ =4.4
ESI-Dependent				Δ =-2.6
Total				Δ =1.8
Private Non-Group				
Public				
Uninsured		Δ =-13.7		Δ =-2.1

What Happened to Wages?

- Since the cost of complying with the mandate has increased over time, we would expect wages to grow less rapidly in Hawaii than in other states.
- Divergence should be greatest for lower-skilled workers for whom the coverage effects were the strongest.
- To test these predictions we estimate:

$$W_i = X_i'\beta + \gamma Hawaii + \delta\, TREND + \theta\, TREND \times Hawaii + e_s + u_i.$$

- Our interest is in θ.
- We estimate this regression for the full sample and by ESI quintile.

Wage Regression Results (Traditional Approach)

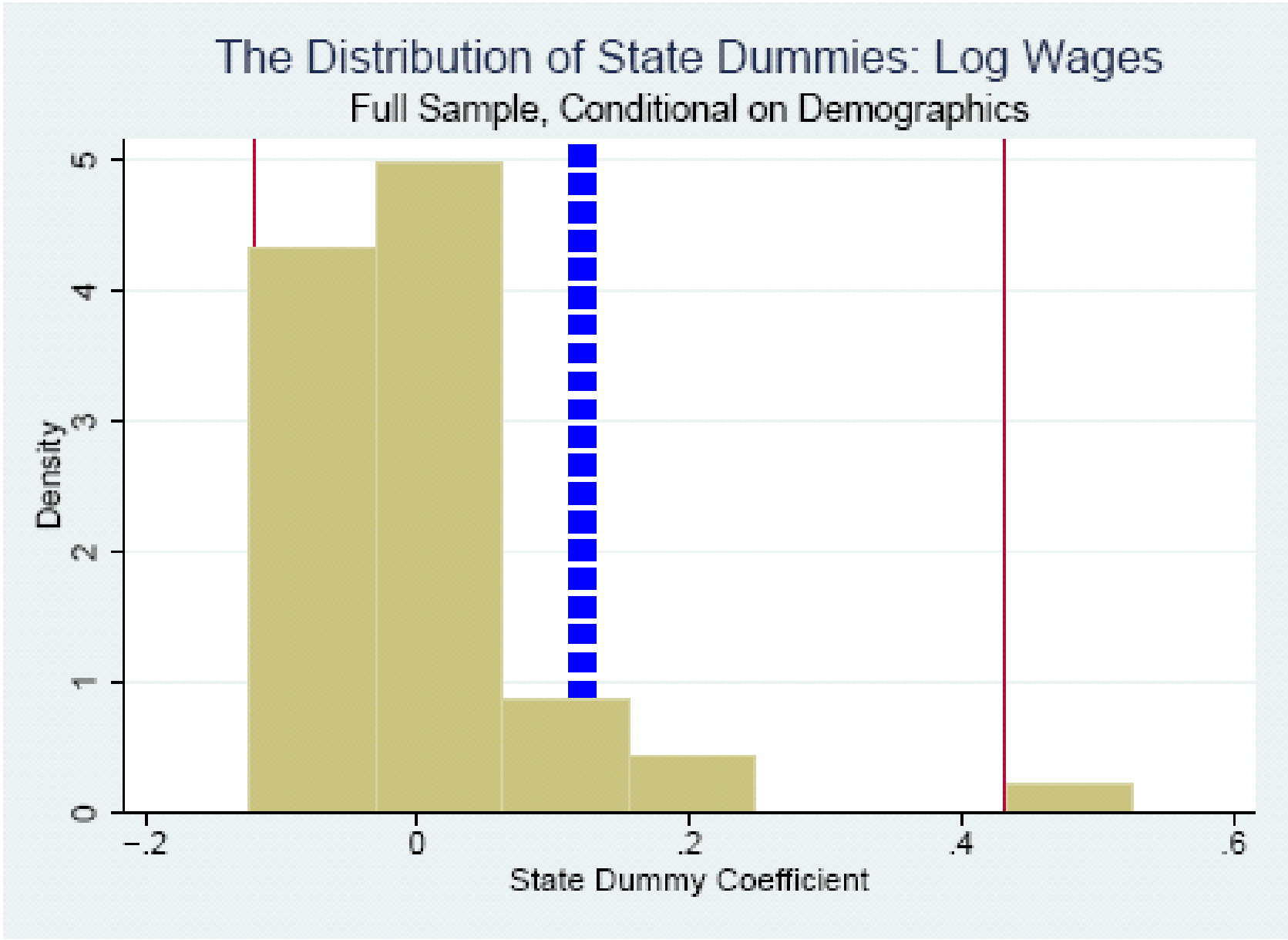
	Full Sample
Hawaii Dummy	0.0320
	(0.005)
	t =6.65
State x Trend (Hawaii)	-0.0017
	(0.003)
	t = - 5.32
N= 2,796,134	

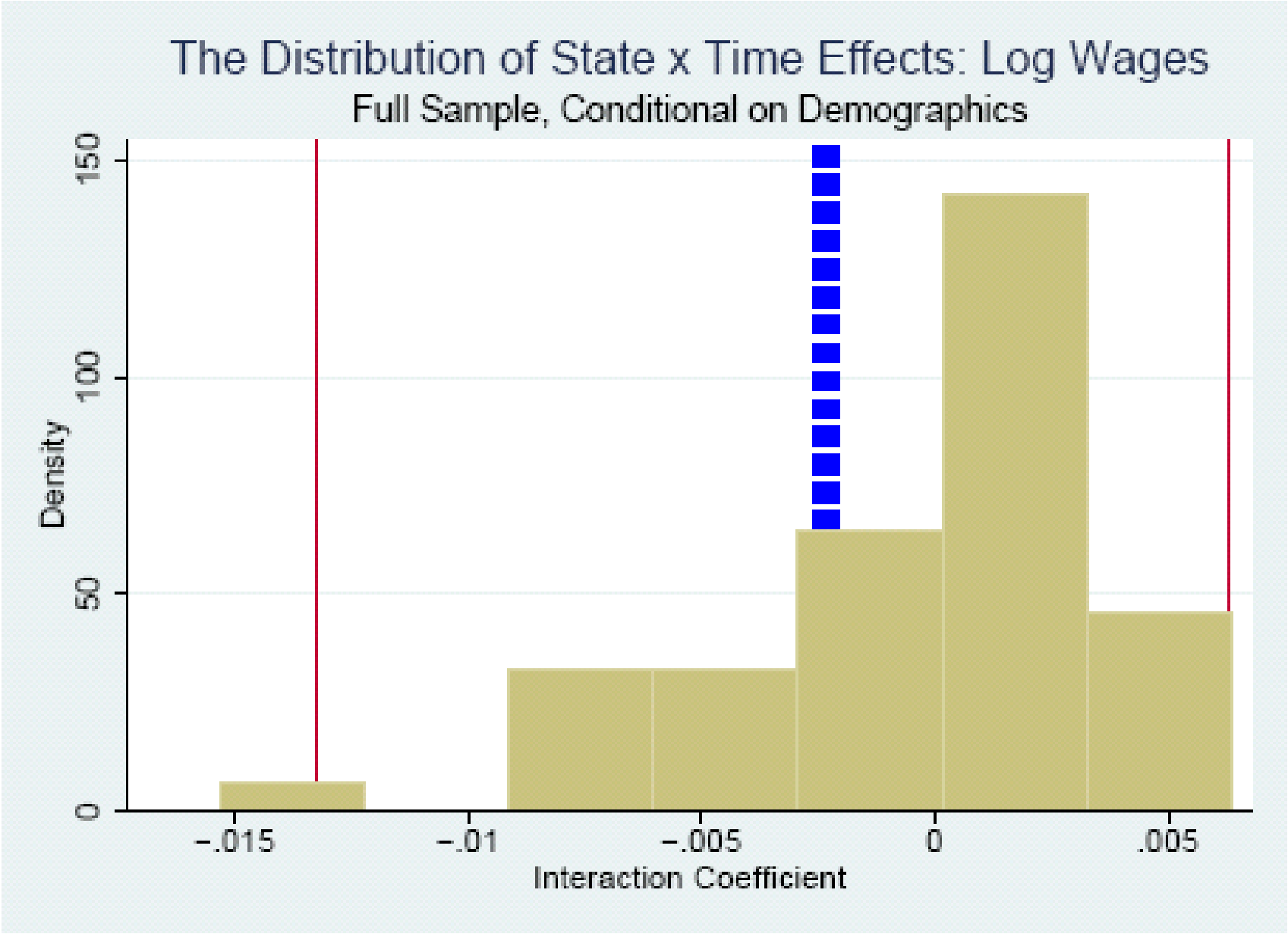
Standard errors are clustered by state.

- In the placebo regressions, absolute t-stat is greater than 2 for 37 states.

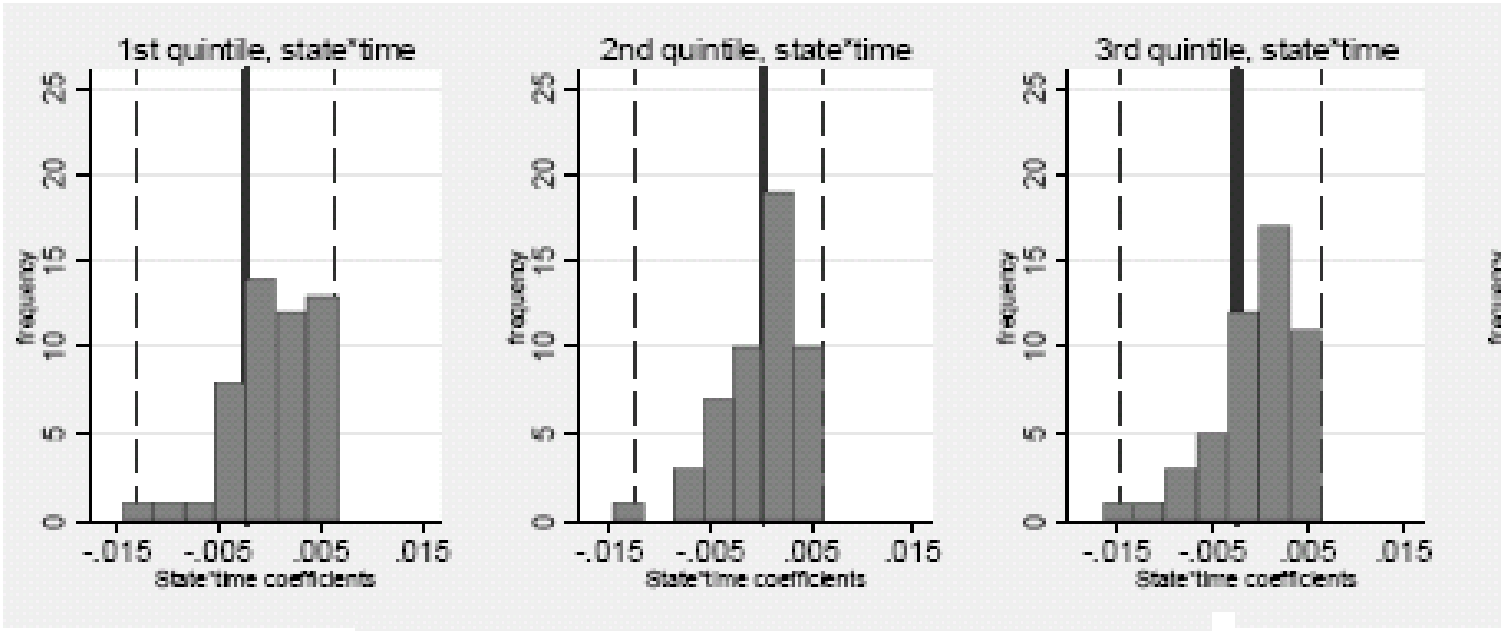
Table 2. Wage Regression Results

	Full Sample	1st ESI Quintile	5th ESI Quintile
State Dummy (Hawaii)	0.0320	0.0876	0.0032
Placebos: 2.5 Percentile	-0.1161	-0.1438	-0.1262
97.5 Percentile	0.3793	0.3901	0.3766
State x Trend (Hawaii)	-0.0017	-0.0023	-0.0046
Placebos: 2.5 Percentile	-0.0141	-0.0129	-0.0177
97.5 Percentile	0.0059	0.0063	0.0090


The Distribution of State Dummies: Log Wages
Full Sample, Conditional on Demographics
Density
0
1
2
3
4
5
−.2
0
.2
.4
.6
State Dummy Coefficient


The Distribution of State x Time Effects: Log Wages
Full Sample, Conditional on Demographics
Density
0
50
100
150
−.015
−.01
−.005
0
.005
Interaction Coefficient

LnWage Results
State x Time Coefficients: By ESI Quintile



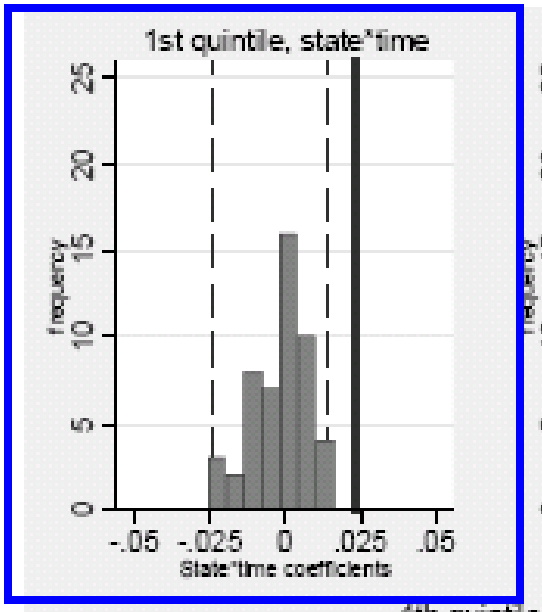
Was there a shift to part-time work?

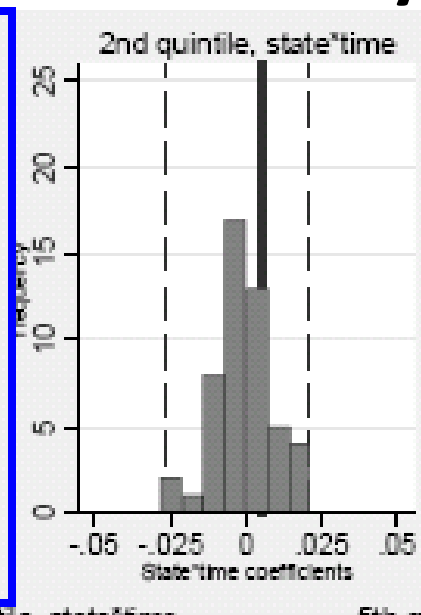
- Dependent variable = 1 if weekly hours < 20
- $PT_i = X_i'\beta + \gamma Hawaii + \delta\, TREND + \theta\, TREND \times Hawaii + e_s + u_i$.
- Estimated as a logit model (linear probability model gives similar results)
- Again, our interest is in the interaction between the time trend and the Hawaii dummy.

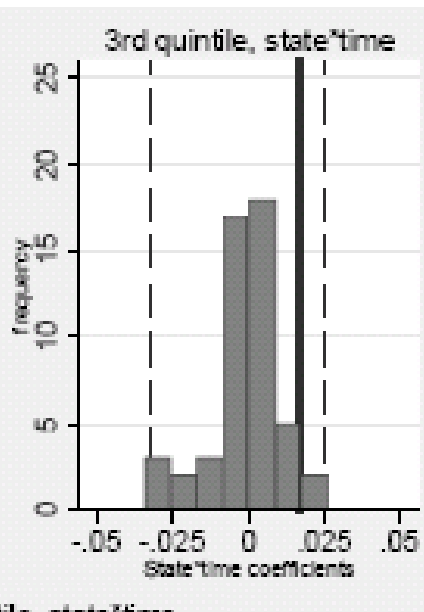
Table 4. Part-Time Work Regression Results

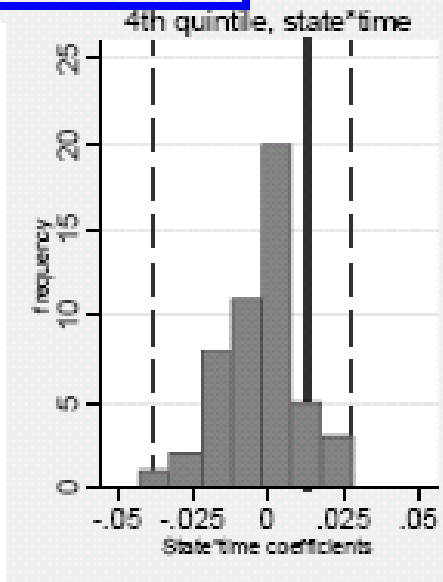
	Full Sample	1st ESI Quintile	5th ESI Quintile
State Dummy (Hawaii)	-0.5945	-0.7926	0.0616
Placebos: 2.5 Percentile	-1.0100	-1.0730	-0.5889
97.5 Percentile	0.0388	0.0384	0.6066
State x Trend (Hawaii)	**0.0171**	**0.0230**	0.0123
Placebos: 2.5 Percentile	-0.0204	-0.0243	-0.0459
97.5 Percentile	0.0124	0.0147	0.0344

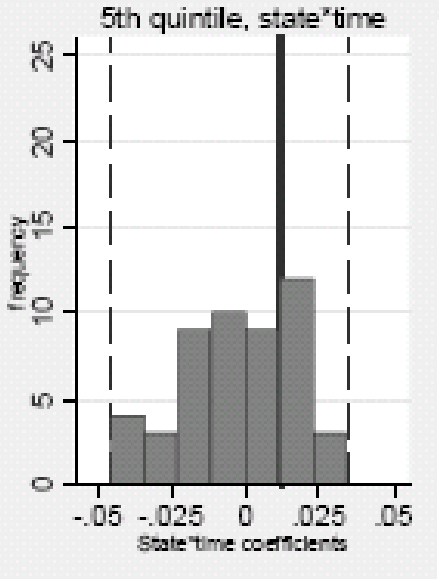
Pr(Hrs < 20) Results
State x Time Coefficients: By ESI Quintile











Results are Consistent with Anecdotal Evidence

" And there is growing evidence that as the economy has slowed and premiums have risen, employers have hired more part-time workers who are ineligible for benefits.

Barbara Zacchini, owner of Pizzeria Zacchini on the island of Hawaii, said she makes sure that her 17 part-timers work less than 20 hours a week so she does not have to pay for their care."

"In Hawaii's Health System, Lessons for Lawmakers,"

New York Times, 10/16/09

Employment Effects

- Sample consists of all working-age adults
- Dependent variable = 1 if employed
- $Emp_i = X_i' \beta + \gamma Hawaii + \delta TREND + \theta TREND \times Hawaii + e_s + u_i$.

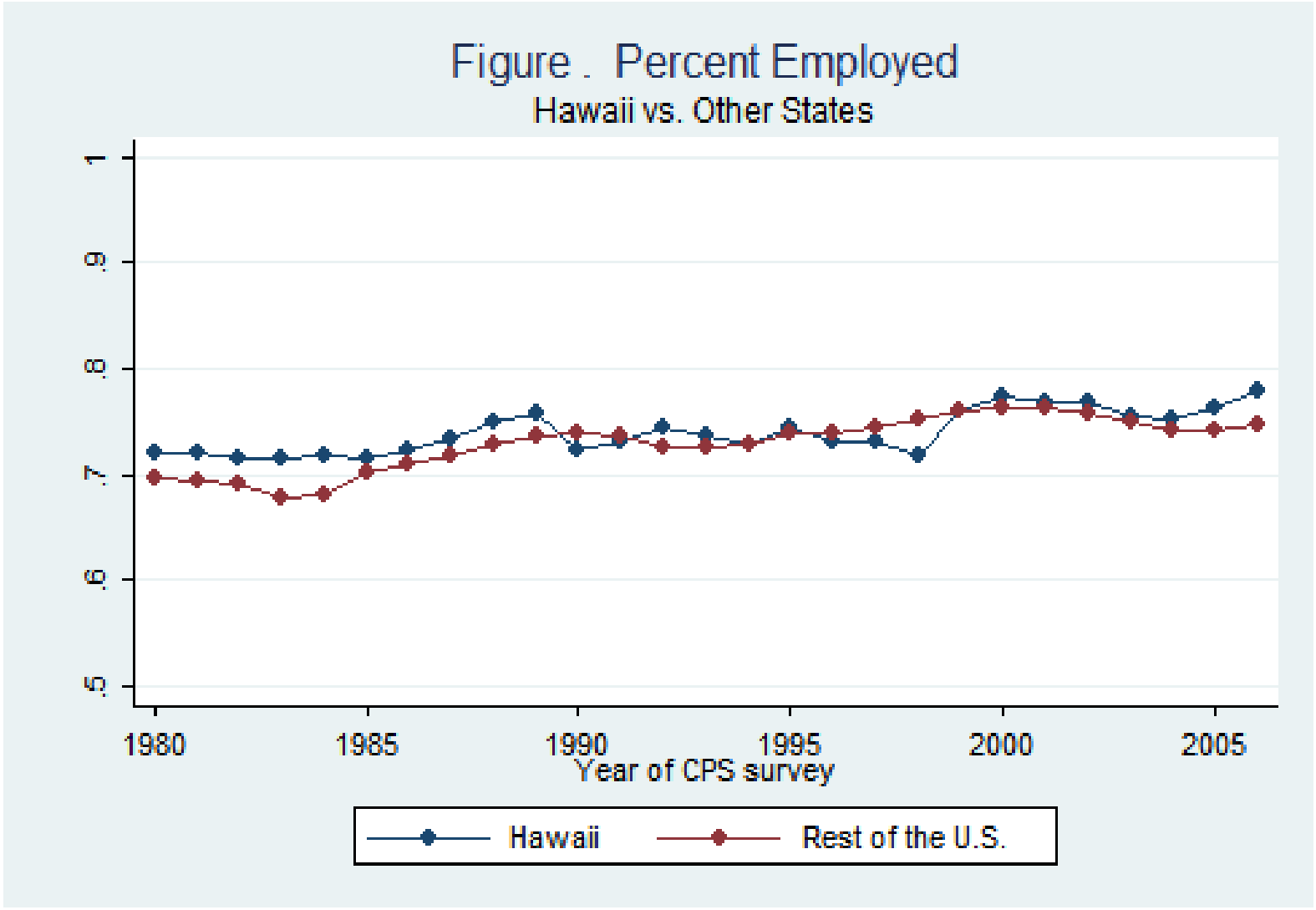
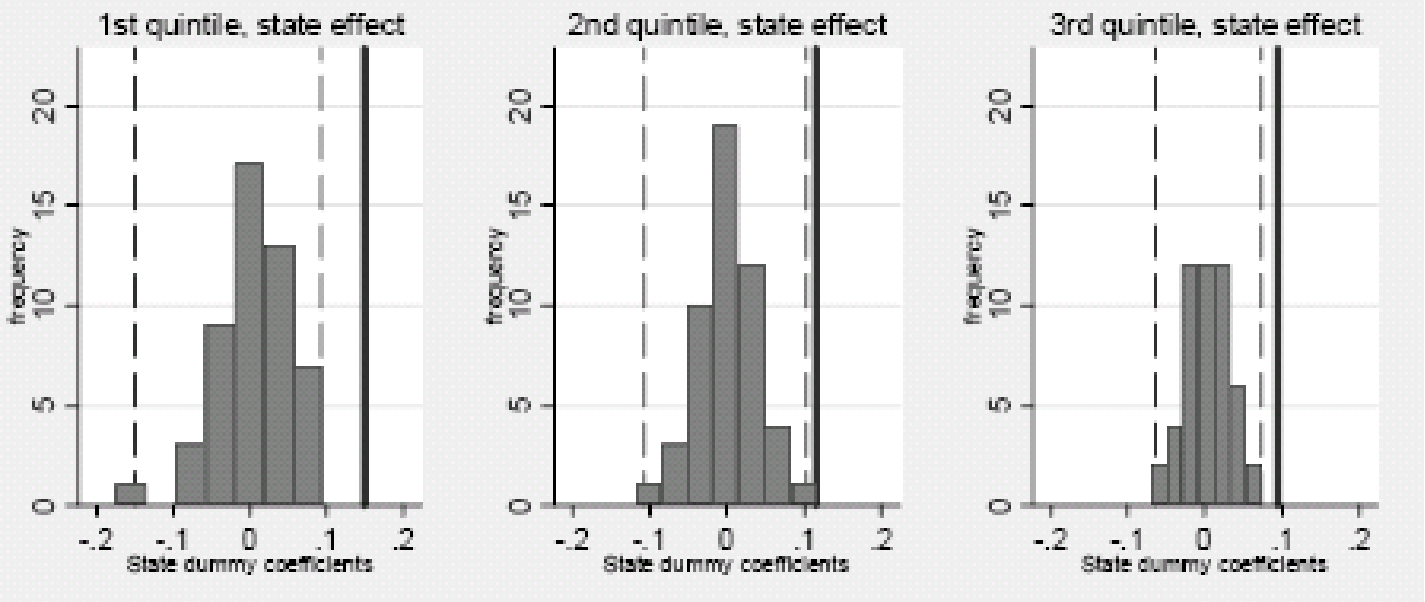


Figure . Percent Employed
Hawaii vs. Other States
1
.9
.8
.7
.6
.5
1980
1985
1990
1995
2000
2005
Year of CPS survey
Hawaii
Rest of the U.S.

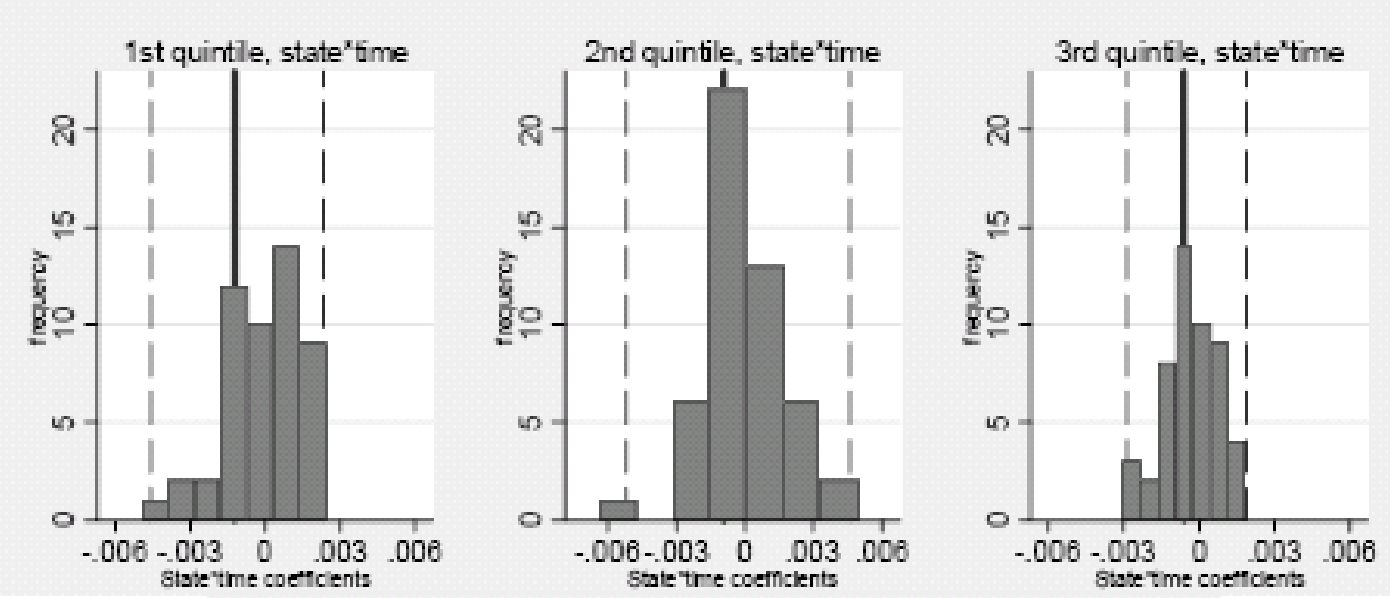
Table 5. Employment Regression Results

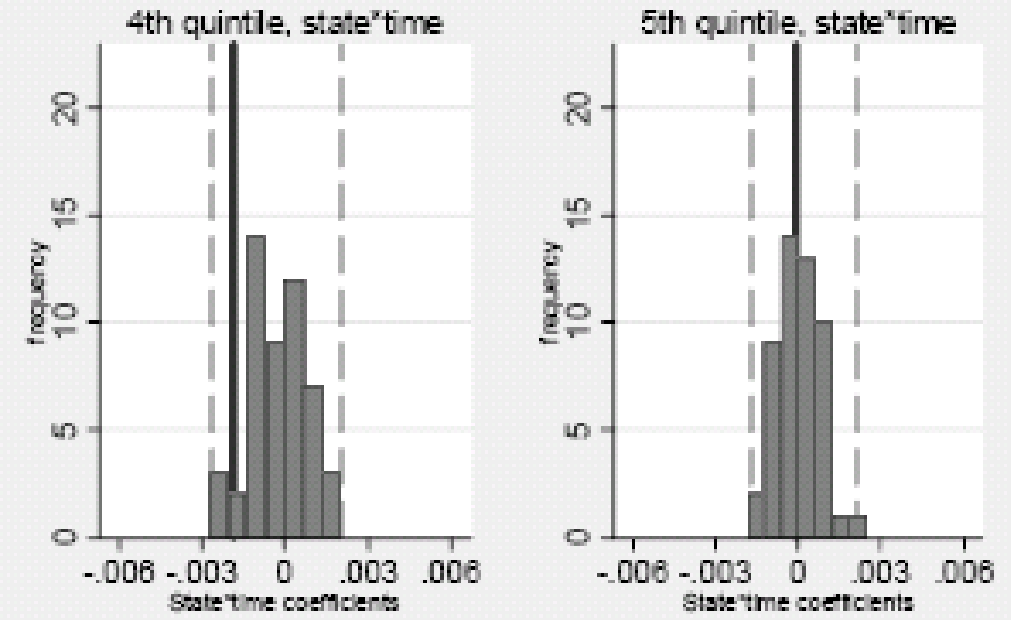
	Full Sample	1st ESI Quintile	5th ESI Quintile
State Dummy (Hawaii)	0.0789	0.1498	0.0162
Placebos: 2.5 Percentile	-0.0902	-0.1489	-0.0589
97.5 Percentile	0.0482	0.0927	0.0460
State x Trend (Hawaii)	-0.0006	-0.0012	-0.0001
Placebos: 2.5 Percentile	-0.0021	-0.0046	-0.0018
97.5 Percentile	0.0017	0.0024	0.0021

Pr(Employed): Distribution of State Effects, by ESI Quintiles



Pr(Employed): Distribution of State x Trend Effects, by ESI Quintiles





Conclusions: Coverage

- PHCA seems to have limited erosion of ESI coverage.
- Gap in overall coverage rate has been relatively constant at around 10-14% points since the early 1990s.
- Effect on ESI is not significantly offset by reductions in other sources of coverage. So workers in Hawaii are substantially less likely to be uninsured.
- But, coverage among workers is not universal.

Conclusions: Wages

- Workers in Hawaii had lower than average wage growth, but…
- Hawaii does not stand out relative to the full set of comparisons.
- Based on these results, we can't reject the null that wage trends in Hawaii are not different from trends in other states.

  (This does not necessarily mean that Hawaiian workers did not bear some of the cost of the insurance mandate.)

Conclusions: Part-Time Employment

- Some evidence of an increase in low hour work for less educated workers.

- No change (relative to other states) for more educated workers.

  $\Rightarrow$ ***Consistent with avoidance behavior by employers.***

- How big of an effect is this?
  - Over full 27 years, a 2 percentage point increase.
  - Large relative to the percentage of workers in low hour jobs.
  - Small relative to all workers.

Conclusions: Employment

- At the start of the period, workers in the lower ESI quintiles were more likely to be employed in Hawaii than in other states.

- We cannot reject the null hypothesis that the trend in the percent employed in Hawaii was no different than the trend in the rest of the U.S.

- Our interpretation: no clear employment effects of the PHCA.

Final Thoughts (Caveats)

- To the extent that results generalize, they are probably more relevant to national mandates rather than state-level policies.

- New requirements on employers in the health care reform bill are weak compared to the PHCA. Thus, any labor market effects of the law are likely to be even more muted.

- While we don't see any obvious evidence of adverse labor market consequences, that does not mean that an employer mandate is the best way to increase coverage.