Health Insurance and Job Creation by the Self-Employed

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Executive Summary

Nearly half of all companies surveyed by the National Federation of Independent Business's Education Foundation reported that health insurance costs were a critical problem. States regulate health insurance by mandating minimum levels of certain benefits as part of policies offered. In this paper, we evaluate the impact of state health insurance mandates on job creation by small firms, using data from the Survey of Income and Program Participation for 1993-95. Results from an ordered probit regression indicate that the greater the number of mandates in a state, the lower the probability that a self-employed person will hire additional people. These results hold when we consider both the sum of mandates as well as a cost weighted measure of the most expensive mandates. The predicted probability of owning a business with at least one employee decreases by nearly 10 percentage points as the number of mandates increases from 0 to 16.

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1. Introduction

Surprisingly, despite all the attention devoted to the "job creation" attributes of small businesses, there has been an insignificant amount of research on the hiring decisions of entrepreneurs.[1] What determines an entrepreneur's decision to employ more workers and expand the size of the business? Why do the bulk of small businesses employ less than 9 people, and why are more than 50% of small businesses sole-proprietorships with no employees?[2][3] This paper is an attempt to address this issue empirically. Specifically, it highlights the role of health care regulation- health insurance mandates-on a small firm's decision to increase employment and expand the firm.

While there is general agreement that health insurance mandates affect small firms disproportionately more, there are conflicting views about whether they distort firm behavior in terms of firm's decision to offer insurance coverage to workers, reduce coverage and their impact on small firm premium costs.

In David Birch's classification, this paper attempts to explains the factors behind the "mice"-small businesses that create jobs when they start-up but then grow very little-and the "gazelles"-businesses that start small but then grow very quickly.[4]

The transition from a sole proprietor to a small business employer may be a significant one. It could depend on the entrepreneurial abilities of the small business owner and his ability to access financial capital. It also involves substantial adjustment

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[1] For instance, Haltiwanger, Davis and Schuh (1993) find that the rate of gross job creation in US manufacturing is nearly double for firms with less than 100 employees as compared to firms with more than 25000 employees.

[2] According to Census, "Nonemployers account for roughly 3 percent of business activity [in terms of sales or receipts]. At the same time nonemployers account for nearly three-quarters of all businesses. Most nonemployer businesses are very small, and many are not the primary source of income for their owners." See the U.S. Census Bureau, Nonemployer Statistics for more detailed information.

[3] Overall, in 2002, there were approximately 2.7 million firms with 0-4 employees and 1 million firms with 5-9 employees, out of a total of approx.5.7 million firms. http://www.sba.gov/advo/stats/st.pdf

[4] David Birch is an economist and founder of the research firm Cognetics, Inc. who was the first to point out in the 1980s that small firms create more jobs than large firms, which generated a whole new interest in the role of small businesses.

costs, notably in having to manage the payment of labor taxes, providing employee benefits like health insurance and social security contributions, and gaining awareness of employment legislation. For the US, it has been shown that firms that survive the initial few years are likely to grow very rapidly.[5] Thus a policy implication of this study is to see if schemes that focus specifically on encouraging small businesses to make the transition from sole-trader to employer may be more effective in stimulating job creation, as distinct from schemes like the government sponsored Self-Employment Assistance program, that encourage unemployed people to start their own business.

Our results suggest that health insurance mandates do significantly impact firm hiring decisions. A unit standard deviation increase in mandates causes a 6 percent decline in the probability that a firm will employ 6 or more workers. In terms of actual number of firms in the US in 2003, this would mean that there would be nearly 126,000 *less* firms hiring more than 6 employees if even three new mandates were added to the list of growing health mandates adopted by states. Quantitatively, this is a large impact.

Health insurance benefit mandates

Health insurance is regulated at the state level by the use of state mandated health benefits.[6] These are regulations issued by the state that mandate minimum levels of certain benefits as part of policies offered, eg. chiropractic services, mental illnesses etc.[7] Proponents of mandates believe that mandating benefits increases overall welfare since insurance markets may fail to provide the appropriate level of benefits.[8] Opponents of mandates argue that these mandates raise the cost of health insurance, and may be a big reason for non-insurance. According to the 1991 Economic Report of the President, "These requirements raise the cost of health insurance and make it too expensive for many individuals and firms". The cost effect varies due to differences in state laws. For example, Virginia's mandated benefits accounted for about 12 percent of claims costs in 1993, 22 percent of claims in Maryland in 1988 and 5 percent in Iowa in 1987.[9] The

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[5] Bartelsmann et al (2003)
[6] There are mandated providers as well, but we have only included mandated benefits in our study.
[7] For example, the mental health illness mandate in Montana specifies that firms must offer minimum 30 days of inpatient services.
[8] This could be due to adverse selection, or undervaluation of benefits by insurance purchasers
[9] GAO (1996)

studies that reported the highest costs were those for Maryland and Massachusetts, which have more mandated benefits than most states. The number of mandates has soared since 1970, when the total in all states was only 35. On average, states have enacted laws mandating about 18 specific benefits. Although the impact varies by state, studies show that mandates have increased the cost of health insurance in the small group market between 5 and 45 percent, with many states experiencing cumulative increases in the range of 20 to 30 percent.[10] The cost impact of state benefit mandates varied by state because all mandates are not alike, and some may be already covered under existing insurance policies. Moreover, the cost is influenced by implementation and enforcement efforts.[11]

The existing literature linking health insurance and entrepreneurship suggests the following. First, health benefit mandates are more likely to affect the self-employed, individuals or small businesses that are unable to self-insure and are therefore subject to state regulation.[12] Second, a large fraction of the self-employed buy individual insurance or get small group rates (in some states the self-employed are treated as a "group' of one) that are regulated by mandates. Third, the elasticity of demand for health insurance is high among the self-employed, thus raising costs of health insurance through mandates may affect adversely the decision to buy insurance.[13]

As the National Federation of Independent Business (NFIB) reports, small firms do want to and do offer health plans that cover a wide variety of benefits. Providing mental health benefits, like medical and surgical benefits, is important to the productivity of NFIB members and their employees.[14] The hypothesis in this paper is that small

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[10] One study found that mandated coverage increases insurance premiums by 6 to 8 percent for substance abuse, 10 to 13 percent for outpatient mental health care and 21 percent for psychiatric hospital care for employee dependents.(National Council for Policy Analysis, NCPA - BA #224 - An Easy Way to Make Health Insurance More Expensive)

[11] GAO(1996)

[12] Larger companies and organizations such as trade unions avoided the mandates through the Employee Retirement Income Security Act (ERISA). ERISA was intended to permit companies with, say, 1,000 or more employees, especially those operating in a number of states, to self-insure. When employees incur health care expenses under a self-insured employer, the employer rather than an insurance company pays the bill.

[13] Gruber and Poterba (1994)

[14] Coverage varies substantially by firm size: 55 percent of the smallest companies (3-9 workers) offer health insurance. That rises to 74 percent for firms with 10-24 workers and 88 percent for businesses with 25-49 employees. Firms with many part-time workers are less likely to offer health insurance. Firms that employ union workers are very likely (92 percent) to offer coverage regardless of size.

businesses, and sole proprietors, may be unable to grow as a result of rising costs of health insurance. There are several reasons for this. On the one hand, inability to offer insurance may reduce the *supply* of (talented) labor to these firms as workers prefer to work in large firms with insurance coverage.[15] At the same time, on the *demand* side, firms may be unable to grow since the increased cost of providing coverage to *existing* employees may prevent them from hiring new employees.[16] Further, the sole proprietor's own need for health insurance may compete with his decision to incur the additional cost of hiring new workers. Carroll et al (2000) study income tax increases, and the subsequent increases in labor costs, as a possible reason for entrepreneur's not hiring additional labor. In recent times, however, health insurance has been ranked as the top business concern for small firms, followed by taxes. A recent study by the National Federation of Independent Business's Education Foundation found that the cost of health insurance topped the list -- as it has since 1986 -- in its "Problems & Priorities" study of small businesses. Nearly half (47 percent) of the companies surveyed called health insurance costs a critical problem, the severest evaluation possible. Another 23 percent gave it the second-most severe assessment. The study asked 4,044 small-business owners to rank 75 different problem areas' impact on their businesses. Health care insurance cost again dominated the answers. Nearly half of the respondents named it as a critical problem for their companies.[17]

Surprisingly, however, the existing empirical literature has found an ambiguous effect of health insurance mandates on small firms. Several papers have examined the impact of mandates on insurance provision by small firms. Gruber (1992) finds that health insurance mandates reduce coverage of employees in small firms by as little as 1%. This is similar to the finding by Gabel and Jensen (1989), though in a 1992 survey, they showed that 19% of sampled small firms did not offer coverage due to state mandated benefits. Simon et al (2003) examined the effect of state mandated health insurance benefits on labor market outcomes. This type of regulation was found to have very few effects. The number and type of state-mandated health insurance benefits were

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[15] Workers in the smallest businesses that do provide health insurance pay, on average, 17 percent more for health benefits than workers employed by large companies.

[16] NFIB estimates that health premium costs have gone up in the last 5 years by more than 20%.

[17] http://www.bankrate.com/brm/news/biz/thumb/20000816.asp

unrelated to the prevalence of private insurance coverage and to most labor market outcomes. However, there was some evidence that state mandated benefits were associated with an increase in the hours worked per week. As they themselves admit, these results are inconsistent with the widespread opposition to these mandates by small employer groups who complain that state benefit mandates of the kind examined here can increase insurance costs by 30%. Thus the existing literature would suggest that mandates have little or no effect on small firms' decision to provide coverage or on wage and employment of workers in small firms.[18]

The contribution of this paper is to approach the potential impact of mandates from a different angle: their impact on job creation by small firms. The study focuses on the period of the 1990s when there was a tremendous increase in the number of mandates passed by states, unlike a lot of earlier studies which focused on the 1980s. As Kaestner et al (2002) report, the number of states with six or more mandated benefits increased dramatically between 1988 and 1997.

Section 2 will provide a review of the literature. Section 3 the methodology. Section 4 will provide a description of the data used in the study. Section 5 discusses the data. Section 6 presents the empirical results. Section 7 concludes.

2. <u>Literature Review</u>

The literature review will focus mainly on the job creation by small firms' literature, though I will also mention the important papers that have attempted to link health insurance and entrepreneurship. Carroll et al (2000) is to our knowledge the only study of this kind done for the US. They investigate the effect of entrepreneurs' personal taxes on their use of labor, analyze the tax returns of sole proprietors before and after the Tax Reform Act of 1986, and determine how the substantial reductions in marginal tax rates affected their hiring decisions and wage bills. They conclude that individual income taxes exert a statistically and quantitatively significant influence on the probability of hiring workers. Raising the entrepreneur's "tax price" (1-Marginal Tax Rate) by 10%

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[18] Other papers have studied impact of mandates on employment or wages. Gruber (1994) finds no impact of mandated maternity benefits on the probability of a married woman of child bearing age being employed, though they find that wages for this group fell by about 4%.

raises the mean probability of hiring by about 12%. They develop a probit model where the left hand side dependent variable is the probability that the entrepreneur hires labor, and the explanatory variables include the tax price, industry dummies and entrepreneur characteristics, such as whether the entrepreneur is married, his age, any interest and dividend income earned, and the number of dependents in the family. The main drawback of this study is that it relies solely on data on tax returns available from the IRS, and identifies sole proprietors as those who file under Schedule C. Apart from the inherent problems with using this as an identification criterion, they are unable to distinguish how many workers are actually employed by these sole traders, a question that we are able to answer with the use of SIPP data. They proxy for that using the wage bill, which as they admit is hard to interpret since changes in the wage bill may be dominated by changes in wage rates, rather than labor demand. Further, they are unable to include a rich set of personal variables, since the data does not provide that information. My study will be able to include more demographic variables, and also control for state level conditions, which they do not do.

Henley (2003) uses data on self-employment from the British Household Panel Survey data. He investigates the contributions of financial and entrepreneurial capital to job creation. Housing wealth appears to be positively and significantly associated with small business job creation, along with education, and whether the parents of the small business owner were self-employed who had also employed other workers. The most successful job creators were middle aged and men.

Cowling et al (2004) also use data from the British Household Panel Survey. The estimation procedure takes the form of two probit regressions. The first estimates the probability of observing an individual in self-employment with or without employees, and the second of observing an individual as a job creator, given self-employment. Results suggest that academic success is an important determinant of being a job creator. Also the greater the number of months spent in self-employment, the larger the chances of being a job creator. Age also positively affects the probability of job creation, increasing uptil age 41, and then declining. They do find that men who have received an inheritance are significantly more likely to be job creators, since the unexpected income may provide the financial ability for an entrepreneur to overcome the costs of expanding

the business. However, they do not find any role for parental occupation and family characteristics. While this paper does use health status as a determinant, it allows no role for unobserved characteristics of entrepreneurs, by putting in individual random effects. It also does not allow for the costs of business expansion to affect the decision.

Another study for the UK by Burke at al (2002) used data from the National Child Development Study to explore the influence of education, inheritance and other background characteristics on the propensity to become self-employed and on subsequent job and wealth creation. Their findings show the importance of post-compulsory education and professional training, as well as non-pecuniary motives, such as the desire to be one's own boss, as affecting the extent of job creation. However, they are unable to identify the effect of age, because of the cohort nature of their data, and they do not include other variables, such as taxes and health insurance costs.

Of the papers linking health insurance and entrepreneurship, Gruber and Poterba (1994) analyze the impact of the Tax reform Act of 1986 which allowed self-employed individuals to deduct a certain percentage of their cost of health insurance from their taxable income, thus bringing them closer to the tax treatment afforded to employer provided health insurance. The results of their paper suggest that a 1% increase in the cost of health insurance coverage would reduce the probability for coverage for self-employed households by 1.8%. Perry and Rosen (2001) find a statistically negative effect of self-employment on the probability of being insured. Holtz-Eakin et al (1996) study the effect of a state law, COBRA, passed in 1985 that mandated that when an employee leaves a firm, he must be allowed to purchase health insurance from the firm for up to 18 months. Since employer provided insurance is generally cheaper than an individual policy, this lowers the cost of moving from wage and salary occupations towards entrepreneurship. However, they find that health insurance portability has no statistically significant impact on transitions from wage earning to entrepreneurship.

3. **Empirical Methodology**

The measure of job creation reported in SIPP is a grouped variable. Thus the business owner is asked whether the number of employees was 0, between 1 to 2,

between 3 to 5 or 6 and more. Hence it is appropriate to treat the modeling problem as one of ordered choice. This follows the methodology adopted by Henley (2003). We assume that the latent employment variable, Y_{it}^*, is determined by a set of variables, X_{it}, according to the following model:

$$Y_{it}^* = X_{it}'\beta + \varepsilon_{it} \qquad \text{where } \varepsilon_{it} = \alpha_i + u_{it} \qquad i=1,..,N \ t=1,..,T \qquad (1)$$

Y_{it}^* is an unobserved index of the ability to employ others. X_{it} are the observed variables, detailed in the following section, that determine job creation by the small business owner. ε_{it} is the stochastic error term.

The observed variable is Y_{it}, which we observe as a categorical variable:

$$Y_{it} \quad = \quad 0 \ \text{if} \quad Y_{it}^* \leq 0 \qquad\qquad\qquad (2)$$
$$= \quad 1 \ \text{if} \quad 0 < Y_{it}^* \leq \delta_1 \qquad\qquad\qquad (2a)$$
$$= \quad 2 \ \text{if} \quad \delta_1 < Y_{it}^* \leq \delta_2 \qquad\qquad\qquad (2b)$$
$$= \quad 3 \ \text{if} \quad \delta_2 < Y_{it}^* \leq \delta_3 \qquad\qquad\qquad (2c)$$

The different groups refer to the number of response categories, and δ_j refer to the threshold levels which are empirically estimated. Estimation of the model is by Maximum Likelihood, using Ordered Probit. For a detailed explanation of the estimation strategy, see Appendix. The approach set out here allows the marginal effects of individual variables to vary over the job creation data range. In contrast to previous studies, we can therefore investigate whether a particular control variable has a greater marginal impact on the probability of making a transition from sole trader to small employer, than on the probability, say, of transitioning from small to medium sized employer.

4. <u>Definition of Variables</u>

The vector of explanatory variables includes state-level variables as well as demographic variables[19]. In particular, X_{it} includes the following:

Health Insurance Mandates: The number of mandates varies a lot across states. This study will include the total number of mandates in each state as an explanatory variable, since studies show that in general, the more the mandates, the larger the costs associated with them. Additionally, we will also focus on some high cost mandates, such as mandates for alcohol and drug abuse treatment and mental illness, weighting their effect by the premium increment which they add to group health insurance rates. The greater the cost of these mandates, the lower the probability of firm expansion. The BlueCross BlueShield Association reports in its *2001 Survey of Plans* (our source for health mandates data) that between them, states had a total of 690 benefit mandates in place. However, for the period under study, Table 1 shows that the total number of mandates for all states changed from 227 to 275. On average, states had enacted laws mandating about 7 specific benefits. Some states like California, Florida, New York and Rhode Island had more than 10 mandated benefits.

The top marginal state income tax rate: This has changed over time for 25 states in the period 1993-1998. Higher taxes may discourage firm expansion. The adverse effect of taxes on job creation was studied by Carroll et al. (2000).

State unemployment rate: The effect of high unemployment rates may be to increase the supply of workers for small firms.

Net profits of business: The higher the profits, the more likely is firm expansion.

Individual and family level variables: These include marital status, age, race, health insurance status, education level, as well as family income from wealth and whether the family owns their home.

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[19] For the grouped states, I use sample population weighted averages of these variables.

5. <u>Data Sources and Description</u>

We use a longitudinal dataset available from the Survey of Income and Program Participation (SIPP), published by the Census Bureau for 1993-1995. SIPP is a multi-panel longitudinal survey of adults, measuring their economic and demographic characteristics over a period of approximately three years. Persons selected into the SIPP sample continue to be interviewed once every four months over the three years of the panel. At the time of the interview they are asked questions relating to the previous four months. Thus the data is available monthly for each person in the panel. For instance, the 1993-1995 SIPP panel consists of approximately 120,000 individuals who were interviewed in 1993, 1994 and 1995. From this we include in our sample all those who identified themselves as self-employed, either fully employed in their business or working at a job *and* owning a business. The sample size is approximately 8600. Though the data is available at an individual level, it is possible to uniquely identify a family or a household, and construct family level variables. The data gives information about the state in which the individual is located at the time of the interview. SIPP provides information on the number of employees hired by a self-employed person, as a grouped variable. It also provides information on the health insurance status of the individual.

Table 1 lists the total number of mandated benefits in all states and the trend between 1993-1995. A few states added newer mandates over time which gives us some variation along the time dimension, but not a whole lot. Therefore, we are unable to control for pre-existing differences across states by the use of state dummies, since we would lose most of the variation if we did. Figure 1 plots the cross-sectional variation in the number of mandates across states in the year 1995. It then compares that to the number of firms in different employment categories, also across states. There appears to be a clear negative correlation between mandates and employment across all three graphs. On average, states with high mandates have fewer employment generating small businesses. The negative correlation (-0.031) is largest for the firms with 6 or more employees.

The summary statistics in Table 2 reveal sample characteristics for the 1993-95 panel. SIPP interviews all individuals above 15 years of age in the sample household. We

have broken up the sample means to show separately the statistics for each of the four self-employed categories (1) Self-employed with 1 employee (2) SE with 2 employees (3) SE with 3-5 employees (4) SE with 6 or more employees. The reason we don't report summary measures for the category SE with 0 employees, is that the survey question asks the self-employed business owner to *include* himself when answering this question. Thus SE with 1 employee basically refers to sole traders. However, there are instances where individuals who claimed to be self-employed reported 0 employees. This could be mis-reporting or lack of understanding of the question. So we do include these individuals in our sample as sole traders. However, results for this particular category are no different than those in the category (1), and we don't separately report results for this group.

As the descriptive statistics show, access to financial capital, either through family earned income or family asset income is significantly larger for the largest employment category, compared to sole traders. The employers have nearly $2000 more than sole-traders. Home ownership rates among "large" employers are higher, which imply greater housing equity as well. Higher employment categories are also those which have earned high business profits in the past.

Human capital levels are captured by including a binary variable for whether the self-employed individual had attended college. Self-employed sole traders are less likely to have attained a college degree. In our sample, 58 percent of sole traders are with a college degree, while 68 percent of employers with 6 or more employees are with a college degree. This is a fairly large difference suggesting that education is positively correlated with business success as measured by number of employees.

Demographic differences between the groups are significant in some cases, but not all. For instance, while 61 percent of the self-employed in the sole trader category are males, nearly 82 percent are male in the highest employment category, suggesting that males are more likely to transition to being employers, rather than sole-traders. There are no major differences, however, in terms of ethnicity or race. Further, in terms of age, the employers are only marginally older than the sole-traders.

Macroeconomic influences on employment generation by the self-employed are captured by putting in controls for state unemployment rates and state tax rates. Generally, sole traders are more concentrated in areas of high tax rates as compared to the

employers. However, there are no significant differences in unemployment rates across categories.

In terms of health insurance mandates, the larger employers are generally concentrated in states with low mandates. This is particularly clear when we see the trend in individual mandates such as mental health, drug abuse and alcohol treatment or the cost-weighted sum of these mandates. However, the differences are not very large across the four groups.

Finally, we report statistics on the occupational, industrial and geographic breakdown of these groups. The regions are defined using the Census classification of states into different groups. The larger employers are more likely to be in the South, while the smaller employers are more likely to be in the West or Midwest. In terms of occupation and industry, sole-traders are more likely to be involved in construction and personal services, while employers are more likely to be in manufacturing.

Table 3 compares wage-and-salary workers to the self-employed (with or without employees). In this case, the differences between the groups are larger. The self-employed are more likely to be male (66 percent), they are likely to be married (77 percent) and older than the average employed person. Blacks are significantly more likely to be in regular jobs-9 percent of the employed are Blacks, while only 3 percent of the self-employed are Blacks. The self-employed are less likely to have health insurance as compared to the employed (63 percent), but they are more likely to have housing wealth (81 percent compared to 69 percent for employees).

6. Empirical Results

Equation (1) was estimated using the covariates described in the previous section. Results are reported in Table 4. The estimation sample uses observations from Waves, 1, 4 and 7 of the Survey of Income and Program Participation for all individuals who reported being self-employed either full-time or part-time. These correspond to information available for the month of January for the years 1993, 1994 and 1995. The responses to the different employment categories are used to construct a dependent variable with four ordered categories, with higher categories representing more

employees. The coefficient estimates in Table 4 are the result of using an ordered probit estimator, allowing error terms for the same household to be correlated over time. The sample size for the entire period is 8647, which includes households who were in the sample in all three years.

Coefficient estimates

Turning first to the role of demographic variables, such as age, sex and race on job creation by the small business owner, we find a positive and statistically significant impact of being male and with at least a college degree. Educational attainment is an important predictor of job creation. College educated self-employed create more jobs than those with less qualification. Kangasharju and Pekkala (2001) in their paper had found that firms founded by more educated individuals are more likely to succeed, which supports our results.

While being married has no significant impact on job creation, the coefficient is positive as we may expect. Married individuals with one spouse possibly in a regular wage and salary job, are more likely to undertake the risk of owning and expanding a business, than unmarried individuals with earnings from the business as the only means of income support. At the same time, having a larger number of children in the family, leads to more job creation as well. This is possibly correlated with the point we just made about having a working spouse to share in the responsibility of the household. Indeed the coefficient on MARRIED goes up in significance when we exclude from our list of controls the number of children in the household. Also, a self-employed individual with children is more likely to want to expand the business in order to increase his earnings.

We find no significant impact of race and ethnicity. The sign on the coefficients however indicate that minorities such as Blacks are less likely to be job creators, while certain ethnic groups such as Mexicans are more likely to be job creators. The trend among Hispanics to start firms, with or without employees, has been studied recently by the SBA Office of Advocacy.[20] In 2002, Hispanic Americans owned about 7 percent of the 23 million small firms in the U.S. and their numbers are steadily rising. An interesting insight into the issue of disparities between Blacks and Hispanics in terms of business

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[20] http://www.sba.gov/advo/stats/sbfaq.pdf

start-up and survival rates is provided by economists at the Federal Reserve Bank of Minneapolis (1999).[21] They suggest that Blacks are significantly more likely to rely on personal savings for running a business, as opposed to Hispanics. In other words, outside sources of funding, such as trade credit or loans from friends and family, are less likely to be available for Blacks. Hence Blacks may be less likely to expand firms and create jobs due to lack of access to credit and lack of own financial capital.

The creation of employment by the self-employed is related to the age of the business owner. Analyzing the effect of age, it appears that the self-employed are at the peak of their ability to create jobs at 50 years of age. This is close to Henley's (2005) figure of 48 years.

Self-employed home owners are more likely to create jobs than non-home owners. Housing wealth, along with high family incomes, is an important predictor of business growth. Capital resources may be easier to access using housing as collateral. High returns from business investment, as we may expect, are important for employment generation.

Finally, primary policy holders with health insurance coverage under their own name were significantly more likely to be employment generators, than those without insurance. If we include a different variable that measures insurance coverage under someone else's plan, such as another family member, that does not turn up significant. We also included a control for whether coverage was through a former employer, and that turned up negative and significant ($p=0.003$). This could be because insurance provided through a previous employer (such as through COBRA) is unlikely to continue for more than a year, and therefore individuals dependent on that may not be able to make long-term decisions to expand the business.

Controlling for state-level macroeconomic conditions, the state unemployment rate is found to exert a positive and statistically significant effect on job creation. This suggests that as demand for labor weakens in other sectors of the economy, small businesses are better able to hire workers. This is an interesting result since it also drives home our main point which is that small businesses are in continuous competition with other firms in order to attract the best workers. To this end, they typically try to offer

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[21] http://minneapolisfed.org/pubs/region/99-09/chicago.cfm

benefits, such as health insurance, to all workers. However, if health insurance costs go up, this makes it tougher for them to retain good workers, which in turn has an adverse impact on firm growth.

Before we discuss our main results relating to health insurance mandates, we turn to the effect of tax rates on small businesses. The tax rate that we use here is the top marginal state income tax rate. As in Carroll et al. (2000), we find that tax rates exert a statistically significant negative impact on firm hiring decisions. Intuitively, an increase in taxes raises the cost of doing business for a small business owner. He can compensate for this by cutting down on hiring and therefore the wage bill.

To capture the effect of health insurance mandates on small business job creation, we use different measures of mandates. Following Gruber (1992), we first defined a measure that was the sum of all the mandates passed in each state by any year *t*. For example, by 1993, California had a set of 11 mandated benefits, while Nevada had 9 mandated benefits in place, out of a possible total of 35 mandated benefits listed in Blue Cross Blue Shield's Plans (2001). Results with this measure are presented in Column (1) of Table 4. The coefficient suggests that a unit increase in the number of mandates would lead to a decrease in the number of employees hired by small firms. The coefficient is negative and statistically significant at 5 percent. Hence mandates do seem to matter to firm hiring decisions.

A major drawback of the data at this point is that it reveals no information about whether the small business actually provides insurance to its employees. So why do we find a significant impact of mandates on small firm hiring decisions? We believe that there are both demand and supply side factors at work. On the demand side, if firms offer insurance, an increase in costs due to more mandated benefits, would cause firms to either reduce coverage to existing employees or hire fewer employees. At least in the short run, cutting down on new hires may be an optimal response. If however, they do reduce coverage, they may lose some workers, or have a reduced supply of workers available to them, since workers may prefer to transfer to large firms that are exempt from such state regulation. The 2002 Small Employer Health Benefits Survey (SEHBS) reports that 35 percent of firms responded that their decision to offer health insurance had

had a major impact on employee retention and employee recruitment.[22] Another 37 percent reported that it had had a minor impact.

For a small business, more of the premium increases are likely to pass onto the worker. The 2002 SEHBS reports that in 2001, nearly 19 percent of small employers offering health benefits made changes to their health plan. Sixty-five percent of these firms increased employees' out-of-pocket costs and 30 percent increased employees' share of the premium. Forty-three percent said that health care costs had caused them to reduce pay raises or bonuses, put a freeze on hiring or lay off some workers.

Another way of addressing this issue is to see if the business owner has health insurance, and isolate the effect of benefit mandates for those self-employed who have health insurance. If the insurance is purchased as an individual policy, the business owner has to bear the premium increases associated with rising health care costs. The insurance could also be part of a group plan purchased for the business and its employees, hence premium increases would be passed onto the worker as well. So in Column (2), we create a variable that is the interaction of the dummy for having health insurance with the total number of mandates. This variable is also negative and significant at 10 percent.

These results are robust to the inclusion of industry and region dummies. The region dummies indicate that states in the western part of the country are significantly less likely to have employment generating small firms (p-value=0.046), while those in the South are more likely to have them (thought this result is not significant). Ideally, we would like to introduce the full set of 48 state dummies to uniquely identify the effect of changes in legislation on firm growth. However, given that there is very little change in the number of mandates across the three years in the panel, we would be losing most of the variation in the mandate data by including state dummies. Therefore, we proxy for the state effects by including region dummies and controlling for state-level macroeconomic conditions such as tax rates and unemployment rates. Coefficients on the industry and occupation dummies indicate that the self-employed in manufacturing and construction are more likely to be job creators than those in personal services.

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[22] The 2002 SEHBS surveyed 502 small (2-50 employees) firms that offered benefits and 498 firms that did not. A summary of the findings is available at:
http://bcbshealthissues.com/proactive/newsroom/release.vtml?id=37339&PROACTIVE_ID=cecdcbc6c9cc
c8cbcbc5cecfcfcfc5cecdcfc9cacccdccc9cac5cf

Finally, in Column(3), we create a weighted mandate cost index, which weights the three most expensive mandates i.e drug abuse, alcohol treatment and mental health by the estimates of the potential increment which they add to group health insurance premiums. The weighting we use is the same as Gruber's:

MANDCOST=ALCOHOL+5*MENTAL+DRUG

Where ALCOHOL, MENTAL and DRUG are the mandate dummies. The weighting is primarily based on the fraction of claims dollars paid out under each of these benefits. Gruber (1992) reports that Mental Health on average add the most to costs, hence they have a higher weighting than alcohol or drug abuse treatment. A detailed discussion is in the Appendix.

The effect of premium increases in the highest cost mandates is to lower the probability of job creation by the self-employed. The coefficient on MANDCOST is negative and significant at 10 percent. The reason we do not include region dummies here is that this variable is the cost-weighted sum of three mandate dummies, which exhibit very limited variation across states and over time. Only a couple of states every year passed these mandates during the sample period. Most states either had them throughout or did not adopt them. Thus if we include the region dummies, the coefficient on MANDCOST is only significant at 15 percent (p-value=0.111) since almost all the variation is absorbed by the region fixed effects. It is possible to include a limited set of region dummies to reproduce the results of Column (3).

Another specification we tried was to introduce dummies for mental health, drug abuse and alcohol treatment separately in the regression. In this case, while all three mandates enter with a negative coefficient, the mental health mandate dummy is significant at 10 percent (p-value=0.065).

To summarize, the evidence strongly suggests that while individual mandates matter to the extent that they add to premium increases, the biggest impact on small firms is simply in terms of the total number of mandates in a state. The larger the number of mandates, the lower is the probability of employment generation. Both the type and the sum of mandated benefits matter to job creation decisions. All these results can be reproduced in a cross-section analysis, though we do not present those results here.

Small firm waiver laws

In the late 1980s, some states responded to the growing perception that health benefit mandates were leading to problems of under-provision of insurance coverage to employees in small firms and high premium costs for small firms. This led to legislation exempting small firms (generally, those with less than 25 employees), from having to buy insurance policies subject to state regulation on mandates. Thus small firms could buy "barebones" policies if they chose to do so.

However, for several reasons, we feel that small firms are affected by the total number of mandates, even if they are not explicitly subject to state regulation. For instance, for reasons of attracting and retaining workers, small firms may choose to offer comprehensive policies closer to those mandated by the state, since this would allow them to stay competitive with other firms in the state. Hence even in states where small firms can opt-out of the regulated market, they may not do so.

In support of this argument, Gruber (1992) suggests that mandates are simply not "binding" on the firm's insurance decision i.e. firms that offer insurance are already offering generous policies with most of the mandated benefits. He cites as evidence data from surveys of small and large firms done by the Bureau of Labor Statistics, and reported in Employee Benefits Research Institute (EBRI, 1992). They find that small firms are just as likely to offer coverage for substance abuse, mental illness and other benefits, as large ones.

Further, to qualify for the waiver, in some states, firms also had to meet the requirement that they had not offered insurance to employees for some period prior to buying the "barebones" plan. Thus firms already providing coverage were not likely to benefit from the passage of these laws. For these reasons, our benchmark specification in Table 4 allows the full set of mandates to affect small firms hiring decisions.

However, as a check on our results, we re-ran the earlier regressions to incorporate the passage of the waiver laws. Gruber (1992) identifies 12 states that passed these waiver laws by 1991.[23] To allow for this in our analysis, we replace the sum of mandates in these states as 0, and estimate the model in Column (1) of Table 4. The

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[23] These states are: Alaska, Illinois, Iowa, Kentucky, Maryland, Missouri, Montana, New Mexico, North Dakota, Rhode Island, Virginia and Washington.

regression results with this approach yield similar results. The coefficient on the sum of mandates goes down (in magnitude) from -0.009 to -0.006, but is still statistically significant at 5 percent level of significance.

Marginal effects

Coefficient estimates in ordered probit models have no direct quantitative interpretation. So for an ordered choice model marginal effects can be calculated to show the effect of a change in a covariate on the cell probabilities. Hence for each of the choices in the ordering a separate marginal effect may be calculated. For the case of the probability, $(L_{it}=0)$ and $(L_{it}=1)$ each marginal effect has the opposite sign to the estimated coefficient for that covariate. In cases where the covariate is binary the marginal effect shows the change in the probability $(L_{it}=j)$ for a discrete covariate change (i.e from 0 to 1).

Table 5 reports estimated marginal effects for each covariate using the specification in Column (1) of Table 4. The sample frequencies for each cell are reported at the top of the table. We discuss the marginal effects in detail where they refer to covariates whose coefficients are statistically significant.

To start with the demographic variables, being male decreases the probability of being a sole trader (i.e self-employed with no employees) by nearly 7 percentage points (cell frequency 60 percent), while there is a steady increase in the probability of employing 2,3-5 or 6 and more people. On average, the probability of employing 6 or more people rises by 8 percentage points (cell frequency: 12 percent). On average, for males, there is nearly a 50 percent increase in the probability of being in the higher employment categories.

Being a college graduate reduces the probability that a self-employed person is a sole trader, compared to someone less qualified by nearly 0.7 percentage points. It raises the probability of employing 1 person by 0.3 percentage points, 3-5 people by 0.5 percentage points, and 6 or more people by 0.7 percentage points.

Similarly, an additional $1000 in family earned income or business profit significantly raises the probability of being in a higher employer category. For instance, the probability of employing 3-5 people rises by 4 percent if the amount of earned

income goes up by a $1000. A $1000 rise in business profits has the same marginal impact across the different employment categories. However, since the cell frequency goes down at higher categories, the relative impact is larger for the higher employment levels. An equivalent increase of $1000 would lead to a 1 percent increase in the probability of employing 6 or more people, and a 2 percent decrease in the probability of being a sole trader.

Having health insurance coverage has a significant positive impact on job creation. The self-employed business owner is 11 percent more likely to employ 2 workers, 22 percent more likely to employ 3-5 workers and 36 percent more likely to employ 6 or more workers, if he has insurance coverage. This is a striking and quantitatively significant result which suggests the large role that health insurance coverage plays in self-employment and small firm expansion decisions.

This is even larger than the impact of tax rates or unemployment rates. An increase in tax rates by 1 percentage point lowers the probability of job creation by 1-2 percent on average, while high unemployment rates increase the probability by 1.3-7 percent.

Turning now to the impact of health insurance mandates, a unit increase in the total number of mandates *increases* the probability of being a sole trader by 0.2 percentage points, while it reduces the probability of being an employer by 0.1-0.2 percentage points for the categories *L=2* and *L=6 or more*, respectively. For the highest employment category, this reduces the probability by 2 percent, and for the employment category of 2 this reduces the probability by 1 percent, calculated using their respective cell frequencies. The average number of mandates in our sample is 7. A unit standard deviation increase in the number of mandates would lead to a 6 percent decline in the probability of hiring 6 or more workers. In 2003, there were approximately 2.1 million firms with workers in the range 6-50. Thus the data imply that there would be approximately 126000 *less* firms in this category as a result of a 1 standard deviation increase in mandated benefits. This evidence suggests that mandates are significant in lowering job creation rates. The self-employed are less likely to be large employment generators, the greater the number of mandates in the state. The results are similar when we use the interaction of the total number of mandates with insurance coverage, as well

as when we weight the most expensive mandates by the increment to premium costs. However, if we include the mental health mandate dummy separately, that has a significantly larger impact. Switching from no mental health mandate to having a mental health mandate causes the probability of being in the highest employment category to drop by 1 percentage point, or by 10 percent, which is a relatively large impact.

Studying the predicted probabilities for different levels of mandated benefits, Table 6 shows a clear negative relationship between the size of the firm and the total mandated benefits. Reading the table column-wise, the predicted probability of owning a business with more than 1 employee goes down from 0.45 to 0.34 i.e nearly 10 percentage points as the number of mandates goes up from 0 to 16. The probability of owning a firm with more than 2 employees goes down by nearly 50 percent for the same change in mandated benefits, and by about 35 percent for firms with 6 or more employees.

Summarizing our results on the effect of health insurance mandates on job creation attributes of the self-employed, we find that an increase in the total number of mandates would cause a significant drop in the number of small businesses employing 2 or more workers. The predicted probability of hiring any additional workers goes down by nearly 20 percent as the number of mandates goes up from 0 to 16. Individual mandates, such as mental health mandates, also affect the hiring decision significantly.

7. __Conclusion__

The focus of this paper is on job creation by small firms. While there has been a lot of debate in recent times about job creation (and job destruction) by small firms, there are very few empirical studies that have tried to analyze this issue in a rigorous way. This is especially true for the U.S. Thus the attempt in this paper is to study the various factors that may determine the transition from sole proprietor to a small business employer.

A new factor that this study highlights is the role of health insurance regulation, as captured by state health insurance mandates. Our results suggest that health insurance coverage and therefore health insurance mandates are a significant determinant of whether individuals decide to grow their businesses. The predicted probability of owning

a business with at least 1 employee goes down from 0.45 to 0.34 i.e. nearly 10 percentage points as the number of mandates goes up from 0 to 16. The probability of owning a firm with more than 2 employees goes down by nearly 50 percent for the same change in mandated benefits, and by about 35 percent for firms with 6 or more employees.

Appendix

A.1 Maximum Likelihood Estimation

Ordered Probit

We assume that the latent employment variable, $Y_{it}*$, is determined by a set of variables, X_{it}, according to the following model:

$$Y_{it}* = X'_{it}\beta + \varepsilon_{it} \tag{1}$$

$Y_{it}*$ is an unobserved index of the ability to employ others. X_{it} are the observed variables that determine job creation by the small business owner. ε_{it} is the stochastic error term.

The observed variable is Y_{it}, which we observe as a categorical variable:

$$Y_{it} = 0 \text{ if } Y_{it}* \leq 0 \tag{2}$$
$$= 1 \text{ if } 0 < Y_{it}* \leq \delta_1 \tag{2a}$$
$$= 2 \text{ if } \delta_1 < Y_{it}* \leq \delta_2 \tag{2b}$$
$$.$$
$$.$$
$$.$$
$$= \text{J if } \delta_{J-1} < Y_{it}* \leq \delta_J \tag{2c}$$

For ease of notation, we normalize $\sigma_u = 1$. Let F(.) denote the CDF of the standard normal variable.

For $t=1,..,T$,

$$\Pr ob(y_{it} = 0) = F(-x'_{it}\beta) = P_{i0t} \tag{3}$$
$$\Pr ob(y_{it} = 1) = F(\delta_1 - x'_{it}\beta) - F(-x'_{it}\beta) = P_{i1t} \tag{3a}$$

$$\Pr ob(y_{it} = 2) = F(\delta_2 - x'_{it}\beta) - F(\delta_1 - x'_{it}\beta) = P_{i2t} \qquad (3b)$$

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$$\Pr ob(y_{it} = J) = 1 - F(\delta_{J-1} - x'_{it}\beta) = P_{iJt} \qquad (3c)$$

In general,

$$\Pr ob(y_{it} = j) = F(\delta_j - x'_{it}\beta) - F(\delta_{j-1} - x'_{it}\beta) \qquad (4)$$

Then the likelihood for the entire sample is

$$L = \prod_{i=1}^{N} L_i \qquad (5)$$

where

$$L_i(\beta, \sigma_\alpha, \sigma_u, \delta_1 .... \delta_J \mid y_{i1}, ..., y_{iT}, x_{it}, ..., x_{iT}) = \int_{-\infty}^{\infty} \prod_{t=1}^{T} P_{i0t}(y_{it})^{C_{iit}} ... P_{iJt}(y_{it})^{C_{iJt}} h(\varepsilon_i) d\varepsilon_i$$

$$(6)$$

and where $C_{ijt} = 1$ if $y_{it} = j; C_{ijt} = 0$ otherwise, for all $i = 1,.., N$ and $t = 1,..., T$.

This is a generalization of the usual probit model. The log-likelihood function and it's derivatives can be obtained readily, and optimization can be done by the usual means.

A.2 Assigning Cost Weights to Mandated Benefits: Gruber (1992)

Here we reproduce Gruber's (1992) reasoning for weighting the costs of mandates a certain way. The problem arises since all states do not have the full set of mandated benefits and the mandate cost for each benefit is not presented distinctly in each case. However, comparing across states, it's possible to come up with a weighting. For instance, in Virginia, the estimate for the sum of alcohol treatment and drug abuse mandates is 2 percent of costs, while Maryland claims that alcohol alone adds 1 percent to costs. So each of these mandates is assigned a weight of 1 percent. Mental illness is the most common mandate. It amounts to about 7.5 percent of costs in Virginia and Maryland, and at least that in Massachusetts. However, the total for mental health, drug and alcohol in Wisconsin is only 5 percent, while a CRS study that he cites finds the cost of adding mental illness coverage is less than 5 percent.[24] Thus as a compromise, he assigns a weight of 5 percent to mental health mandates.

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[24] Congressional Research Service (1988), "Health Insurance and the Uninsured: Background Data and Analysis. Washington DC,US Government Printing Office.

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Table 1:
Total Number of Mandates in Each State

State	1993	1994	1995
Alabama	2	3	3
Arizona	4	6	6
Arkansas	6	6	8
California	11	11	12
Colorado	7	7	9
Connecticut	9	10	10
District of Columbia	5	5	5
Delaware	2	2	3
Florida	9	10	13
Georgia	7	8	10
Hawaii	4	4	4
Illinois	5	6	6
Indiana	2	2	2
Kansas	5	5	6
Kentucky	4	4	4
Louisiana	9	9	9
Maryland	7	9	9
Massachusetts	10	12	14
Michigan	6	6	6
Minnesota	13	14	16
Mississippi	4	4	4
Missouri	6	6	7
Nebraska	1	2	3
Nevada	9	9	9
New Hampshire	4	5	6
New Jersey	4	5	9
New Mexico	6	7	8
New York	12	13	13
North Carolina	7	7	9
Ohio	7	8	8
Oklahoma	4	5	5
Oregon	6	6	6
Pennsylvania	4	5	5
Rhode Island	9	11	11
South Carolina	0	3	3
Tennessee	3	3	3
Texas	8	8	9
Utah	3	3	3
Virginia	1	2	3
Washington	9	9	9
West Virginia	5	6	6
Wisconsin	6	6	6
TOTAL	222	247	275

Figure 1:
Mandates and Job Creation Across States:1995
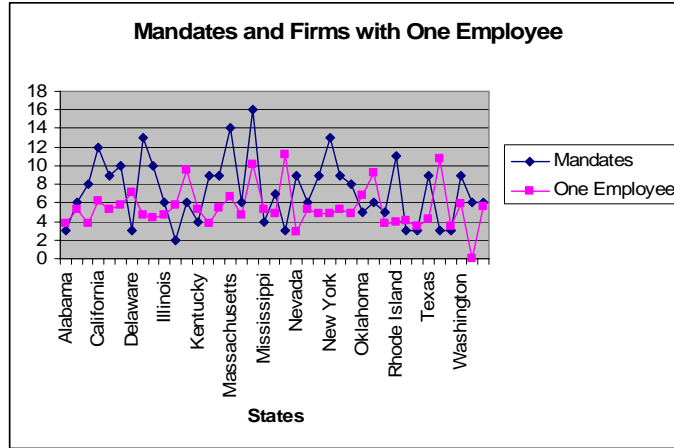
Correlation Coefficient= -0.001

Correlation Coefficient= -0.08

Mandates and Firms with 6 or more employees
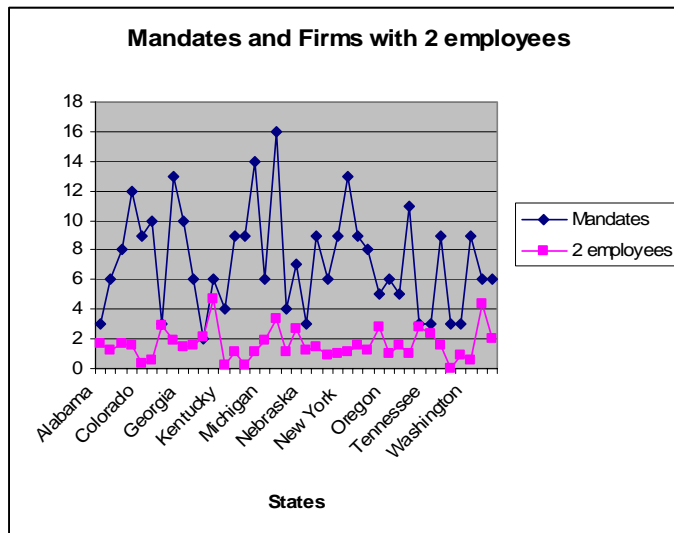
Correlation Coefficient= -0.31

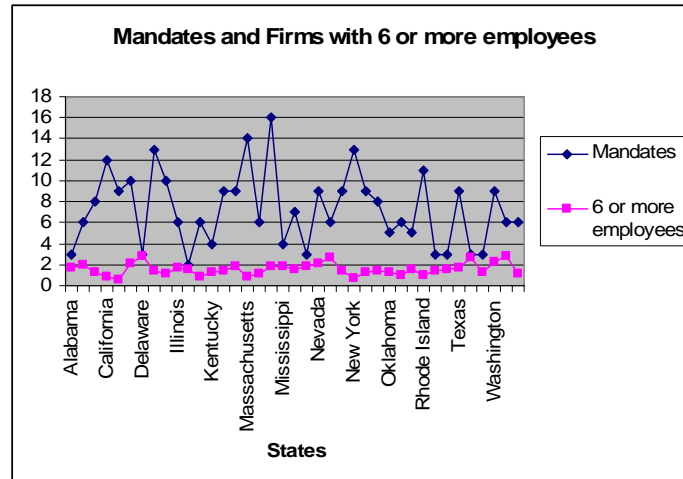Notes: The numbers for firms are scaled by dividing by the population (in millions) of the state in 1995.

Table 2: Summary Statistics

	Employment Categories			
	L=1	L=2	L=3-5	L=6 or more
Male(Dummy)	0.631	0.743	0.776	0.816
	(0.482)	(0.436)	(0.416)	(0.387)
Married(Dummy)	0.713	0.806	0.803	0.837
	(0.452)	(0.394)	(0.397)	(0.369)
Age(Years)	44.42	45.51	44.65	45.88
	(12.41)	(12.24)	(11.41)	(11.23)
Mexican(Dummy)	0.011	0.014	0.008	0.004
	(0.105)	(0.117)	(0.089)	(0.069)
Black(Dummy)	0.037	0.036	0.020	0.024
	(0.190)	(0.187)	(0.140)	(0.153)
Own House(Dummy)	0.780	0.812	0.832	0.879
	(0.414)	(0.390)	(0.373)	(0.325)
College Educated(Dummy)	0.575	0.483	0.565	0.677
	(0.494)	(0.499)	(0.495)	(0.467)
Family Earned Income($)	3353.90	3422.74	4113.4	5003.35
	(2967.78)	(3285.60)	(3347.07)	(3297.84)
Family property Income($)	198.59	260.79	286.61	361.74
	(698.27)	(782.76)	(778.51)	(3313.63)
Health Insurance Coverage(Dummy)	0.414	0.487	0.580	0.698
	(0.492)	(0.500)	(0.493)	(0.459)
Number of Children	0.831	0.905	0.940	1.003
	(1.17)	(1.18)	(1.22)	(1.25)
Profit From Business($)	1484.96	1393.92	1955.02	1205.66
	(4529.09)	(5678.73)	(6320.22)	(5570.31)
Total Number of Mandates	7.88	7.65	7.70	7.42
	(3.42)	(3.43)	(3.30)	(3.36)
Cost Weighted Mandates	4.79	4.79	4.75	4.52
	(2.74)	(2.77)	(2.80)	(2.82)
Mental Health Mandate Dummy	0.632	0.628	0.621	0.585
	(0.482)	(0.483)	(0.485)	(0.492)
Drug Mandate Dummy	0.704	0.741	0.730	0.686
	(0.456)	(0.437)	(0.443)	(0.464)
Alcohol Mandate Dummy	0.926	0.910	0.913	0.914

	(0.260)	(0.285)	(0.281)	(0.279)
Unemployment Rate(percent)	6.26 (1.43)	6.19 (1.38)	6.41 (1.37)	6.24 (1.34)
Tax Rate(percent)	5.65 (3.20)	5.26 (3.29)	5.46 (3.30)	5.04 (3.22)
Regions				
South	0.308	0.334	0.348	0.347
West	0.227	0.176	0.198	0.198
Midwest	0.241	0.300	0.222	0.237
Industry/Occupation Dummies				
Manufacturing	0.045	0.064	0.082	0.102
Construction	0.125	0.144	0.115	0.097
Personal Services	0.084	0.051	0.042	0.038
Professional Services	0.208	0.117	0.177	0.191
Transport/Communication	0.044	0.027	0.035	0.046

Table 3:Comparisons between Wage Employment and Self-Employment

	Self-employed	*Employed*
Male(Dummy)	0.665	0.513
Married(Dummy)	0.770	0.600
Age(Years)	44.92	37.88
Mexican(Dummy)	0.008	0.020
Black(Dummy)	0.031	0.092
Own House(Dummy)	0.809	0.687
College Educated(Dummy)	0.562	0.532
Family Earned Income($)	3679.93	3587.04
Family property Income($)	243.73	103.87
Health Insurance Coverage(Dummy)	0.486	0.626
Number of Children	0.895	0.867
Regions		
South	0.308	0.307
West	0.263	0.271
MidWest	0.214	0.195

Table 4:
Employment Generation By the Self-Employed
Ordered Probit Maximum Likelihood Estimates

Dependent Variable: Employment Category	(1)	(2)	(3)
Male	0.484	0.481	0.485
	(.000)***	(.000)***	(.000)***
Married	0.035	0.034	0.057
	(.260)	(.266)	(.046)**
Black	-0.080	-0.080	-0.066
	(.220)	(.217)	(.313)
Mexican	0.099	0.085	0.100
	(.264)	(.377)	(.258)
Age	0.0003	0.0003	0.0003
	(.766)	(.758)	(.770)
College	0.045	0.044	0.040
	(.074)*	(.079)*	(.104)
Own House	0.056	0.056	0.056
	(.062)*	(.059)*	(.059)*
Family Earned Income('000)	0.040	0.040	0.040
	(.000)***	(.000)***	(.000)***
Family Property Income('000)	0.008	0.007	0.008
	(.659)	(.660)	(.650)
Number of Children	0.022	0.023	0.021
	(.063)*	(.053)*	(.072)*
Business Profit('000)	0.008	0.008	0.008
	(.000)***	(.000)***	(.000)***
Health Coverage-own	0.239	0.307	0.241
	(.000)***	(.000)***	(.000)***
Total Number of Mandates	-0.009		
	(.017)**		
Total Mandates*Own Insurance		-0.008	
		(0.099)*	
Weighted Mandate Cost			-0.007
			(.096)*
Unemployment Rate	0.040	0.036	0.030
	(.001)***	(.002)***	(.002)***
Tax Rate	-0.012	-0.013	-0.017
	(.006)***	(.003)***	(.000)***
Region Dummies	Yes	Yes	No[25]
Year Dummies	Yes	Yes	Yes
Threshold parameters:			
μ_1	1.14	1.18	1.09
	(.000)***	(.000)***	(.000)***
μ_2	1.55	1.59	1.50
	(.000)***	(.000)***	(.000)***
μ_3	2.12	2.16	2.08
	(.000)***	(.000)***	(.000)***

[25] The reason we do not include region dummies here is that this variable is the cost-weighted sum of three mandate dummies: alcohol, drug abuse and mental health. Year-to year variation in this variable is limited to only a couple of states every year, since most states either had the mandates throughout the period or did not adopt them in these three years.

Observations (NT)	8647	8647	8647

Table 5
Ordered Probit-Marginal Effects
(Based on Specification (1) in Table 2)

Sample Count (frequency)	Prob(L=1)[26] 4060 (0.60)	Prob(L=2) 1197(0.138)	Prob(L=3,5) 1230(0.142)	Prob(L=6 or more) 1032(0.119)
Male	-0.074	0.036	0.064	0.079
Married	-0.006	0.002	0.005	0.006
Black	0.014	-0.005	-0.010	-0.013
Mexican	-0.020	0.006	0.013	0.019
Age	-6.32×10^{-5}	2.32×10^{-5}	4.57×10^{-5}	6.1×10^{-5}
College	-0.008	0.003	0.006	0.008
Own House	-0.010	0.004	0.008	0.010
Family Earned Income ('000)	-0.007	0.002	0.005	0.007
Family Property Income('000)	-0.001	-0.0005	-0.001	-0.001
Number of Children	-0.004	0.002	0.003	0.004
Business Profit	-0.001	0.0006	0.001	0.001
Health Coverage-own	-0.045	0.016	0.032	0.043
Unemployment Rate	-0.007	0.002	0.005	0.007
Tax Rate	0.002	-0.001	-0.002	-0.002
Total Mandates[+]	0.002	-0.001	-0.001	-0.002
Weighted Mandate Cost[+]	0.001	-0.0005	-0.001	-0.001
Total Mandates*Insurance [+]	0.002	-0.001	-0.001	-0.002
Mental Health Mandates[+]	0.010	-0.004	-0.007	-0.010

[+]estimated from separate regressions, including the same controls as mentioned above.

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[26] This includes the category (L=0)

Table 6:
Predicted Probabilities

Total Mandates	At Least 1 Employee	More than 2 Employees	More than 5 Employees
0	0.454	0.312	0.114
1	0.360	0.225	0.105
2	0.424	0.256	0.114
3	0.417	0.272	0.123
4	0.406	0.270	0.114
5	0.408	0.260	0.111
6	0.392	0.230	0.097
7	0.346	0.203	0.083
8	0.426	0.260	0.107
9	0.411	0.261	0.111
10	0.401	0.253	0.107
11	0.377	0.252	0.079
12	0.357	0.229	0.080
13	0.366	0.220	0.088
14	0.337	0.186	0.080
15	*	*	*
16	0.348	0.175	0.070

*there were no states in this category