“The Effect of an Employer Health Insurance Mandate on Health Insurance Coverage and the Demand for Labor: Evidence from Hawaii”

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*The views expressed in this paper are those of the authors and should not be attributed to the Federal Reserve Bank of San Francisco or the Federal Reserve System.
Goal: Assess the impact of Hawaii’s employer-sponsored insurance (ESI) mandate on ESI coverage, wages, employment (hours) (limited direct evidence on mandates)

*NOT* an ideal experiment
  But somebody had to do it (update and expand on limited set of earlier papers, simulations of mandate effects)

Outline of Talk
I. Mandate basics
II. Research Design
   A. Data (CPS March and MORG, 1979-2005)
   B. Identifying affected workers, mandate costs
   C. Proper inference (permutation tests)
III. Findings
    ESI coverage ↑↑ for those with low coverage probs. Employers offset costs by increasing reliance on exempt employees (cannot reject null of no wage or employment effects).
Hawaii’s Law (PPHCA)

Implemented in January 1975, followed by legal challenges, special ERISA exemption granted in 1983
Applies to all private sector employers; standard health benefits.

Exemptions:
Part-time employees (<20 hours)
New hires (<4 weeks), seasonal and commission only, low wage

Theoretical Effects of a Benefits Mandate

Labor demand and supply framework (no market failure):
\[ L_d = f_d(W+C), \quad L_s = f_s(W+\alpha C) \]

Effects of a mandate (assuming \( \alpha < 1 \); i.e., mandate is constraining):
(1) \( w \downarrow \) for workers whose employers are constrained
(2) employment \( \downarrow \) in covered “sectors”
(3) shift to PT (uncovered) employment
Data

**March CPS:** 1980-2006 (reference years 1979-2005)
  Use for coverage analysis, identification of affected workers

**CPS MORG:** 1979-2005
  Use for outcome analysis (wages, hours, employment)

**Samples:** age 18-64, private sector (not self) in current (MORG) or longest job in the previous year (March); dropped imputed wages/hours.

**Covariates:** education (5), a quartic in age, gender, married, age/gender and married/gender interactions, race/ethnicity (4), residence in an urban area, veteran status, industry (13), and occupation (11), plus nativity (3; 1994-) and firm size (5; March only, 1987-)

**Is Hawaii different? (Table 1)** Has more workers in personal services (hotels/tourism) and fewer in manufacturing, slightly more in small firms, more Asian/Pacific Islander and foreign born.
  Hawaii X’s imply lower coverage than typical state.
Q: Who is affected? (heterogeneous policy effects)

A: Individuals with low Pr(ESI) in a voluntary market

Fit the following LPM for ESI on individuals in states other than Hawaii (by year), where X includes all individual and job characteristics (ex. nativity, size):

\[ I_i = X_i \Gamma + \varepsilon_i \]  

(1)

Rank individuals (including Hawaiians) according to fitted \( I_i \), place into quintile groupings (similar results for education breakdown); similar to Card (1996).

“Prognostic score” in stats literature (Hansen 2008)
Figure 5f: ESI Coverage, 1979-2005, 5th quintile

Note: Authors' calculations using March CPS data.
Figure 5b: ESI Coverage, 1979-2005, 1st quintile

Note: Authors' calculations using March CPS data.
Other determinant of mandate effects: rising costs

Empirical estimates exploit coverage differences, increasing costs over time
Estimation and Inference I: ESI Effects (cross sections)

Regression equation with state effects:

\[ I_i = X_i \beta + \delta H_i + e_s + u_i \]  \hspace{1cm} (2)

Random effects and cluster approaches produce overly tight confidence bands:

(1) RE restrictions on \( e_s \) unlikely to hold
(2) Failure of clustering assumptions (focus on one small state)
Permutation (placebo) approach

Run 50 “placebo” regressions (in addition to Hawaii reg; all LPMs):

\[ I_i = X_i \beta + dP_{i(s)} + \eta_i, \]
\[ P_{i(s)} = 1 \text{ for state } s = 1, 2, 3, \ldots 50 \]

Inference is based on the percentile in the distribution of \( d \) where the coefficient for \( s = 51 \) (Hawaii) lies.

  e.g., Hawaii effect passes 2-sided test at 5% level if \( d \) lies outside the 2.5\(^{th}\) or 97.5\(^{th}\) percentile

Simulations: similar inference under “normal” conditions, more conservative (appropriate) under common alternatives (e.g., fat tails in the distribution of state effects)
Figure 6: Distribution of State Effects, Own ESI Coverage
by ESI quintile, 1979-82 & 2002-05 (conditional on demog., job controls)

Note: Estimated using March CPS data for 1979-82 and 2002-05. The thin dotted lines are the 2.5 and 97.5 percentile values (other than Hawaii), the thick solid line is the Hawaii value. Linear probability models; covariates include the complete set of demographic and job controls (see Tables 1-2). Quintiles formed as in Figure 5.
Estimation and Inference II: Wage/Hours/Emp (repeated cross sections)

\[ Y_{is} = X_{is} \lambda_1 + Z_s \lambda_2 + \gamma H_i + \rho T + \theta(H_i \cdot T) + \varphi_s + \eta_i \quad (3) \]

→ Yis refers to log wage (linear model), incidence of hours<20 (logit), employment (LPM); individual and state controls (ΔGDP, min. wage)

→ Focus is on change over time (small rise in point estimate of coverage gap, combined with rising cost of ESI), captured by \( \theta \)

→ As with ESI effects, inference based on position of Hawaii parameter in complete distribution of 50 placebo estimates for other states
Figure 7: Distribution of State Effects, Log(Wage)
by ESI quintile, 1979-2005

Note: Estimated using CPS MORG data for 1979-2005. The thin dotted lines are the 2.5 and 97.5 percentile values (other than Hawaii), the thick solid line is the Hawaii value. Covariates include the complete set of demographic controls (excluding nativity), ind/occ, plus annual real state min. wage and GDP growth. Quintiles formed as in Figure 5.
Figure 11: Distribution of State Effects, Pr(Employed) 
by ESI quintile, 1979-2005

Note: Estimated using CPS MORG data for 1979-2005. The thin dotted lines are the 2.5 and 97.5 percentile values (other than Hawaii), the thick solid line is the Hawaii value. Linear probability models; covariates include the complete set of demographic controls (excluding nativity), plus annual real state min. wage and GDP growth. Quintiles formed as in Figure 5.
Note: Estimated using CPS MORG data for 1979-2005. The thin dotted lines are the 2.5 and 97.5 percentile values (other than Hawaii), the thick solid line is the Hawaii value. Logit models; covariates include the complete set of demographic controls (excluding nativity), ind/occ, plus annual real state min. wage and GDP growth. Quintiles formed as in Figure 5.
Interpreting the Magnitudes

(1) Wage effect
   Costs of Hawaii’s mandate [(ΔESI gap)*(ΔESI cost)] in lower ESI quintiles implies small wage effect relative to cross-state variation in wage growth
   Hawaii’s mandate didn’t matter, or low power

(2) Employment effect
   Wage effect scaled down by employment elasticity; even less power

(3) Low hours (exempt); large? (coauthor disagreement)
   For the lowest ESI group:
   shift to low hours over time ≈ the estimated increase in relative ESI coverage over sample frame (6 % points).
Conclusions

(1) Hawaii’s mandate substantially increased ESI coverage for individuals with low coverage probabilities

(2) No evidence for adverse effects on wages and employment probabilities (wide state variation; low power)

(3) Increased incidence of low-hours (exempt) employment, substantial offset to ESI coverage effect for lowest ESI group

(4) Permutation testing appears to provide appropriate inference for some variants of cluster-type sampling (when the effect of interest is at the cluster level)