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The Economics
of "Pay or Play"
Employer Mandates

Employer Health Insurance Mandates and the Risk of Unemployment

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PRESENTED • SEPTEMBER 14, 2007 • WASHINGTON, DC

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Table of Contents

Introduction.....	1
Background.....	2
Data and Methods.....	4
Results.....	5
Workers at Risk.....	5
Benchmark Insurance Costs.....	8
The Role of the Minimum Wage.....	10
Potential Job Loss.....	14
Regional Variation.....	15
Discussion.....	16
References.....	17
Appendix Tables.....	19

Employer Health Insurance Mandates and the Risk of Unemployment

INTRODUCTION

Employer health insurance mandates form the basis of many health care reform proposals. Democratic Presidential candidates Hillary Clinton, John Edwards and Barack Obama have all proposed reforms that include pay-or-play mandates. Individual states are contemplating these mandates as well. In California, for example, the state legislature passed a law requiring employers above a certain size to provide a specified package of health benefits for their workers. California voters narrowly overturned the measure (“Proposition 72”) in 2004, but Governor Schwarzenegger recently unveiled a new plan to expand insurance coverage that requires employer contributions. Oregon and Washington enacted mandates that were later repealed. Hawaii implemented an employer mandate in 1974. The recent reform in Massachusetts, which combines an individual mandate, employer requirements, redirection of Medicaid funds, and the creation of a new insurance pooling mechanism, has garnered much attention and may spur similar reforms in other states.

The proponents of these measures make the case that they will increase insurance coverage while maintaining the role of the market in generating competition and efficiency in health insurance offerings. Opponents raise the concern that low-income workers will see offsetting reductions in their wages and that in the presence of minimum wage laws some of the lowest wage workers will become unemployed. Academics and the popular press alike cite increased health insurance costs as one of the causes of recent increases in unemployment (Porter, 2004). Estimates of the potential job loss from the mandates included in the failed Clinton health care proposal ranged from 600,000 to more than 2,000,000.

To determine how important the potential job loss from employer mandates is, we need to know how many workers are likely to be affected. Several factors affect the degree to which employer mandates will cause unemployment. First, what is the likely cost of the mandated health insurance? This clearly depends on the specifics of the mandated coverage.¹ Second, how much of an

¹ Yelowitz (“The Cost of California’s Health Insurance Act of 2003”, EPI, 2003), for example, shows that costs and benefits of California’s law depend crucially on the subsidy for low-income workers, the

increase in the cost of employing workers is borne by employees in the form of reduced wages? There is substantial evidence that the cost of health insurance mandates will be shifted to employees, resulting in lower wages.² Third, how many workers not currently covered by employer-sponsored insurance are so close to the minimum wage that their wages cannot be lowered enough to offset the cost of the new mandate? We focus on the last question. This paper provides an estimate of how big the pool of workers at risk of unemployment is likely to be and what characteristics they are likely to have, taking into account minimum wage laws and patterns of employer health insurance offering and coverage.

We construct an estimate of the number of workers whose wages are so low that they cannot be lowered to absorb the cost of health insurance, using detailed data on wages, health insurance, and demographics from the Current Population Survey. We characterize the population of workers at risk in terms of their socio-demographic characteristics (age, race, gender, education, family structure), and industry of employment. We find that 33 percent of uninsured workers earn within \$3 of the minimum wage, putting them at substantial risk of unemployment if their employers were required to offer insurance. These workers are disproportionately likely to be high school

generosity of the plan required to fulfill the “play-or-pay” requirements, etc. See also Zedlewski et al, “Play-or-Pay Employer Mandates: Potential Effects”, *Health Affairs*, Spring 2002; and Krueger and Reinhardt, “The Economics of Employer Versus Individual Mandates”, *Health Affairs*, Spring 1994.

² See, for example, Jonathan Gruber and Alan Krueger, “The Incidence of Mandated Employer-Provided Insurance: Lessons from Workers’ Compensation Insurance,” *Tax Policy and the Economy*, 1991; and Norman Thurston, “Labor Market Effects of Hawaii’s Mandatory Employer-Provided Health Insurance,” *Industrial and Labor Relations Review*, October, 1997.

dropouts or racial minorities. Understanding which workers these laws are likely to affect should play an important role in the assessment of the effect of employer mandates on the level and distribution of employment and insurance coverage.

BACKGROUND

The estimated impact of an employer health insurance mandate on insurance coverage and employment depends on two sets of factors: (1) the specifics of the mandate and (2) what one assumes about the dynamics of wages, fringe benefits, and employment.

Specific mandate proposals vary widely from state to state.³ Most include exemptions for smaller firms (e.g. those with fewer than 20 employees in California) and for employees with few hours (e.g. fewer than 20 hours per week in Hawaii or 100 hours per month in California). Most include minimum employer contributions (such as 80 percent of premiums in California or 75 percent for employees in Oregon) and minimum coverage requirements (benchmarked to other plans offered in the state in Hawaii; including prescription drugs and preventive care in California). Three of these features are likely to be particularly important for the analysis of any particular mandate. First, which employers and employees are affected? Any exemptions, such as those for small firms or part-time workers, will dilute both the positive and negative effects of a mandate. Second, what is the marginal cost of the newly mandated benefits, both in terms of specific benefits and in terms of lost flexibility for employers? A mandate can specify a generous benefits package that all employers must provide (thus increasing costs for some employers already providing

³ Yelowitz (2004) illustrates the importance of understanding the specifics of California’s proposed mandate in order to estimate the proposal’s cost.

insurance) or it can require minimal coverage that affects only employers who do not already provide insurance. Third, what fraction of these costs must nominally be borne by the employer? When nominal wage rigidities prevent accommodation of increased costs through reduced wages, the statutory incidence may have a substantial effect. Policies that require firms to offer insurance but not pay for it would likely have little effect on rates of coverage because uninsured workers do not appear to be very responsive to the availability of benefits unless they are very heavily subsidized (Chernew, Frick and McLaughlin, 1997; for a review of the recent literature on price elasticities of demand for health insurance among uninsured workers, see Gruber and Washington, 2003).⁴

The second set of issues – what assumptions one maintains about the dynamics of wages, fringe benefits, and employment – comes into play when a significant share of the cost of the newly mandated health benefits falls on employers. There is a consensus among most economists that these costs, like the cost of any fringe benefit that workers value, will be passed on to workers in the form of reduced wages whenever possible (see Gruber and Krueger, 1991; Gruber, 1994; Fishback and Kantor, 1995; Olson, 2002). The implication of this is that when an insurance mandate accomplishes its stated goal of extending coverage to a previously uninsured worker, that worker will also experience a reduction in her wage or the growth of her wage relative to what would have happened otherwise. In the best-case scenario, the worker's wage will

be sufficiently high to absorb the entire cost of the benefit, and the mandate will have changed the composition of compensation (less wages, more benefits) but not the total value of compensation.

The problem arises when the worker's wage is not high enough to absorb this cost without bumping into the minimum wage. When this is the case, the insurance mandate has the same effect on employment as an increase in the minimum wage. Suppose, for example, that an uninsured worker earning the minimum wage becomes subject to an insurance mandate that requires the employer to provide benefits that cost \$1 per hour worked. Since there is no scope to reduce wages, the hourly cost of employing the worker is now the minimum wage plus \$1. Economists have long believed that this is likely to result in lower employment, as employers substitute machines for workers when workers become more expensive. The size of this "elasticity" of employment with respect to the minimum wage has been the subject of considerable recent controversy: there is little consensus on the magnitude of the unemployment effect associated with an increase in the minimum wage (see Brown, 1999, for a review). Regardless of one's beliefs about the employment effect of minimum wage increases, however, the employment effect of an employer health insurance mandate that increases employer costs ought to be the same as the effect of a change in the minimum wage. In the analysis that follows, we present estimates of the population at risk of being affected by the imposition of employer mandates, to which different estimates of the elasticity of employment with respect to changes in the minimum wage can be applied. Our analysis shows how many uninsured workers are within different ranges of the minimum wage (such as within \$3), so that readers can consider mandates that impose different

⁴ If workers are required to take up the insurance, the degree to which workers value the benefits and the elasticity of labor supply and demand would determine the ultimate effect on wages (and the "incidence" of the mandate) – as discussed below. See Summers (1989) for a discussion of how worker valuation affects the incidence of mandated benefits.

levels of cost on employers and a range of estimates of the effect of changes in the minimum wage on employment.

DATA AND METHODS

The primary data for analysis come from the Current Population Survey (CPS), conducted annually by the Bureau of the Census. The CPS collects information from about 50,000 households each month about household composition, socio-demographic characteristics, earnings, and employment in eight different monthly surveys over the course of sixteen months. Each month's survey provides detailed demographic data such as age, race, education, marital status, and family composition of respondents. The March survey in each year also collects information about health insurance coverage. We combine these variables with information provided by respondents about their labor force status, whether or not they are paid hourly, usual hours worked, and wages in an exit ("outgoing rotation") interview.⁵ We use data from 2000 to 2006, the most recent CPS survey available. We restrict our sample to respondents age 22 to 65.

To this data we add information on the minimum wage, which varies by state and over time (see Nelson, Nelson and Fitzpatrick,

⁵ We are able to match just over 70 percent of March respondents to their corresponding exit ("outgoing rotation") interview. Reasons for failing to find a respondents across months include household mobility, nonresponses, and noise in the identifiers. There is also a known decline in match quality following the expansion of the CPS sample size in 2002 (driven in part by the way that household identifiers were assigned to the new sample). We use the standard household and person identifiers to match across months, and then screen for match quality using respondent demographics (such as age and gender), based on methodology outlined in Madrian and Lefgren (2000). About 5.1% of observed "matches" appear to be false, and these observations are dropped.

and Fitzpatrick, various years, for details of state law changes, also shown in Appendix Table A1). While the federal minimum wage was \$5.15 throughout our study period, several states enacted minimum wages that were higher than the federal minimum, so workers and employers in these states faced a higher minimum wage. We then compare workers' wages to the minimum wage in effect in January in their state and year (which corresponds best with the period from which respondents in the CPS report their wages).

We also use information on health insurance premiums by state, year, and policy type (family or single) collected by the Medical Expenditure Panel Survey for 1999 to 2005. We merge this data with the individual observations from the CPS for those years (using the previous year's survey to most closely match the timing of the CPS questionnaire) to impute a health insurance premium for each observation, attributing family policy premiums to those with a spouse or children and single policy premiums to those without.⁶ We deflate all dollar amounts to year 2006 dollars using the CPI.

Together, these data allow us to estimate both the likely effect of different employer mandates on wages and employment, as well as the distributional implications for workers with different characteristics. In the analysis that follows, we aggregate data from the CPS across years, and report workers' insurance status, wages relative to the minimum wage, and various demographic characteristics such as age, race, marital status, and education. We use the weights provided in the CPS so that the

⁶ The health insurance questions in the March CPS refer to coverage in the previous calendar year. Swartz (1986) presents evidence that people actually respond to these questions as if they were reporting their coverage at the time of the survey.

numbers and proportions we report are representative of the full-time private sector

workforce as a whole. See the Appendix Tables that follow for more detail.

Table 1: Insurance Status of Full-Time Private Sector Workers
(Fraction of all full-time private sector workers shown)

	Total
Health insurance status	
Own employer health insurance	0.660
Other health insurance	0.187
Uninsured	0.152
Total	1.000

RESULTS

We use these data to estimate which workers would be at risk of unemployment with the imposition of employer mandates. We present data on the health insurance and wage distribution of all workers, as well as different demographic subgroups, focusing in particular on workers with wages close to the minimum wage since it is these workers whose wages may have the least flexibility to be lowered in response to mandates that make employing them more costly, and thus may be most likely to face adverse employment consequences.⁷ We focus our analysis on workers employed more than 20 hours per week, as those with fewer hours are likely to be exempt from employer mandates.⁸ Much more detailed data are shown in the Appendix Tables that follow.

⁷ While hourly workers may be more susceptible to binding minimum wages than salaried workers, minimum wage laws apply to almost all salaried workers as well. We impute an hourly wage for those workers on salary using the usual hours worked per week and weekly wages from the CPS. Workers paid hourly are much more likely to be close to the minimum wage than those paid on salary, but we include both in our analysis.

⁸ Many proposed mandates only apply to full-time workers. Employers might thus have the incentive to substitute away from full-time employees towards part-time employees. We ignore these dynamics. We are also implicitly assuming here that wages adjust

Workers at Risk

More than 15 percent of private sector workers employed more than 20 hours a week (whom we call “full time”) are currently uninsured. Note that our estimate of uninsured workers includes those who decline insurance offered to them by their employers, but does not include workers who get insurance from a source other than their own employer.⁹

Who are these uninsured workers? They are more than three times as likely to be high-school drop-outs as insured workers, and twice as likely to be from a minority racial or ethnic group. They are 50 percent more likely to be under age 35 and to be unmar-

independently of whether workers would have taken up insurance or not – insofar as there is no mechanism for employers to know ahead of time (when offering a wage and insurance package) whether a worker is going to take up that coverage or not.

⁹ Implicitly, we are assuming that the wages of workers who turned down have not already adjusted downward by the cost of the insurance that they declined. Analysis of the February Contingent Work Supplements to the Current Population Survey in 1995, 1997, 1999, 2001 and 2005 shows that about one-quarter of uninsured workers were offered insurance. We also assume that workers with coverage from another source, which is typically a spouse’s employer-sponsored policy, would not be affected by mandates.

ried. They are almost twice as likely to be single parents.

Table 2: Demographics of Insured and Uninsured Workers
(Fraction of full-time private sector workers in each column falling into category)

	All	Insured	Uninsured
High-school dropout	0.11	0.08	0.27
Racial/ethnic minority	0.30	0.26	0.52
Under age 35	0.34	0.31	0.50
Unmarried	0.38	0.34	0.57
Single parents	0.07	0.06	0.11

Uninsured workers are thus demographically quite different from insured workers. Several of these characteristics make them economically vulnerable – and also make them the target population for policies intended to expand health insurance coverage.

Many of the employer mandates being considered by different states exempt small firms. More than 55 percent of all uninsured

workers are employed in firms with more than 25 employees (compared to more 80 percent of insured workers) – which means that they would be covered by many proposed mandates.¹⁰ Of course, mandates that cover only firms above this size would have commensurately smaller effects both on insurance coverage and on the risk of decreasing employment than proposals without such limitations.

Table 3: Establishment Size and Insurance Status
(Fraction of full-time private sector workers in each column falling into category)

	All	Insured	Uninsured
Establishment size:			
1-9	0.13	0.10	0.27
10-24	0.11	0.09	0.17
25-99	0.15	0.15	0.17
100-499	0.16	0.17	0.12
500-999	0.06	0.07	0.04
1,000+	0.39	0.42	0.23
Total	1.00	1.00	1.00

¹⁰ It is not clear how accurate employees’ reports of their establishment size are.

Benchmark Insurance Costs

How likely these uninsured workers are to face unemployment depends on whether the minimum wage is binding – that is, if the hourly cost per worker of newly mandated health insurance is greater than the gap between the worker’s wage and the minimum wage. While a more detailed calculation requires knowledge of (or assumptions about) workers’ family structure, health status, the elasticity of labor supply and demand, workers’ valuation of health insurance benefits, long-run labor market dynamics (such as substitution towards part-time employees) and the like, we calculate several informative back-of-the-envelope benchmarks using aggregate insurance costs. The average annual premium for employer-sponsored health insurance in our data was approximately \$9,046 for family coverage and \$3,429 for single coverage (for the period 2000-2006, expressed in 2006 dollars), for an average hourly pre-

mium of \$3.66 for a full-time worker.¹¹ If employers were required to pay 80% of premiums, the average hourly wage for this group of workers would thus have to decrease by about \$3 to absorb fully the cost of providing the average health insurance package. Here, clearly, the costs would be different if the mandated insurance coverage were more or less generous than the typical plan already provided to most workers or if workers were required to pay more of the premium directly.

We also calculate a more sophisticated benchmark based on the insurance cost facing individual workers, rather than a broad average. We impute the insurance cost for each worker based on state of residence, year, and family structure, divide that number by 2,000 to generate an average hourly cost of insurance, and compare the difference between hourly wages and the minimum wage to that hourly insurance cost.

Table 4: Health Insurance Premiums

	Mean	Median	Min.	Max.
Average annual premiums				
Single coverage	\$3,429	\$3,480	\$2,407	\$5,088
Family coverage	\$9,046	\$9,182	\$6,078	\$12,121
Average hourly premium (overall)	\$3.66	\$4.01	\$1.20	\$6.06

¹¹ These data are consistent with other survey results on insurance costs, suggesting that our algorithm for assigning premiums in our sample is representative. For example, the Kaiser/HRET survey reported average employer premiums in 2006 of \$11,500 for family policies and \$4,200 for single policies, while in our CPS/MEPS sample the average premium in 2006 was \$10,700 for family policies and 4,000 for single policies.

The Role of the Minimum Wage

A large fraction of uninsured workers earn little more than the minimum wage. Insurance costs potentially represent an enormous increase in the minimum compensation for this group of workers. The federal minimum wage is \$5.15, and the average minimum wage in our sample (taking into account state minimums that are sometimes higher) is \$5.98 – so the benchmark cost of \$3 represents 50 percent of the effective minimum wage.¹² There is clearly a great deal of disagreement about the effect of

minimum wages on employment, but even under relatively conservative elasticity estimates this could result in significant effects on minimum wage workers.

Uninsured workers earning within \$3 of the minimum wage represent 5 percent of the workforce, and a third of all uninsured workers. (Using the more sophisticated benchmark based on individual insurance costs yields answers very similar to the \$3 benchmark, both of which are reported in the Appendix Tables.)

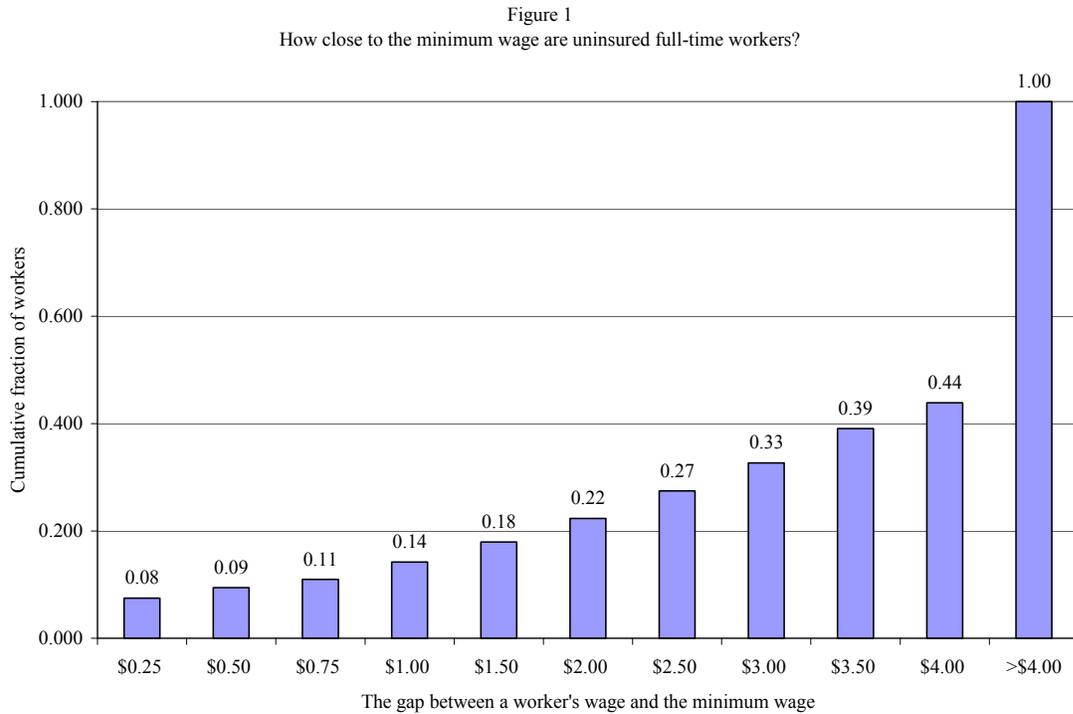
Table 5: Insurance Status and Wages for Full-Time Private Sector Workers

Fraction of workers with:	
Own employer health insurance	0.66
Other health insurance	0.19
No insurance and wages:	
Within \$1 minimum wage	0.02
Within \$1.01 - \$2 of minimum wage	0.01
Within \$2.01 - \$3 of minimum wage	0.02
More than \$3 above minimum wage	0.10

¹²On average, wages represent about 70 percent of compensation in the private sector, with health insurance costs accounting for an additional 7 percent, other voluntary fringe benefits accounting for 14 percent, and legally required benefits (such as Social Security) accounting for the remaining 9 percent (Department of Labor 2007). In theory, then, employers might respond to insurance mandates by reducing other fringe benefits. Low-wage workers are less likely than the typical worker to have these other benefits, however (Schwabisch 2004), so it is unclear in practice how much of a buffer other benefits provide.

Figure 1 shows a more detailed distribution of the hourly wages of uninsured

workers relative to the minimum wage.



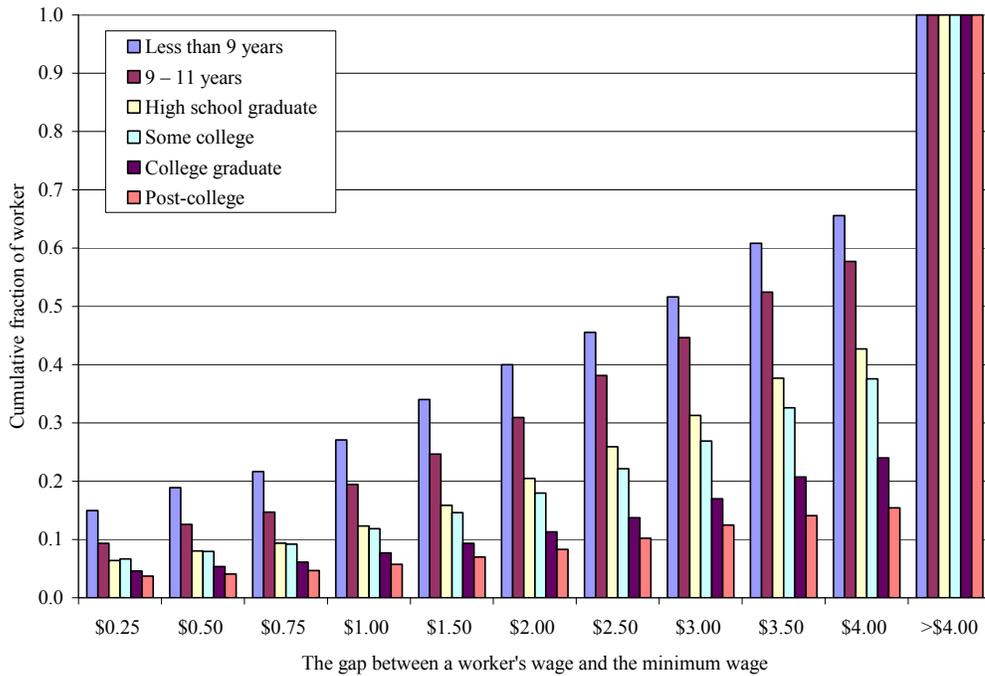
Thus, while the overall fraction of private sector workers who are “at risk” is moderate, since only 5 percent of all workers are uninsured workers earning within \$3 of the minimum wage, a potentially very large fraction of the group supposedly targeted for help by employer mandates might in fact be hurt, since 33 percent of uninsured workers earn within \$3 of the minimum wage. Of the roughly 114 million U.S. private sector workers, 105 million of whom work more

than 20 hours per week, 16 million are uninsured, and more than 5 million of those earn within \$3 of the minimum wage.¹³

As Table 2 suggested, low-skilled workers are more likely to be uninsured. Figure 2 shows this wage distribution for workers with different levels of education. Workers with less than a high school degree are significantly more likely to have earnings close to the minimum wage.

¹³ Bureau of Labor Statistics series CES0500000001 (total private employment) is 113,753,000 in March 2006 and about 114 million in other months of 2006 also.

Figure 2
Wages of uninsured full-time workers by education



Thus, among the uninsured, those with the least education face the highest risk of losing their jobs under employer mandates. The same is true for nonwhites, those under age 35, single parents, and women (see Appendix Table A4).

Potential Job Loss

How many of those workers are likely to lose their jobs? We calculate an approximate answer to this question in the following way. First, we compare the individual-specific hourly insurance costs described above to the cushion between an uninsured worker’s wage and the minimum wage. If a worker’s wage is sufficiently high that it can adjust downward by the full cost of insurance without hitting the minimum wage, we assume this worker is not at risk of losing her job. If, however, the minimum wage constraint binds, we calculate the percentage increase in total compensation implied by the health insurance mandate. For exam-

ple, if a worker earning \$6 per hour is mandated to have health insurance costing the firm \$2 per hour, we assume that her wage will adjust downward by 85 cents to the minimum wage of \$5.15. However, the remaining \$1.15 of the cost of the mandate cannot be absorbed by reducing wages and increases her total compensation to \$7.15 – an increase in compensation of almost 20 percent ($\$1.15/\$6.00 = 0.19$). Assuming an employment elasticity with respect to the minimum wage of -0.1, meaning that a ten percent increase in the minimum wage would lead to a one percent reduction in employment, this worker has a two percent chance of losing her job.¹⁴ Performing a similar calculation for all the workers in our sample suggests that about 224,000 workers would lose jobs as a result of a mandate with these costs. More than 60 percent of

¹⁴ This is a relatively conservative estimate of the sensitivity of employment to minimum wage laws. See Brown (1999) for a review of the wider range of estimates of this elasticity.

these workers would be racial or ethnic minorities and about one-third would have less than a high school education. The burden of the mandate would thus fall disproportionately

on these groups since, for example, racial and ethnic minorities are only 30 percent of the workforce in this sample.

Table 6: Number of Workers at Risk of Losing Employment

Total private sector workers (2006; from BLS)	114 million
Fraction of those workers who work full-time (more than 20 hours per week) (author calculations)	91.4%
Total full-time private sector workers	104.2 million
Fraction of those who are uninsured	15.2%
Fraction “at risk” (uninsured and earning wages less than the minimum wage plus the cost of health insurance)	5.3%
Workers at risk of losing employment	5.5 million
Average increase in compensation for uninsured “at risk” workers	40.6%
Workers likely to become unemployed assuming elasticity = -0.1	224,284
Racial and ethnic minorities	136,342
Workers with less education than high school degree	87,403

To the extent that mandates impose additional costs on firms (such as reduced flexibility or more generous coverage than they were already offering), these figures represent a lower bound on the increase in unemployment likely to result from such mandates. As noted above, if mandates apply only to some workers this will dilute both the positive and negative effects of a mandate. For example, establishments with fewer than 25 workers employ 44 percent of uninsured workers (Table 3); if these small employers were exempted from a mandate,

our estimate of job loss would drop to about 45 percent of the number above.

Regional Variation

These results are not confined to any particular area of the country. As Appendix Table 7 shows, the Northeast, Midwest, South, and West have very similar fractions of workers at risk for unemployment. However, looking at individual states shows that there is local variation in this at-risk pool (although sample size limits our ability to compare individual states).

Table 7: Workers at Risk by State

	CA	MA	OR	WA	US Avg
Total	1.000	1.000	1.000	1.000	1.000
Own employer health insurance	0.629	0.669	0.687	0.701	0.660
Other health insurance	0.176	0.233	0.162	0.152	0.187
Unins., within \$1 min	0.052	0.012	0.045	0.040	0.022
Unins., \$1-2 of min wage	0.022	0.009	0.020	0.017	0.012
Unins., \$2-3 of min wage	0.018	0.006	0.017	0.014	0.016
Unins., \$3+ min wage	0.104	0.071	0.070	0.077	0.103

DISCUSSION

Understanding the labor market consequences of employer mandates is a key component in evaluating their effectiveness relative to other policies such as tax credits, Medicaid expansions, and individual mandates. Several studies have analyzed the effect of different versions of employer mandates on insurance premiums and on workers' wages. This study contributes an important missing piece to the analysis: how large is the potential risk of unemployment? Our analysis suggests that one third of the tar-

geted population of uninsured workers have hourly wages close enough to the minimum wage that employers will not be able to lower their wages enough to accommodate fully the increase in compensation costs that employer mandates would impose. These workers, who tend to be disproportionately low-education, minority, and female, thus face a risk of unemployment. This risk of unemployment should be a crucial component in the evaluation of both the effectiveness of these policies in reducing the number of uninsured and their broader effects on the well-being of low-wage workers.

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APPENDIX TABLES

Table A1
State Minimum Wage Laws in Effect by Year (in January)

State	2006	2005	2004	2003	2002	2001	2000
AL	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
AK	\$7.15	\$7.15	\$7.15	\$7.15	\$5.65	\$5.65	\$5.65
AZ	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
AR	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
CA	\$6.75	\$6.75	\$6.75	\$6.75	\$6.75	\$6.25	\$5.75
CO	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
CT	\$7.40	\$7.10	\$7.10	\$6.90	\$6.70	\$6.40	\$5.65
DE	\$6.15	\$6.15	\$6.15	\$6.15	\$6.15	\$6.15	\$5.65
DC	\$7.00	\$6.60	\$6.15	\$6.15	\$6.15	\$6.15	\$6.15
FL	\$6.40	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
GA	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
HI	\$6.75	\$6.25	\$6.25	\$6.25	\$5.75	\$5.25	\$5.25
ID	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
IL	\$6.50	\$6.50	\$5.40	\$5.15	\$5.15	\$5.15	\$5.15
IN	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
IA	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
KS	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
KY	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
LA	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
ME	\$6.35	\$6.35	\$6.25	\$6.25	\$5.75	\$5.15	\$5.15
MD	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
MA	\$6.75	\$6.75	\$6.75	\$6.75	\$6.75	\$6.75	\$6.00
MI	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
MN	\$6.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
MS	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
MO	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
MT	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
NE	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
NV	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
NH	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
NJ	\$6.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
NM	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
NY	\$6.00	\$6.00	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
NC	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
ND	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
OH	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
OK	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
OR	\$7.50	\$7.25	\$7.05	\$6.90	\$6.50	\$6.50	\$6.50
PA	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
RI	\$6.75	\$6.75	\$6.15	\$6.15	\$6.15	\$6.15	\$5.65
SC	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
SD	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
TN	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
TX	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
UT	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
VT	\$7.25	\$7.00	\$6.75	\$6.25	\$6.25	\$6.25	\$5.75
VA	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
WA	\$7.35	\$7.35	\$7.16	\$7.01	\$6.90	\$6.72	\$6.50
WV	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
WI	\$5.70	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
WY	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
Federal	\$5.15						

Table A2

Demographic and employment characteristics for full-time private sector workers with and without insurance (each entry represents fraction of total full-time private sector workforce)

	All	Insured	Unins.
Age:			
22 – 24	0.071	0.058	0.145
25 – 34	0.271	0.255	0.359
35 – 44	0.294	0.300	0.261
45 – 54	0.248	0.263	0.164
55 – 64	0.116	0.124	0.071
Family structure:			
Single male, no kids	0.171	0.148	0.300
Married male, no kids	0.151	0.159	0.107
Single male, kids	0.016	0.014	0.026
Married male, kids	0.218	0.226	0.176
Single female, no kids	0.136	0.131	0.161
Married female, no kids	0.125	0.133	0.077
Single female, kids	0.055	0.051	0.079
Married female, kids	0.128	0.138	0.074
Education:			
Less than 9 years	0.024	0.013	0.085
9 – 11 years	0.081	0.062	0.186
High school graduate	0.325	0.316	0.379
Some college	0.291	0.301	0.232
College graduate	0.201	0.220	0.098
Post-college	0.078	0.088	0.021
Race:			
White non-Hispanic	0.702	0.741	0.482
Black non-Hispanic	0.104	0.099	0.132
Hispanic (any race)	0.136	0.102	0.325
Other non-Hispanic	0.058	0.057	0.061
Establishment size:			
1 – 9	0.129	0.104	0.271
10 – 24	0.106	0.094	0.173
25 – 99	0.154	0.151	0.167
100 – 499	0.160	0.166	0.121
500 – 999	0.062	0.066	0.040
1,000+	0.389	0.418	0.228
Industry			
Agriculture, mining, construction	0.088	0.074	0.170
Manufacturing	0.196	0.208	0.129
Trade	0.183	0.177	0.216
Transportation, communications, utilities	0.067	0.070	0.053
Financial services, insurance, real estate	0.084	0.091	0.042
Services	0.382	0.381	0.391
Unweighted sample size	235,020	202,024	32,996

Table A3

Distribution of all full-time private sector workers
by insurance coverage and wage relative to minimum if uninsured

	Fraction of workers with			No insurance; by proximity to minimum wage:			
	Own employer health insurance	Other health insurance	No insurance	≤\$1	\$1.01 - \$2	\$2.01 - \$3	>\$3
Total	0.660	0.187	0.153	0.022	0.012	0.016	0.103
Age:							
22 – 24	0.466	0.223	0.311	0.057	0.031	0.043	0.179
25 – 34	0.633	0.165	0.202	0.029	0.016	0.021	0.136
35 – 44	0.670	0.195	0.135	0.017	0.010	0.013	0.095
45 – 54	0.702	0.197	0.101	0.013	0.008	0.010	0.070
55 – 64	0.729	0.177	0.094	0.013	0.008	0.009	0.064
Family structure:							
Single male, no kids	0.651	0.083	0.267	0.033	0.019	0.026	0.188
Married male, no kids	0.735	0.157	0.108	0.011	0.006	0.009	0.081
Single male, kids	0.668	0.081	0.251	0.023	0.015	0.025	0.188
Married male, kids	0.706	0.171	0.123	0.013	0.008	0.010	0.092
Single female, no kids	0.725	0.094	0.181	0.035	0.018	0.022	0.106
Married female, no kids	0.599	0.306	0.094	0.013	0.009	0.011	0.062
Single female, kids	0.622	0.159	0.219	0.043	0.024	0.030	0.123
Married female, kids	0.513	0.400	0.088	0.019	0.010	0.010	0.049
Education:							
Less than 9 years	0.326	0.141	0.534	0.145	0.069	0.062	0.258
9 – 11 years	0.473	0.176	0.350	0.068	0.040	0.048	0.194
High school graduate	0.630	0.193	0.178	0.022	0.015	0.019	0.122
Some college	0.675	0.203	0.122	0.014	0.007	0.011	0.089
College graduate	0.749	0.177	0.074	0.006	0.003	0.004	0.061
Post-college	0.801	0.158	0.041	0.002	0.001	0.002	0.036
Race:							
White non-Hispanic	0.698	0.198	0.105	0.012	0.007	0.009	0.078
Black non-Hispanic	0.645	0.162	0.193	0.023	0.016	0.025	0.130
Hispanic (any race)	0.646	0.192	0.161	0.025	0.014	0.013	0.110
Other non-Hispanic	0.485	0.152	0.364	0.072	0.040	0.044	0.208
Establishment size:							
1 – 9	0.360	0.320	0.320	0.049	0.025	0.029	0.217
10 – 24	0.499	0.252	0.249	0.035	0.019	0.026	0.168
25 – 99	0.635	0.199	0.166	0.024	0.014	0.018	0.110
100 – 499	0.722	0.163	0.115	0.016	0.008	0.013	0.079
500 – 999	0.755	0.147	0.097	0.012	0.008	0.010	0.068
1,000+	0.773	0.138	0.089	0.012	0.009	0.010	0.059

(Continued)	Own employer health insurance	Other health insurance	Uninsured	Uninsured; proximity to minimum wage:			
				≤\$1	\$1.01 - \$2	\$2.01 - \$3	>\$3
Industry							
Agriculture, mining, construction	0.537	0.170	0.293	0.027	0.015	0.021	0.230
Manufacturing	0.780	0.120	0.101	0.011	0.008	0.011	0.070
Trade	0.612	0.208	0.180	0.033	0.019	0.021	0.107
Transportation, communications, utilities	0.744	0.136	0.121	0.009	0.006	0.010	0.097
Financial services, insurance, real estate	0.730	0.195	0.076	0.005	0.003	0.006	0.061
Services	0.621	0.224	0.156	0.027	0.014	0.018	0.098
Unweighted sample size	156,269	45,755	32,996	4,488	2,605	3,410	22,493

Table A4

Cumulative fraction of uninsured full-time private sector workers within a certain amount of minimum wage

	Gap between worker's wage and the minimum wage										
	\$0.25	\$0.5	\$0.75	\$1.00	\$1.50	\$2.00	\$2.50	\$3.00	\$3.50	\$4.00	>\$4.00
Total	0.075	0.095	0.110	0.142	0.180	0.224	0.275	0.327	0.391	0.439	1.000
Age:											
22 – 24	0.096	0.123	0.141	0.184	0.230	0.283	0.349	0.422	0.509	0.564	1.000
25 – 34	0.077	0.096	0.112	0.143	0.180	0.224	0.276	0.325	0.389	0.439	1.000
35 – 44	0.067	0.083	0.097	0.127	0.159	0.200	0.248	0.295	0.354	0.395	1.000
45 – 54	0.064	0.079	0.094	0.126	0.165	0.207	0.251	0.302	0.358	0.402	1.000
55 – 64	0.079	0.104	0.115	0.143	0.185	0.227	0.272	0.318	0.375	0.425	1.000
Family structure:											
Single male, no kids	0.067	0.085	0.098	0.125	0.157	0.196	0.243	0.295	0.361	0.411	1.000
Married male, no kids	0.058	0.072	0.083	0.105	0.133	0.165	0.205	0.248	0.303	0.343	1.000
Single male, kids	0.039	0.053	0.062	0.092	0.122	0.151	0.205	0.251	0.302	0.358	1.000
Married male, kids	0.044	0.066	0.078	0.105	0.139	0.172	0.212	0.253	0.315	0.356	1.000
Single female, no kids	0.111	0.133	0.153	0.193	0.238	0.294	0.355	0.414	0.479	0.527	1.000
Married female, no kids	0.072	0.085	0.101	0.135	0.177	0.229	0.284	0.346	0.405	0.460	1.000
Single female, kids	0.108	0.132	0.153	0.194	0.239	0.302	0.372	0.440	0.516	0.575	1.000
Married female, kids	0.107	0.134	0.156	0.213	0.267	0.326	0.389	0.444	0.513	0.555	1.000
Education:											
Less than 9 years	0.150	0.189	0.217	0.271	0.340	0.400	0.455	0.516	0.608	0.656	1.000
9 – 11 years	0.093	0.126	0.147	0.195	0.247	0.310	0.381	0.446	0.525	0.577	1.000
High school graduate	0.064	0.080	0.094	0.123	0.159	0.205	0.259	0.313	0.377	0.427	1.000
Some college	0.067	0.080	0.092	0.119	0.146	0.180	0.222	0.269	0.326	0.376	1.000
College graduate	0.046	0.054	0.061	0.077	0.094	0.113	0.137	0.170	0.207	0.240	1.000
Post-college	0.037	0.041	0.047	0.057	0.070	0.083	0.102	0.125	0.141	0.154	1.000

(Continued)

Within \$X of minimum:	\$0.25	\$0.5	\$0.75	\$1.00	\$1.50	\$2.00	\$2.50	\$3.00	\$3.50	\$4.00	>\$4.00
Race:											
White non-Hispanic	0.061	0.072	0.084	0.110	0.136	0.171	0.216	0.259	0.313	0.358	1.000
Black non-Hispanic	0.054	0.067	0.079	0.116	0.151	0.200	0.264	0.327	0.401	0.458	1.000
Hispanic (any race)	0.085	0.106	0.124	0.154	0.196	0.239	0.272	0.319	0.369	0.409	1.000
Other non-Hispanic	0.102	0.137	0.158	0.199	0.253	0.308	0.366	0.429	0.506	0.557	1.000
Establishment size:											
1 – 9	0.090	0.108	0.123	0.153	0.187	0.230	0.274	0.321	0.377	0.425	1.000
10 – 24	0.075	0.094	0.107	0.141	0.175	0.217	0.267	0.323	0.391	0.441	1.000
25 – 99	0.073	0.094	0.111	0.144	0.186	0.228	0.280	0.335	0.402	0.450	1.000
100 – 499	0.063	0.089	0.106	0.139	0.172	0.206	0.262	0.315	0.381	0.428	1.000
500 – 999	0.069	0.082	0.093	0.119	0.155	0.204	0.250	0.306	0.383	0.441	1.000
1,000+	0.066	0.084	0.100	0.134	0.177	0.230	0.288	0.341	0.405	0.451	1.000
Industry											
Agriculture, mining, construction	0.045	0.060	0.070	0.094	0.116	0.144	0.176	0.216	0.277	0.320	1.000
Manufacturing	0.050	0.072	0.088	0.111	0.148	0.194	0.247	0.302	0.370	0.418	1.000
Trade	0.093	0.119	0.141	0.181	0.232	0.287	0.347	0.406	0.473	0.525	1.000
Transportation, communications, utilities	0.036	0.045	0.053	0.071	0.095	0.120	0.155	0.200	0.234	0.274	1.000
Financial services, insurance, real estate	0.040	0.041	0.048	0.065	0.078	0.109	0.147	0.195	0.233	0.275	1.000
Services	0.096	0.116	0.131	0.170	0.211	0.259	0.317	0.371	0.440	0.489	1.000

Table A5

The fraction of full-time private sector workers who are at risk, based on wages and demographics

Proximity to minimum wage to qualify as “at risk” for an uninsured worker:	All workers				Uninsured workers			
	\$1	\$2	\$3	Individual-specific cost	\$1	\$2	\$3	Individual-specific cost
Total	0.022	0.034	0.05	0.053	0.142	0.223	0.327	0.348
Age:								
22 – 24	0.057	0.088	0.131	0.112	0.184	0.283	0.422	0.36
25 – 34	0.029	0.045	0.066	0.072	0.143	0.224	0.325	0.355
35 – 44	0.017	0.027	0.04	0.047	0.127	0.2	0.294	0.345
45 – 54	0.013	0.021	0.03	0.033	0.126	0.207	0.302	0.327
55 – 64	0.013	0.021	0.03	0.033	0.143	0.227	0.318	0.351
Family structure:								
Single male, no kids	0.033	0.052	0.079	0.046	0.125	0.196	0.295	0.173
Married male, no kids	0.011	0.018	0.027	0.042	0.105	0.165	0.248	0.387
Single male, kids	0.023	0.038	0.063	0.107	0.092	0.151	0.251	0.426
Married male, kids	0.013	0.021	0.031	0.049	0.105	0.171	0.253	0.398
Single female, no kids	0.035	0.053	0.075	0.048	0.193	0.294	0.414	0.263
Married female, no kids	0.013	0.022	0.033	0.047	0.135	0.229	0.346	0.502
Single female, kids	0.043	0.066	0.096	0.134	0.194	0.302	0.44	0.61
Married female, kids	0.019	0.028	0.039	0.053	0.213	0.325	0.444	0.603
Education:								
Less than 9 years	0.145	0.213	0.276	0.312	0.271	0.4	0.516	0.584
9 – 11 years	0.068	0.108	0.156	0.168	0.195	0.31	0.446	0.481
High school graduate	0.022	0.036	0.056	0.059	0.123	0.205	0.313	0.331
Some college	0.014	0.022	0.033	0.033	0.119	0.179	0.269	0.274
College graduate	0.006	0.008	0.013	0.013	0.077	0.113	0.17	0.177
Post-college	0.002	0.003	0.005	0.005	0.057	0.083	0.125	0.132

(Continued)

Proximity to minimum wage to qualify as “at risk” for an uninsured worker:	All workers			Individual-specific cost	Uninsured workers			Individual-specific cost
	\$1	\$2	\$3		\$1	\$2	\$3	
Race:								
White non-Hispanic	0.011	0.018	0.027	0.028	0.109	0.171	0.259	0.266
Black non-Hispanic	0.022	0.039	0.063	0.063	0.116	0.2	0.327	0.327
Hispanic (any race)	0.025	0.039	0.051	0.055	0.154	0.239	0.319	0.342
Other non-Hispanic	0.072	0.112	0.156	0.175	0.199	0.308	0.429	0.48
Establishment size:								
1 – 9	0.049	0.074	0.103	0.112	0.153	0.23	0.321	0.351
10 – 24	0.035	0.054	0.08	0.086	0.141	0.217	0.323	0.347
25 – 99	0.024	0.038	0.056	0.059	0.144	0.228	0.335	0.357
100 – 499	0.016	0.024	0.036	0.04	0.139	0.206	0.315	0.343
500 – 999	0.012	0.02	0.03	0.034	0.119	0.204	0.306	0.347
1,000+	0.012	0.021	0.03	0.031	0.134	0.23	0.341	0.343
Industry								
Agriculture, mining, construction	0.027	0.042	0.063	0.076	0.094	0.144	0.216	0.258
Manufacturing	0.011	0.019	0.03	0.033	0.111	0.194	0.302	0.328
Trade	0.033	0.052	0.073	0.073	0.181	0.287	0.406	0.406
Transportation, communications, utilities	0.009	0.014	0.024	0.025	0.071	0.12	0.2	0.209
Financial services, insurance, real estate	0.005	0.008	0.015	0.015	0.065	0.109	0.195	0.196
Services	0.026	0.04	0.058	0.062	0.17	0.259	0.371	0.398
Unweighted sample size	235,020	235,020	235,020	235,020	32,996	32,996	32,996	32,996

Table A6
Projected impact of insurance mandate on different groups

	Fraction of workers in this group who are uninsured	Average increase in hourly compensation for uninsured	Fraction of uninsured workers in this group losing jobs	Fraction of all FT workers in this group losing jobs
Total:	0.152	0.143	0.014	0.002
Age:				
22 – 24	0.311	0.153	0.018	0.006
25 – 34	0.202	0.146	0.013	0.003
35 – 44	0.135	0.139	0.013	0.002
45 – 54	0.101	0.135	0.014	0.001
55 – 64	0.094	0.143	0.017	0.002
Family structure:				
Single male, no kids	0.267	0.066	0.007	0.002
Married male, no kids	0.108	0.151	0.017	0.002
Single male, kids	0.251	0.155	0.009	0.002
Married male, kids	0.123	0.134	0.013	0.002
Single female, no kids	0.181	0.111	0.014	0.002
Married female, no kids	0.094	0.228	0.019	0.002
Single female, kids	0.219	0.294	0.029	0.006
Married female, kids	0.087	0.283	0.024	0.002
Education:				
Less than 9 years	0.534	0.246	0.021	0.011
9 – 11 years	0.350	0.185	0.020	0.007
High school graduate	0.178	0.134	0.013	0.002
Some college	0.121	0.122	0.013	0.002
College graduate	0.074	0.077	0.007	0.001
Post-college	0.041	0.073	0.013	0.001
Race:				
White non-Hispanic	0.105	0.118	0.012	0.001
Black non-Hispanic	0.193	0.113	0.012	0.002
Hispanic (any race)	0.161	0.168	0.018	0.003
Other non-Hispanic	0.364	0.187	0.019	0.007
Establishment size:				
1 – 9	0.320	0.159	0.016	0.005
10 – 24	0.249	0.139	0.012	0.003
25 – 99	0.166	0.135	0.012	0.002
100 – 499	0.115	0.131	0.012	0.001
500 – 999	0.097	0.133	0.019	0.002
1,000+	0.089	0.142	0.016	0.001
Industry				
Agriculture, mining, construction	0.293	0.083	0.008	0.002
Manufacturing	0.101	0.100	0.010	0.001
Trade	0.180	0.158	0.015	0.003
Transportation, communications, utilities	0.121	0.079	0.010	0.001
Financial services, insurance, real estate	0.076	0.067	0.011	0.001
Services	0.156	0.192	0.019	0.003
Unweighted sample size	235,020	32,996	32,996	235,020

Table A7

Distribution of full-time private sector workers by insurance coverage and (if uninsured) wage relative to the minimum wage, for regions and selected states

	Northeast	Midwest	South	West	Total
Total	1.000	1.000	1.000	1.000	1.000
Own EHI	0.669	0.691	0.645	0.643	0.660
Other EHI	0.202	0.203	0.175	0.177	0.187
Uninsured, within \$1 of min wage	0.016	0.011	0.021	0.039	0.022
Uninsured, \$1-2 of min wage	0.008	0.007	0.015	0.018	0.012
Uninsured, \$2-3 of min wage	0.012	0.010	0.021	0.017	0.016
Uninsured, \$3+ min wage	0.094	0.078	0.123	0.105	0.103
Unweighted sample size	51,306	61,339	67,707	54,608	235,020
	CA	MA	OR	WA	
Total	1.000	1.000	1.000	1.000	
Own EHI	0.629	0.669	0.687	0.701	
Other EHI	0.176	0.234	0.162	0.152	
Uninsured, within \$1 min	0.052	0.012	0.045	0.040	
Uninsured, \$1-2 of min wage	0.022	0.009	0.020	0.017	
Uninsured, \$2-3 of min wage	0.018	0.006	0.017	0.014	
Uninsured, \$3+ min wage	0.104	0.071	0.070	0.077	
Unweighted sample size	16,990	4,902	3,216	3,923	

Table A8
Description of final sample selection

All observations present in both March and “outgoing rotation group” CPS samples	563,572
Restrict to ages 22-64	493,535
Restrict to workers	376,928
Restrict to private sector	271,508
Restrict to those working ≥ 20 hours/week	239,876
Restrict to those with observed establishment size	235,830
Restrict to those with observed wages and pay periods	235,671
Restrict to those with valid industry, other than Public Administration	235,473
Restrict to those with hourly earnings \geq \$1	235,020