Health care costs, Worker mobility and Firm leverage: Evidence from State Health Mandates *

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December 2, 2017

Abstract

We study how changes in intra-firm bargaining through health insurance induced 'job-lock' affects financing decisions of firms. We use staggered adoption of state health mandates which significantly increased the cost of health insurance borne by firms, along with providing better insurance coverage for their employees. Higher health care costs reduce worker mobility and allow firms to increase financial leverage by lowering operating costs. Consistent with this, we show that following the adoption of high-cost mandates, job turnover among workers reduces significantly, specifically for workers with employer-sponsored health insurance. Further, we find that firms that experience greater benefit from this job-lock significantly increase their debt ratios. Particularly, the increase in leverage is stronger for a) firms with small labor pool, b) financially constrained firms, and c) firms that operate in industries where workers have high job mobility. Our results are robust to geographic regression discontinuity design where we focus on firms located in counties adjacent to state borders. Overall, these results are consistent with greater operational flexibility allowing firms to raise financial leverage via increase in intra-firm bargaining power.

Keywords: Capital Structure, Health benefits, Labour cost, State health mandates

JEL classification: G32, G38

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1 Introduction

Extant literature on capital structure has documented that firms choose their financial policies in consideration of stakeholders of the firm, especially workers (Bronars and Deere, 1991; Matsa, 2010).* In particular, the focus has been to understand the role played by unions (or threat thereof) in shaping firm's financial policies.[2] Surprisingly, little is known about other mechanisms that drive intra-firm bargaining between firms and employees and how it affects firm policies. In this paper, we shed light on one such mechanism, namely employer-sponsored health insurance.

Health insurance affects job mobility of workers in fear of losing insurance coverage (Madrian, 1994).[3] Over 90% of the privately insured population obtain their insurance coverage through the workplace, either through their own employment or the employment of a family member EBRI (2011). Thus, any such 'job-lock' arising out of health insurance provision presents a bargaining advantage for firms in the face of incomplete labor contracts which pose significant risks because of the limited enforcement between the parties.[4]

In this paper, we study how increase in employer-sponsored health insurance costs affects firms and workers. On the one hand, firms face a cost effect of an increase in insurance costs (*Insurance Cost Effect*). On the other hand, firms also benefit from health insurance-induced 'job-lock' of workers. With increasing costs, workers value health insurance more now given that the costs of being uninsured have risen (Summers, 1989). The implication is that workers associate more value with the current employer and therefore greater health insurance costs reduce their job mobility (Madrian, 1994). Hence, workers are willing to bargain their wages down to reduce the risk of losing benefits associated with insurance coverage. Thus, a shift in intrafirm bargaining allows firms to reduce the wages and shrink the wage premium demanded

*One strand of this literature documents that firms internalise impact of their leverage choices on other agents with which it transacts, including customers, and suppliers and therefore choose conservative capital structures (*ex ante*) to mitigate any such concerns (Titman, 1984; Banerjee, Dasgupta, and Kim, 2008). Firms are also shown to mitigate concerns arising out of human costs of bankruptcy by reducing leverage (Berk, Stanton, and Zechner, 2010; Agrawal and Matsa, 2013).

[2]"Bargaining view" posits that firms strategically choose their financial policies such as higher leverage and low cash to diminish the bargaining position of the workers in future wage negotiations (Matsa, 2010; Schmalz, 2016). While the "Financial flexibility view" posits that firms preserve debt capacity in anticipation of increased need for financial flexibility arising from rigidity of labor inputs (Mauer and Triantis, 1994; Kahl, Lunn, and Nilsson, 2014).

[3]This phenomenon wherein workers prefer to stay with the employer in fear of losing insurance coverage is termed as 'job-lock'.

[4]Various studies find that employment-based health insurance significantly reduces the turnover (Gruber and Madrian, 1994), job mobility (Madrian, 1994), effects retirement decision (Gruber and Madrian, 1995), separation rates (Gruber and Madrian, 1997), leads to redistribution of wages (Gruber, 1994a), hours worked (Cutler and Madrian, 1998), labour force participation (Buchmueller and Valletta, 1999; Gruber, 2000) and leave workers in jobs where they are not satisfied with or where their skills are not fully utilized (Baker, 2015).

by workers (*Wage Effect*). In theory, both these effects can be present at the same time within the same firm, whereas it is ultimately an empirical question which one is quantitatively more important for the average firm, or among a particular subset of firms.

Empirically identifying the effect of changes in intrafirm bargaining through employer sponsored health insurance on financial leverage is challenging for two reasons. The first obstacle is measuring the exact amount spent by firms on employees' insurance and the associated coverage. The second difficulty is distinguishing the impact of employees' health insurance costs with other factors that effect leverage decisions, such as unobservable investment opportunities. In other words, expected labor costs including cost of health insurance, the level of employment and firm leverage are jointly determined in equilibrium.

To overcome these challenges, we exploit staggered adoption of high-cost state health mandates between 1966 and 1993 that significantly increased the cost of health insurance borne by firms, along with enhanced insurance coverage for employees. This allows us to examine consequences and mechanisms through which changes in health insurance costs affects firm's financial policies. We follow Gruber (1994b); Antwi and Maclean (2017) and study the following mandates: alcohol abuse treatment, illicit drug abuse treatment, mental health treatment, chiropractors, and continuing coverage for terminated employees and their dependents. During our sample period, these mandates accounted for over 30% of employers' health insurance costs, with these specific mandates generating over 50% of these costs Gruber (1994b).[5]

Importantly, these mandates indeed increased bargaining power of firms through 'job-lock' among workers. Madrian (1994) finds diminished job mobility and reduced voluntary turnover rates for those with employer-provided health insurance. Gruber (1994b) finds that these mandates enable firms to reduce wages and adjust employment. Antwi and Maclean (2017) document significant and persistent effect of these mandates on labor market outcomes for workers. Taken together, this suggests that health insurance significantly increased firms' bargaining power through its effect on worker mobility.[6]

[5]For median firm in our sample it reduces the operating profits by 4.4%. During our sample period, mandate-free basic health insurance policy costs a family about $3,500 a year. The estimated range of additional costs of each mandate was: alcohol abuse treatment ($35-$105), illicit drug abuse treatment(<$35), mental health treatment($175-$350), chiropractors ($35-$105). Bailey and Blascak (2016) finds that the average mandate significantly increases employer premiums by about 1%.

[6]Note that these mandates are restrictions on private insurers i.e., if insurance was sold in the state, it had to include coverage for the legislated provider type, service, or subscriber cohort. Further, restriction on providing worker-specific health benefits, in the absence state-mandates, may stop firms from realizing the benefits from worker job-lock. State health mandates, on one hand may provide better coverage to employees, but on the other hand increase worker's dependence on employer for such benefits.

We begin our analyses by documenting that the adoption of high-cost mandates significantly reduced job mobility among workers. Using data from Survey of Income and Program Participation (SIPP), we show that working age individuals have lower job turnover. Our estimates imply a reduction in turnover of 1.6% (which is 33% relative to the mean). These results are stronger for individuals working in industries with greater mobility measured as inverse of occupation dispersion within an industry (as in Donangelo (2014)). In addition, we show that the adoption of alcohol abuse treatment mandate is associated with an increase in labor supply within workers. We note that among the high-cost mandates, the effect on mobility persists only for 'alcohol abuse treatment mandate'. The mismatch between the demand for and supply of alcohol treatment services may have led to greater importance of alcohol mandate compared to other mandates. Henceforth, in our analyses, we limit our examination to the adoption of alcohol mandate while controlling for contemporaneous adoption of other state-level mandates.

Next, we test for the effect of adoption of alcohol mandate on capital structure decisions. We estimate a differences-in-differences model that controls for time-invariant and time-varying state-level factors that may be correlated with the adoption of high-cost mandates, such as labor supply, wages and other firm characteristics. The treatment and control groups consist of firms headquartered in states that have and have not adopted the high-cost mandate, respectively. In our sample period, many states implemented at least one or more of the mandates we study, thus offering us substantial heterogeneity for identification.

Our key result is that the adoption of alcohol mandate positively affects firm leverage. Our most preferred estimates suggest an increase in leverage of 3.6% of firms headquartered in states adopting the alcohol mandate relative to those in states that did not adopt this mandate. These estimates imply that the adoption of alcohol mandate has a similar relation with total leverage as increasing the share of tangible assets by 24%. In addition, we also compute that the present value of incremental tax shields associated with an additional leverage of 3.6 percentage points to be $2 million. These results are robust to a battery of tests where we control for firm fixed effects, year fixed effects, and other firm financial characteristics known to affect capital structure decisions of firms. In addition, we control for numerous state-level variables to ensure that economic and political conditions do not spuriously drive our results. We also show that our results are robust to the inclusion of industry-year fixed effects Gormley and Matsa (2014), alternative measures of leverage, such as leverage net of cash holdings and falsification tests.

The key identifying assumption central to a causal interpretation of our results is that, in the

absence of the treatment, the average change in leverage ratios would have been the same for both treatment and control firms. We argue that several features of the adoption of state health mandates and results from a variety of robustness tests suggest that this parallel trends assumption is satisfied. First, the key economic argument for adoption of mandates is the resolution of the adverse selection problem (Lahey, 2012): only those individuals who expect to utilize a particular health care service are willing to pay for insurance that covers this service which leads to a cycle of increasing premiums and a smaller, and less healthy, pool of beneficiaries. However, mandate critics argue that these regulations unduly increase labor costs, contribute to the overall rise in health care costs and may serve political interests of state legislators (Litow, 2002). Consistent with this, we find that, out of a large set of economic and political variables that potentially affect whether a state adopts alcohol mandate, almost none of them are correlated with the timing of the mandate's adoption, except for alcohol consumption per capita in the state. Second, due to the staggered adoption of the alcohol treatment mandate, firms can be in both treatment and control group at different times, which helps alleviate concerns about differences between treatment and control firms. Third, we find that firms respond by changing their debt ratios only after the adoption of the alcohol mandate thus alleviating any concerns of reverse causality. Finally, we rule out any concerns of other state-level factors affecting leverage by controlling for state-specific time trends in leverage.

Further, we present evidence in support of a causal effect of adoption of state health mandates, using a geographic regression discontinuity design where we only focus on firms located in counties adjacent to state borders. We include county-pair-year fixed effects to control for unobserved common shocks, say investment opportunities, that may affect both treatment and control firms in a common geographic region over the sample period. Our results are robust to matching states based on pre-adoption levels of alcohol consumption, other labor laws and controlling for industry-year fixed effects. In addition, we employ propensity score matching to control for differences in firm characteristics between treated and control firms . Thus, we rule out concerns that our estimates are biased by unobserved heterogeneity.

We perform a number of cross-section analyses which shed light on the underlying mechanisms and also allows us to control for confounding factors at the state-year level which might drive our results. Collectively, these results indicate that our findings are best explained through the channel of lower operating costs and greater labor productivity on corporate financing choices.

First, we show that the relation between alcohol mandate adoption and leverage is particularly stark for the sub-sample of workers employed at firms which see a greater increase in insurance costs related to alcohol abuse treatment. We find that this relation is more pronounced for firms in state which had high levels of alcohol consumption before the adoption of the mandate. Second, we show that industries with higher labor mobility within a state benefit the most by raising their leverage.[7] Firms with fewer workers typically face a high cost of insurance and workers in such firms face higher job-lock due to constraints in the labor market (Gruber, 1994a). Consistent with this, we show that this relation is stronger for firms with fewer employees and also when firms with fewer employees are surrounded by large firms (a proxy for geographic mobility of workers). [8]

Next, we find a stronger relation between alcohol mandate adoption and leverage among firms that face tighter financing constraints, as measured by firm size, firm age, size-age index and the absence of profitability. Tight financing constraints make it difficult for firms to raise capital if they have lower labor flexibility which leading to inefficient matching between firms and workers and consequently to lower profitability. Thus, workers in these firms are more likely to face a 'job-lock' and any changes in bargaining power allow such firms to raise their debt ratios.

Our findings are consistent with higher bargaining power affecting debt ratios by lowering worker wages and improved labor productivity within firms. We present two pieces of evidence in support of this. First, we show that after the adoption of alcohol mandate, firms on average lower wages and reduce employment levels. Second, we also find supporting evidence of lower operating leverage measured as sensitivity of changes in earnings to changes in sales (i.e., degree of operating leverage) and lower operating costs following the adoption of alcohol mandate. Furthermore, we find that an average firm raises its productivity after the adoption of alcohol mandate (measured as total factor productivity in İmrohoroğlu and Tüzel (2014).)

We also test a number of implications of alternative hypotheses and provide evidence inconsistent with other explanations of our main results. One possibility is that higher health insurance costs impacts the ability of unionized workers to bargain with the management for higher wages, and in response, firms choose aggressive financial policies to strengthen their bargaining

[7] A large literature has shown that labor mobility presents a risk to the firm (Donangelo, 2014; Mauer and Triantis, 1994).

[8] These tests try to capture outside option for a worker to purchase another employer-sponsored insurance if they switch jobs. The underlying assumption is that larger firms provide better coverage while smaller firms do not due economies of scale and risk pooling among workers.

position. We find, however, that the relation between alcohol mandate adoption and financial policies is just as strong for firms with low union coverage. Further, we rule out concerns of other contemporaneous law changes might be driving our results.

Ours is the first paper that explicitly analyzes the relation between health insurance and capital structure. The central contribution of the paper is to provide novel empirical evidence that shifts in intrafirm bargaining through health insurance significantly impacts firms' corporate financial policies. We document that firms raise financial leverage after increase in health insurance are more flexible by lowering operating costs and raising productivity. Our evidence complements prior work but documents that more flexible labor markets crowd in financial leverage by lowering operating leverage.[9]

Our findings are consistent with health insurance provision having a positive impact on labor supply decisions of the individual which leads to an increase in their overall productivity. In doing so, we also document a novel channel wherein the benefits from lock-in manifest through its effect on labor supply decisions resulting in overall enhanced productivity of workers.

This paper also adds to a growing literature that analyzes the interactions between labor costs and firm policies. Our paper is related to recent work on how labor market frictions affect debt ratios (Matsa, 2010; Agrawal and Matsa, 2013; Simintzi, Vig, and Volpin, 2014). These studies show that debt ratios depend on labor unions' bargaining power, employee unemployment risk, and the rigidity of labor costs. Since labor costs are significant fraction of firm's total costs, we document that such costs affect capital structure through cost-related mechanisms. Lastly, we add to the literature examining the determinants of capital structure decisions (Titman and Wessels, 1988; Rajan and Zingales, 1995; Lemmon, Roberts, and Zender, 2008; Frank and Goyal, 2009).

The rest of the paper is organized as follows. We discuss the high cost state mandates in Section 2. We describe our data and empirical methodology in Section 3, we discuss empirical results in Section 4 and conclude in Section 5.

2 State High cost Mandates

In the US most employment-based benefits, such as pensions and health insurance, are provided voluntarily by businesses. The restriction of health insurance purchase to the workplace setting

[9]For prior work, see Serfling (2016) for US and Simintzi, Vig, and Volpin (2014) for cross-country evidence

has potentially quite important implications for the functioning of the US labor market.[10] Rapid growth in commercial insurance companies who "experience rated" their customers, charging firms based on their actual (projected and past) cost experience, increased dispersion in the cost of health insurance across firms (Cutler, 1994). The dispersion in health insurance premiums appears to be much greater for small firms that for larger ones, which is consistent with greater adverse selection problems in the small group market. Therefore, especially small firms keep their labour cost low by providing insurance contracts that do not cover expensive medical services.

In 1970s, the rising number of uninsured was the important reason for introduction of state health mandates. In the US, since the 1940s, states have regulated the generosity and scope of private health insurance coverage through the implementation of 'mandates'. State governments have been relying on conventional mandates to regulate the terms of coverage in the plans sold by private insurers for over four decades. These laws initially consisted of mandatory-inclusion provisions. If insurance was sold in the state, it had to include coverage for the legislated provider type, service, or subscriber cohort. Thus, a broad mandate to workers would potentially go a long way towards eradicating the problem of uninsurance. Moreover, in the era of tight fiscal budget constraints, an "off-budget" approach such as a mandate was politically appealing (**?**).

Mandates typically stipulate coverage for specific treatments (e.g., alcohol treatment), providers (e.g., chiropractors), and population categories (e.g., dependents) within the private market (Morrisey, 2014). In 1965, the beginning of our sample period, there were a handful of state health mandates, by 1990 the number increased to almost 1000. In 2012, there were more than 2000 state health mandates (Laudicina, Gardner, and Holland, 2013) (see Figure 1 and Figure 2).[11] The state health mandates increase the health insurance premiums that employers pay for employees (Gruber, 1994b; Bailey and Blascak, 2016). But at the same time now employees are better covered and value current employment more. The higher cost of health insurance and worker inability to find a new job with equal benefits creates a situation of 'job-lock'.[12] Therefore, firms can bargain

[10]Tax deductibility of employer insurance purchases is one of the important reason for employer-sponsored health insurance. Employer payments for insurance are not treated as taxable income to employees, unlike wages, which are taxed by both the OASDI payroll tax, and state and federal income taxes. Gruber and Poterba (1996) estimate that relative price of insurance at the workplace is 27% lower as a result of this tax subsidy.

[11]With Affordable Care Act, effective October 1, 2013, all policies sold in Exchanges and in the small group and individual markets require to offer federal "essential health benefits".

[12]A large literature in health economics documents health insurance-induced reductions in worker mobility (Culyer and Newhouse, 2000). Individual insurance generally costs at least 50% more than the group policies (Gruber and Madrian, 1994). The tax deductibility of employer insurance purchases makes it even more attractive for workers to enroll for employer-sponsored health insurance. Gruber and Poterba (1996) estimate that relative price of insurance at

for lower wages which lowers its labour costs. This allows firms to raise financial leverage and capture a greater share of debt tax shields and other benefits associated with debt financing.

It is important to note that this type of lock arises from any employee benefit where there is differential valuation across workers, differential costs of provision across employers, and the inability to set worker-specific compensation packages (i.e. workplace safety, or location of the firm). The key insight is that in this situation, a firm cannot offer the benefit just to the marginal worker that it wishes to attract, leading to job-specific rents and job-lock. In practice, however, this effect is likely to be largest for health insurance, since both the variation in valuation across workers and the variation in costs of provision across firms are much higher than for other workplace amenities.

In this study we focus on five state health mandates: alcohol abuse treatment, illicit drug abuse treatment, mental health treatment, chiropractors, and continuing coverage for terminated employees and their dependents. Internet Appendix, Table A1 reports the effective date for each of the high cost mandates through 1989. During our study period, 25 states implemented an alcohol treatment mandate, 15 states implemented an illicit drug treatment mandate, 11 states implemented a mental health treatment mandate, 27 states implemented a chiropractor mandate, and 30 states implemented a continuing coverage mandate (Figure 3).

During our study period, health insurance mandates accounted for over 30% of employers' health insurance costs, with these specific mandates generating over 50% of these costs (Gruber, 1994b). As per Milliman & Robertson, the actuarial firm, in 1997, mandate-free, basic health insurance policy costs a family about $3,500 a year. The estimated range of additional costs of each mandate was: alcohol abuse treatment ($35-$105), illicit drug abuse treatment(<$35), mental health treatment($175-$350), chiropractors ($35-$105).[13] For a median firm in our sample, we estimate that the adoption of these mandates reduces the operating profits by 4.4%.[14]

These mandates have two effects for workers, namely price effect and coverage effect. The higher price of insurance with adoption of mandates, increases the worker's dependence on employment–based group insurance, thereby reduce the mobility outside work within same state.

the workplace is 27% lower as a result of this tax subsidy. **?**) finds persistence of the job-lock effect, despite two major policy interventions designed to mitigate it (COBRA and HIPAA).

[13]We do not observe the cost estimates of continuing coverage mandate, but **?**) document passage of this mandate significantly increase the probability that large firms converts to self-insurance and avoid these costs. Also, **?**) document that for a family coverage inclusion of substance abuse mandate (alcohol and drug) increase the costs by 8%.

[14]In 2000 dollars, the expected cost of these mandates is about $646.7 per employee, with 1021 employees for median firm, the annual cost increase is about $659,566. The operating income before deprecation for median firm in 2000 dollars is $16.1 million. So, additional cost is about 4.4% of operating profits.

The coverage effect, on the other hand, may reduce worker mobility out of state. While, within state mobility across different firms may vary based on employer type. Large firms, based on number of employees, may try to avoid these state mandates by self-insurance.[15] It is also possible that large firms may already be providing all such insurance benefits. Therefore, employees of large firms may not be affected by mandates, while employees of small firms may observe job-lock. Therefore, small firms, on the one hand may observe higher worker health insurance costs (*Insurance Cost Effect*), but on the other hand, may benefit with lower turnover of existing employees (*Wage Effect*).[16]

On caveat of this study is that we can only document the net-effect of these two opposite effects. In the absence of mandates, firms find it costly to provide worker-specific benefits and the inability to set worker-specific compensation packages may stop firms to realize the benefits from worker's job-lock. The increase in cost of insurance for firms are lower compared to a situation where firms may want to provide worker-specific benefits in the absence of mandates. So, the net-effect is based on the increase in cost of insurance with mandates and the benefits that the firms can realize from job-lock among workers.

The literature examining the effects of mandates on health insurance and labor market outcomes finds evidence in favour of increased bargaining power of firms through 'job-lock' among workers. The first question is do firms opt out of Employer Sponsored Insurance (ESI) with passage of state health mandates. Madrian (1994) finds diminished job mobility and reduced voluntary turnover rates for those with employer-provided health insurance. Gruber (1994b) and Antwi and Maclean (2017) find no evidence that mandates impact employers' propensity to offer ESI. In terms of effect on labour market outcomes, Cutler and Madrian (1998) document the number of state mandates increase average hours worked, suggesting that due to the increased cost per employee, employers opt to extract more work time from current employees rather than hiring new employees. Also, Cseh (2008) studies the impact of state mental health mandates on labor market outcomes and finds that these mandates reduce wages, suggesting that employees value the mandated benefit. While Antwi and Maclean (2017) finds that employers adjust both wages and labor demand to offset mandate costs, suggesting that employees place some value on the mandated benefits. Additionally, they document these effects to be persistent but not per-

[15] Under the 1974 Employee Retirement Income Security Act (ERISA), self-insured plans are not subject to state regulation.

[16] Gruber (1994b); Antwi and Maclean (2017) do not find evidence for self-insurance by small- or medium-sized firms

manent with heterogeneity across worker types. We discuss more on employer-sponsored health insurance and job-lock induced by health insurance in Internet Appendix A1. In this paper, we document how these high cost mandates impact corporate policies by affecting the worker's mobility and thereby firms' bargaining power.

3 Data and Empirical Methodology

3.1 Sample Selection

We consider a sample of firms over the period 1966 to 1993 extracted from Compustat. Our main sample includes 83,767 firm-year observations (excludes utilities, financial, retail and wholesale firms) with publicly traded stock and incorporated in the United States.[17] The sample period ends five years after the last high-cost mandate was passed in 1988. We select this year as the cutoff for three main reasons. First, the adoption of mandates by states is constant after this year. Second, in 1993, the Clinton administration introduced a health-care reform package which initiated a heated debate around enforced mandate for employers. Last, there were significant regulations that were introduced in the 1990's which may create noise in identifying the effect of mandate adoption on capital structures.[18]

3.2 Empirical Methodology

To examine the effect of high-cost mandate adoption on firms' financial policies, we adopt a difference-in-differences research design. Specifically, we estimate a model of the following form for firm i in year t:

$$Debt_{ist} = \alpha_1 Pre_{st} + \alpha_2 Alcohol^0_{st} + \alpha_3 Post_{st} + \kappa X_{ist} + \nu_i + \omega_{jt} + \epsilon_{ist} \quad (1)$$

subscripts i,j,s,t refer to firm, industry, state and year respectively. Pre_{st} is an indicator variable

[17] We begin in 1966 owing to data limitations. Specifically, the book value of common shareholder equity (Compustat data item CEQ) is sparsely populated until 1962. In similar vein, data on state-level GDP from Bureau of Economic Analysis is unavailable until 1963.

[18] Our identification relies on the state in which the employer is headquartered while insurance benefits primarily accrue to labor force in the state in which they work. Thus, any disconnect could potentially attenuate our estimates if some of a firm's workers are located in a state different from the state of employer's headquarters. To address this issue, we exclude firms in industries in which a large percentage of the workforce is likely geographically dispersed namely retail and wholesale (Agrawal and Matsa, 2013). Also, most of the workers in these industries are hired on temporary basis and therefore may not receive health benefits from their employer.

set to one if a firm will adopt the alcohol mandate in two (or more) year(s) and zero otherwise. Alcohol^0 is an indicator variable set to one if a firm is headquartered in a state that adopts the alcohol mandate in the current year and zero otherwise. $Post_{st}$ is an indicator variable set to one if a firm is headquartered in a state that adopted this mandate one (or more) year(s) ago and zero otherwise.[19] We include all firms even those that do not help to identify α_k i.e. firms in states not affected by the high-cost mandate adoption - because they help to identify the secular trends in firms' leverage policies. The model is fully saturated with the preceding year of adoption as the excluded category. The inclusion of firm fixed effects, ν_i, ensures that each dummy variable is estimated using only within firm variation in the dependent variable, and industry-year fixed effects, ω_{jt}, control for time-varying industry heterogeneity.

We also include a full set of control variables (X_{ist}) in our regressions. Inclusion of control variables improves the efficiency of the estimates. These variables are commonly found in leverage regressions (Harris and Raviv, 1991; Rajan and Zingales, 1998; Eckbo, 2011; Frank and Goyal, 2009; Lemmon, Roberts, and Zender, 2008). The control variables include Firm size, Market-to-Book (proxy for growth opportunities), Profitability, Debt Rating, Fixed Assets (proxy for potential collateral), Dividend Payer (proxy for financial constraints). Recent work highlights the role of labor market frictions in affecting leverage decisions (Matsa, 2010; Agrawal and Matsa, 2013), hence we control for Modified Z-Score (proxy for probability of being bankrupt). In addition, we also control for state-level political and economic conditions which might affect firms' leverage choices. These controls include Log(State Per Capita GDP), State GDP Growth, and Political Balance (fraction of Democrats in the House of Representatives in any given year).

Table B1 provides details on variable definitions. Table A2 presents the summary statistics for our sample firms. For our sample of firms, the average leverage ratio is 25.7%. All the nominal values are deflated using Consumer Price Index (CPI) values at 2000 constant dollars. To mitigate the effect of outliers, we winsorise all the ratios at 1% tails of their empirical distributions. Standard errors are corrected for heteroscedasticity and auto-correlation. They are clustered at state-level to account for correlations within states (Bertrand, Duflo, and Mullainathan, 2004).

[19] We understand that firms employees are dispersed across states based on their operation. We do various tests to ensure that our results are robust to this assumption and discuss in detail in section 4.10.2

4 Main Results

4.1 High-cost mandate adoption and Worker Mobility

We begin by examining the impact of adoption of state private health insurance mandates on the mobility of individuals. Our sample comes from the Census' Survey of Income and Program Participation and spans the period 1983 to 1993. It includes individuals who are 18+ years old and observed at least five times during the sample period. We only include individuals who receive their health insurance from employer. We exclude individuals who may receive their health insurance from spouse's employer, Medicare, Medicaid or other state-sponsored insurance programs. The binary indicator that identify job switches take a value of one if the individual has left her employer recorded in the preceding survey period to join a new employer or become self-employed in the current survey period (survey periods are four months apart in the vast majority of cases, but the time between surveys varies between one and twenty-four months), and zero otherwise. Here, we include individual fixed effects and year-quarter fixed effects.

Table 1 reports results from linear probability models that estimate the impact of adoption of state private health insurance mandates on the mobility of individuals. Column 1, we include only high-cost mandates as independent variable. *High-cost mandates* is defined as sum of individual high-cost mandate dummies i.e., sum of Alcohol abuse treatment (*Alcohol mandate dummy*), Mental health treatment (*Mental health mandate dummy*), Chiropractors (*Chiropractor mandate dummy*), Continuing coverage for terminated employees and their dependents (*Continuing coverage mandate dummy*), and Illicit drug abuse treatment (*Illicit drug mandate dummy*). We find that the adoption of high-cost mandates significantly reduces job mobility among workers. In Column 2, we examine the effect of each mandate separately. We find that the adoption of alcohol abuse treatment mandate is associated with an decrease in job turnover. Our estimates imply a reduction in turnover of 1.6% (which is 33% relative to the mean). In Column 3, we control for individual characteristics that may effect job-turnover like individual age and income. In Column 4 we control for state-level economic variables and political balance. Inclusion of these controls do not effect the results.

In Column 5, we test if these mandates have any differential effect on employees in more mobile industries. Mobility is an index which captures occupation dispersion within each three-digit SIC industry and serves as the proxy for labor mobility (Donangelo (2014)). The measure spans 1990 to 2011. We create a single measure that is used for the entire sample period by

averaging this labor mobility measure.

We find that results are stronger for individuals working in industries with greater mobility, measured as inverse of occupation dispersion within an industry. Here, we also control for state-year-quarter fixed effects. This ensures that our results come from treatment group and are not be driven by local economic conditions within the state. We note that among the high-cost mandates, the effect on mobility persists only for 'alcohol abuse treatment mandate'. The mismatch between the demand for and supply of alcohol treatment services may have led to greater importance of alcohol mandate compared to other mandates.

In addition, we show that (in Table A3) the adoption of alcohol abuse treatment mandate is associated with an increase in labor supply by workers. The number of hours worked increase after the adoption of alcohol mandate. This is consistent with Antwi and Maclean (2017). We discuss the implications of labor supply decisions on wages in section 4.9.2. Overall we find that adoption of high-cost health mandates, especially alcohol abuse treatment significantly effects worker mobility.

4.1.1 Why Alcohol Abuse Mandate?

It is important to understand among the high-cost mandates why employees value the 'alcohol treatment mandate' the most. In general, the demand for health care services was at its peak during our sample period. In the 1970s, the price for healthcare services was increasing rapidly. From 1974–1982, the national health expenditure increased by 13.9%. Price growth (annually) for personal heath care services was almost 9.7%, historically the highest in last 60 years. Also, Americans share of insurance was also declining in the 1970s.[20] The higher price for alcohol treatment and mismatch between supply and demand for alcohol treatment services may be important reasons, as to why employees may value alcohol treatment coverage. The cost of treatment in general may vary based on length of stay and type of problem. For example, alcohol abuse may cost $2,897 per stay for 9.9 days treatment while chronic liver disease and cirrhosis treatment costs $7,365 for 11.5 days stay. In terms of financing, until early 1970s, state and local governments finance the alcohol treatment cases as part of mental health, public health, and criminal justice programs.[21] The lack of state-of-the-art facilities and funding problems in

[20] See: http://healthaffairs.oilyqzi36akjprmk.netdna-cdn.com/wp-content/uploads/Table1v3.jpg
Also see:http://hotair.com/greenroom/archives/2010/03/24/health-care-yep-it-was-all-about-the-1970s

[21] This could be another reason why firm's may not have realized the benefit of providing alcohol abuse treatment benefit.

community hospital required a shift in funding source for alcohol treatment. While at the same time, the demand of alcohol treatment services increased significantly. As per the gallup survey, in 1970s, 68% to 71% of the Americans indicate that they occasionally drink alcoholic beverages.[22]

In the mid-1970s, alcohol was a factor in over 60% of traffic fatalities. In the meanwhile, increasing alcohol consumption led to various efforts by federal government.[23] In 1971, the Uniform Alcoholism and Intoxication Treatment Act was designed to provide states with the legal framework within which to approach alcoholism and public intoxication from a health standpoint. In addition, Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation Act were enacted in 1970. Under the Act, NIAAA (National Institute of Alcohol Abuse and Alcoholism) was established and has led the effort to reframe alcohol abuse as a medical rather than a moral issue, and to study issues relating to alcohol and health systematically, through evidence-based findings. As per NIAAA, during our sample period about 9 million people (around 5% of total population) were addicted to alcohol. The higher cost for treatment has further increased the importance of alcohol treatment coverage. Taken together, from the evidence above we gather the importance of health insurance to workers and especially alcohol treatment during our study period.

Henceforth, in our analyses, we limit our examination to the adoption of alcohol mandate while controlling for contemporaneous adoption of other state-level mandates.

4.2 Alcohol mandate and Financial Leverage

As a first step, we examine the specific impact of alcohol mandate adoption on firms' financial policies. In order to understand the effects, we exploit the significant geographical dispersion in alcohol mandate adoption across different states for our sample firms (See Figure 4). First, we are able to exploit variation in alcohol mandate adoption across states and years. Thus, for any change in alcohol mandate adoption in state s at time t, the potential control states are all those states that didn't yet adopt the mandate by that time. Second, we are able control for time-varying state and firm-level factors that might be correlated with alcohol mandate adoption and firms' debt policies. In addition, including industry-year fixed effects allows us to difference away any unobserved within industry variation in any year. We also control for all other mandated benefits as the cumulative sum of other health insurance mandates adopted in a state in any year.

[22]See:http://www.gallup.com/poll/3400/longterm-gallup-poll-trends-portrait-american-public-opinion.aspx
[23]https://pubs.niaaa.nih.gov/publications/social/module1epidemiology/module1.html

Our main dependent variable of interest is *Book Leverage* as managers tend to focus on book leverage rather than market leverage when making capital structure decisions (Graham and Harvey, 2002). In addition, changes in market leverage are driven by substantial variation in market value of equity rather than changes in debt policies (Welch, 2004). All of our results are robust to using either measures of leverage.

Table 2 Panel A presents results on book leverage in a multivariate framework. Column 1 includes firm and year fixed effects and also control for all other mandates. We find that coefficient for alcohol abuse treatment mandate is statistically significant and exhibit a positive relationship with leverage. The estimated coefficient implies that book leverage increases by 1 percentage points following the mandate adoption. This represents a 4% increase in leverage relative to the sample mean of 25.7%. We drop all controls, to allay concerns that some of our control variables are choice variables for individual firms.

Column 2 further controls for firm-specific predictors of leverage. Inclusion of firm-level variables improves the statistical significance and the economic magnitude is a bit small i.e., 0.8 percentage points. The sign on coefficient estimates of control variables are consistent with prior literature (Frank and Goyal, 2009). We find that leverage is positively associated with Tangibility, Debt Rating, and Firm size while negatively associated with Market-to-Book ratio, Dividend Payer dummy, and modified-Altman's z-score. The magnitude of the coefficient estimates imply that the effect of mandate adoption on financial leverage is economically meaningful. As a benchmark, we compare the coefficient on alcohol adoption to other financial control variables (which are omitted for brevity). The estimates imply the adoption of alcohol mandate has a similar relation with total leverage as increasing the share of tangible assets by 24%.

Column 3 controls for political and economic variables and their inclusion does not affect our estimates. Given the importance of Industry in firm-level financial decisions (MacKay and Phillips, 2005; Bradley, Jarrell, and Kim, 1984), in column 4, we use firm and industry-year fixed effects specification. Using industry-year fixed effects allows us to difference away unobserved time-varying shocks for treated and control firms within the same industry. We find average change in book leverage after the adoption of alcohol mandates is 0.6 percentage points, compared to the control group. The results are statistically significant at 5% level. Table 2 Panel B report the results for market leverage. We find consistent results.

In Internet Appendix Table A4, we find that leverage results come only from long term leverage. Subsequently in Table A5 we document results for alternative measures of leverage. Our

results are robust to various other measures of leverage i.e., (a) the natural logarithm of one plus the total value of debt, to circumvent the issue of observed increase driven by change in assets, (b) *Net Book/Market Leverage* (debt less cash) to account for changes in liquid assets of firms in response to mandate adoption and (c) adding commitments from operating leases to capture a firm's true degree of financial leverage (Eisfeldt and Rampini, 2009; Rauh and Sufi, 2012).

Overall, we find that firms increase leverage in response to adoption of alcohol abuse treatment.

4.3 Timing of Capital Structure Changes

Next, we estimate a difference-in-difference specification as in equation 1 to rule out concerns about reverse causality. In particular, if reverse causality is an issue, then we must observe pre-trends in leverage decisions of firms. We present results from the estimation in Table 3.

In Columns 1 and 2, we report results with book leverage as dependent variable. In Column 1, we use firm and year fixed effects to control for time-invariant effects while we additionally include time-varying firm-specific and state-specific control variables. In Column 2, we present results when we control for three digit industry-year fixed effects. First, we observe the coefficient on Pre_{st}^{-2} is insignificant. The absence of pre-trends in leverage policies of firms validates the key identifying assumption of our research design and bolsters confidence on the methodology. We find the $Post_{st}^{1+}$ is positive and significant. In Columns 3-4, we report results for market leverage. We find consistent results. Overall, we find that our results are robust to alternative definitions of leverage and that firms' financial policies do not exhibit any pre-trends.

4.4 Placebo Tests

Next, we employ placebo test to check whether the firms increase financial leverage in response to *false* alcohol mandate adoptions across U.S states. To do so, we repeat the estimation in Equation 1 using pseudo alcohol mandate adoptions.[24] Specifically, we simulate fictitious mandate adoptions where we randomly draw a state, and assign a random year as the year of placebo adoption. We repeat the estimation 2000 times. In each of the pseudo samples we then run our baseline regression as in Table 3, column 1. This allows us to create an empirical distribution of

[24] A major concern in DD analyses is over-rejection of null hypotheses due to serial correlation biasing standard errors(Bertrand, Duflo, and Mullainathan, 2004). Hence, the non-parametric test employed here addresses any such concern.

"treatment effects" when a treatment is fictitious by exhausting all possible scenarios.[25] We define the empirical distribution to be $G(\hat{\alpha_2})$ which then gives us a p-value for the hypothesis that α_2=0. Intuitively, if we expect that alcohol mandate adoption positively affects financial leverage, we would expect the estimated coefficient to be in the right tail of the distribution of estimated placebo effects. Since this test doesn't make any assumption on the structure of standard errors, it doesn't suffer from the over-rejection bias of the t-test.

Figure 5 illustrates the results from our simulated placebo effects. In each of the pseudo samples we run our baseline regression as in Table 3, column 1 and save the relevant coefficients. The vertical red line embedded in the graph represents the actual regression coefficient (α_2) based on the actual data (column 1 of Table 3). The sample period runs from 1966 to 1993 and the standard errors are clustered by state. From the plot, it is evident that the coefficient estimate on α_2 in the placebo sample lies in the tails of the distribution (p-value<0.05). Therefore, the positive effect of mandate adoption is not driven by any unobservable state-level or time factors.

4.5 Predictability of Alcohol mandate adoption

In this subsection, we explore whether pre-existing firm-level and state-level variables affect the cross-state timing of alcohol mandate adoption. We follow Beck, Levine, and Levkov (2010) and estimate a hazard model where a failure event represents alcohol mandate adoption. Table 4 presents the results. The sample period spans the period 1966 to 1993 and excludes the states once they adopt the mandate. Column 1 include the following state-level explanatory variables, which are calculated each year: all other mandates, the percentage change in the states' fraction of unionized workers, GSP per capita, Real GSP growth, and the fraction of a state's Congress members in the US House of Representatives that belong to the Democratic Party. None of these variables predict the timing of adoption of alcohol mandate. In Column 2 we include ethanol consumption per capita.[26] We find that alcohol consumption is negative and significantly related

[25]In our case the placebo adoption can be produced from a random combination of (a) any one of the 50 states; and (b) any one of the 18 years (1971 to 1988). The pre-treatment period is 5 years long, and our sample period starts only after 1965; thus, the placebo adoption can only take place in or after 1970. Similarly, as the sample period ends in 1993, the last year possible for a placebo deregulation with a five-year post-treatment period has to be 1988.Therefore, the total number of possible combinations is 900 (50 x 18).

[26]Union membership is the fraction of each state's nonagricultural wage and salary employees who are covered by a collective bargaining agreement. Data on state union membership are from (Hirsch, Macpherson, and Vroman, 2001) and are available online at http://www.unionstats.com. The data on state-level GDP is from the Bureau of Economic Analysis and data on Congress members in the House of Representatives from the History, Art & Archives, U.S. House of Representatives. Data on alcohol consumption for each state is retrieved from National Institute on Alcohol Abuse and Alcoholism at https://pubs.niaaa.nih.gov/publications/surveillance104/pcyr19702014.txt .

to adoption of mandates i.e., high alcohol consumption states find it hard to impose the insurance costs on firms.

In Column 3, we include firm-level explanatory variables, which are calculated as averages across the years before adoption of the alcohol mandate. We find that these variables do not predict the adoption of alcohol mandate.

Column 4 includes a measure of state-level financial leverage (measured as the sales-based weighted average of book leverage per state-year) and shows that alcohol mandate adoption is unrelated to this measure. This evidence is consistent with earlier tables which show no pre-existing trends in financial policies of firms and hence rules out concerns about reverse causality.

In Columns 5 and 6, we test if state-level corporate tax policies or lowering minimum purchase age of alcohol affects the adoption of state health mandates. We do not find that these variables predict the timing of alcohol mandate adoption. These findings are suggestive that certain political and economic factors didn't significantly influence the adoption of these mandates and any such mandate adoption is orthogonal to firm policies.

4.6 Potential Confound: Local economic conditions

Analyses from previous subsections inform us that firms significantly increase their leverage in response to alcohol mandate adoption by states. Our tests rule out concerns about reverse causality and use of industry-year fixed effects ensures that the results are not driven by time-varying industry shocks to leverage trends. In addition, inclusion of firm fixed effects and firm-level control variables such profitability, tangibility, market-to-book ratio eliminate concerns about firm-level time-varying and time-invariant factors that could affect firms' debt policies.

However, two plausible concerns remain to identify the causal effect of mandate adoption. Primary challenge is to rule out any omitted factor which drives mandate adoption and firm level changes in leverage. Second challenge is any other coincidental state-level policy change that is responsible for any such leverage adjustment. In this subsection, we deal with local economic conditions as a possible mechanism through which firms' debt policies might be affected while we rule out concerns of any coincidental law changes driving our results in subsection 4.10.1.

Changes in local economic conditions might affect the propensity of different states to adopt alcohol mandate. To the extent that a local economic shock affects firms' financial policies, part or all of the observed increase in leverage may reflect the effect of any such local shock rather

than mandate adoption. In our basic specification, we already control for any state-level economic or political factors that might be driving the leverage decisions of firms. Thus, any other confounding effect must be orthogonal to such state-level controls.

To alleviate such concerns that leverage policies may be driven by local economic conditions, we exploit the geographical richness of our data. Our strategy relies on exploiting similar economic conditions *across* neighbouring counties. This allows us to difference away any unobserved confounds affecting both the treated state and its neighbours. Hence, by comparing treated firms across neighbouring counties, we remove effects of local economic conditions on leverage thus ensuring parallel trends in firms' leverage. Figure 6 presents the county-pair matches for our sample. We describe construction of border county match procedure in Appendix B1. Visual inspection suggests significant geographical variation in the county-pairs in our sample.

Figure 7 presents graphical relation between alcohol mandate adoption and financial leverage. To create this figure, we regress book leverage (or market leverage) on firm fixed effects, county-pair year fixed effects, industry-year fixed effects and dummy variables indicating the year relative to the adoption. We also control for all other mandates as well. We create dummies for up to 5 years before and after its adoption. The last variable is set to one if it has been 5 or more years after the adoption of this mandate and zero otherwise. The x-axis shows the time relative to the adoption of the alcohol mandate. The shaded area corresponds to the 95% confidence intervals of the coefficient estimates. Confidence intervals are calculated from standard errors clustered by state. Both the graphs show that leverage was statistically similar for treated and control firms in the years before the alcohol mandate adoption while there is a substantial increase in leverage for treated firms in the years after the mandate adoption.

Next, we estimate the specification as in equation 1 for our matched sample and report results in Table 5. In all our regressions, we include firm fixed effects, county-pair-year fixed effects and industry-year fixed effects. Inclusion of county-pair-year fixed effects control for unobserved common shocks, say investment opportunities, that may affect both treatment and control firms in a common geographic region over the sample period. Our results are robust to matching states based on pre-adoption levels of alcohol consumption, other labor laws and controlling for industry-year fixed effects. This allows us to difference away concerns such as different investment opportunities for firms within a local economic region. However, requiring neighboring firms to operate in the same local economic region reduces the sample size significantly.

Table 5, Panel A report results for Book Leverage as dependent variable. In column 1, we

find that relative to control firms just on the other side of the state border, treated firms increase their leverage by an average of 3.1 percentage points after the alcohol abuse mandate adoption. This is equivalent to 12.5% increase compare to sample average. We control for all other mandates but drop all other controls, to allay concerns that some of our control variables are choice variables for individual firms. Next, we add industry-year fixed effects to control for industry-level unobserved heterogenity. Column 2 report the results. The results are robust to inclusion of industry-year fixed effects. In column 3, we include a full set of firm-level and state-level controls. These tests rule out concerns of local economic shocks driving leverage.

Another plausible concern relates to differences among states along other dimensions such as regulations which affect firms' financial choice. To address this concern, we match on geographic regions based on other policies. In column 4, we match counties based on pre-adoption levels of alcohol consumption in bordering states while in column 5, we match based on pre-existing labor laws. Results from these matching mirror those established in earlier columns. The economic magnitude of increase in leverage is lower than estimates reported in columns 1 to 3. Table 5, Panel B report results for Market Leverage as dependent variable, we find consistent results.

Overall, we have two main takeaways from this analyses. First, there are no pre-existing trends in leverage choices of firms. Second, the point estimate in the contiguous-border-counties tests are larger than in our baseline model.

4.7 Propensity Score Matching

In this sub-section we control for unobserved heterogeneity based on firm characteristics. As we notice in Table A2, Panel B, the treatment and control group in our sample are different based on observed characteristics. We create two matched samples by matching treatment firms to control firms using a propensity score methodology.

We start by retaining all observations for treatment and control firms in year t–1 relative to the adoption of the alcohol mandate. For the first match, we estimate propensity scores using Log Assets, Profitability, Fixed Assets, and Market-to-Book. For the second match, we also include Modified Z-Score and Divided Payer as a regressors. For both matches, we match each treatment firm in year t-1 to a control firm (with replacement), matching on year, three-digit SIC industry, and closest propensity score. For the second match, we include additional variables Modified Z-Score and Divided Payer. We require treatment firms to have one control firm match and retain

the control firm with the closest propensity score in case of multiple matches.

Table 6, Panel A tabulates the means of the matched variables and propensity scores for the treatment and control groups in year t-1 (the control variables are not statistically different across groups at the 10% significance level). Table 6, Panel B presents the results examining the impact of the adoption of alcohol treatment mandate on firms' leverage in columns 1 to 4. Post is an indicator variable set to one in the five years after the adoption of this mandate (same for matched control firms). In Column 1, we find that for matched sample, treated firms increase their book leverage by an average of 1.1 percentage points after the alcohol abuse mandate adoption, compared to the control group. The results are robust for both type of matched samples and using market leverage as a dependent variable.

4.8 Cross-Sectional Tests

Next, we examine differential response of firms by exploiting cross-sectional variation within state, industry and firm characteristics. These tests are meant to inform on heterogeneity of treatment effects and hence provide support for the underlying mechanisms. In addition, industry and firm tests allow us to control for unobserved differences between treated firms within the same states that adopt the alcohol mandate.

4.8.1 Alcohol Consumption and Minimum Purchase Age for Alcohol

The first set of cross-section is based on state-level alcohol consumption. Firms operating in states with high alcohol consumption are more likely to pay higher insurance cost for their employees and hence the value to the employees is significantly higher in such states. Thus, if the lock-in effect dominates the cost effect, firms in such states are expected to raise their financial leverage more in response to alcohol mandate adoption. We classify states based on ethanol consumption per capita. We measure this variable in each state in the year before the adoption of the alcohol mandate and create an indicator variable that is set to one if its value is above top quartile and zero otherwise.[27]

Column 1 in Table 7 shows that firms located in high consumption alcohol consumption states, compared to low alcohol consumption states, increase their book leverage significantly

[27]In these tests our sample is restricted to only those firms that eventually adopt the mandate i.e., the set of treated firms. Because alcohol consumption does not vary a lot across states, we use top quartile to identify high consumption state.

following the adoption of this mandate. The increase is about 1.4 percentage points. Thus, firms located in states where employees value employer sponsored insurance more, benefit from lower turnover of workers.

As per National Institute of Alcohol Abuse and Alcoholism, the consumption of alcohol was especially high among young population. As a further test of value of alcohol abuse treatment mandate to young workers, we interact the mandate adoption with states that lowered the minimum purchase age during the sample . Table A6 presents the results where we find stronger results for firms in treatment states that have also lowered the minimum purchase age.

4.8.2 Industry-specific Labour Mobility

If labor mobility is the driving factor, then the adoption of alcohol mandate should have greater influence on the capital structures of firms operating in industries with a larger fraction of workers able to switch jobs. The job-lock induced via health insurance can help reduce human capital risk for firms that may arise due to higher job mobility. In column 2 we use a measure of labour mobility as in Donangelo (2014) which captures the flexibility of labor to move in and out of an industry.[28] Given the measure is at industry level, we are able to include the interaction of state and year fixed effects. Therefore, we compare the effect of the mandate adoption across firms with different labor mobilities headquartered in the same state. Effectively, the inclusion of state $\times$ year fixed effects removes all time-varying omitted variables that affect all firms within the same state during a given year by demeaning all variables by state each year. We find that firms operating in industries with higher mobility of workers have higher capital structure ratios after the adoption of alcohol mandate by their state.

4.8.3 Firm size and Financial Constraints

Firms with fewer workers typically face a high cost of insurance and workers in such firms face higher job-lock due to constraints in the labor market (Gruber, 1994a). As discussed before, large firms (with more employees) may already be providing all such insurance benefits. Therefore, employees of large firms may not be affected by mandates, while employees of small firms may face job-lock.

[28]This measure is created using industry-level occupation data from the Occupational Employment Statistics (OES) program of the BLS from 1988 to 1995 and 1997 to 2011. The measure spans 1990 to 2011. We create a single measure that is used for the entire sample period by averaging the labor mobility measure. We create an indicator variable that is set to one if its value is above median and zero otherwise

To test if our results dominated by small firms, we partition our sample in two equal halves using number of employees a firm has, a year before the adoption of alcohol mandate by the firm's headquarter state. We find that small firms increase book leverage by almost 10 percentage points more compared to the large firms in the treatment state. Here, we also control for state $\times$ year fixed effects in addition to firm and industry-year fixed effects.

Further, small firms face greater risk of worker turnover if they are surrounded by large firms in similar industry. Therefore, the lock-in effect should benefit small firms that are surrounded by large firms. In this test we try to capture outside option for a worker to purchase another employer-sponsored insurance if they switch jobs. The underlying assumption is that larger firms provide better coverage while smaller firms do not due economies of scale and risk pooling among workers. While after the adoption of mandates, small firms can provide insurance at a comparable rate and may benefit from lower turn-over of workers. In column 4, we show that firms with fewer employees that are surrounded by large firms (a proxy for geographic mobility of workers) benefit from employee lock-in and raise their debt ratios. Finally, in columns 5-8, we repeat our cross-section tests with market leverage as the dependent variable and find consistent results for most of the specifications.

Similarly, firms with financial constraints may try to keep their labour cost low by providing insurance contracts that do not cover expensive medical services. Although, mandates increase the cost of insurance for firms but these costs are lower compared to a situation where firms may want to provide worker-specific benefits in the absence of mandates. In such a situation, financially constrainted firms may benefit if the employees value such benefits. So, the net-effect is based on the increase in cost of insurance with mandates and the benefits that the firms can realize with job-lock of workers. We test and try to tease out the net effect and report results in Table 8.

We find a stronger relation between alcohol mandate adoption and leverage among firms that face tighter financing constraints, as measured by firm size, firm age, size-age index and the absence of profitability. Thus, worker in these firms value the benefits of alcohol treatment mandate and lower worker-turnover help financially constraints firms raise leverage.

Overall, our results reveal that firms located in states with high alcohol consumption, operating in high labour mobility industries and those with financial constraints, benefit from the adoption of health mandates by their headquarter state. The lower worker-turnover helps affected firms to increase financial leverage.

4.9 Mechanisms

The results are so far consistent with health insurance costs reducing worker mobility and thereby influencing capital structure ratios. We next test, if this reduction in job mobility reduces the firm's operating costs and have any effect on productivity. In addition, we also explore the role of high insurance costs on employment and wages within the firm.

4.9.1 Alcohol Mandate Adoption, Operating Costs, and Productivity

We test whether operating costs are lower following the adoption of alcohol mandate. To do so, we measure firm's annual operating costs as the cost of goods sold (COGS) plus selling, general, and administrative expenses (XSGA) (Novy-Marx, 2010). We use *Ln(1+Operating Costs)* as dependent variable and present results in Table 9.

Column 1 shows that following the adoption of alcohol mandate firms experience a significant reduction in their operating costs. The coefficient estimates imply that following the adoption of alcohol mandate the operating costs is lower by 2.5% relative to its sample mean. Column 2 shows that this result is robust to controlling for book leverage. Columns 3 and 4 we interact it with the industry-level mobility measure. We find that the operating costs are especially lower for firms operating in industries with high labour-mobility. Thus, results from column 1 to 4 suggests evidence in favour of lower operating costs following alcohol mandate adoption, especially for firms operating in high labour-mobility industries.

Next we test the sensitivity of firm's profit with respect to its sales after the adoption of alcohol mandate. Table A7, column 1 provide the results. We find that the sensitivity of profits to sales reduces after the alcohol mandate and results are robust after including the book leverage as control variable (column 2). Further, we examine if lower worker-turnover help firms in improving productivity. We follow İmrohoroğlu and Tüzel (2014) to estimate the three digit industry-adjusted firm TFP and find consistent results. Table A7 columns 3 and 4 present the results that after the mandates firm TFP increases by almost 1.4%.

Overall, the results in Table 9 and Table A7 are consistent with decrease in operating costs and in operating leverage, while increase in firm TFP after the adoption of alcohol abuse treatment state mandate.

4.9.2 Adoption of Alcohol Mandate, Employment and Wages

Next, we examine the impact of health mandates on employment and wages within the firm. Theoretically, the effect of any such increase is ambiguous (Summers, 1989). With the adoption of health insurance mandates, labor costs increase and should, all else equal, lead to a decrease in demand for labor among employers to offset this cost. However, if employees value the associated benefit of the mandates, then this valuation will lead to an increase in labor supply. The increase in labor supply will have two effects: (1) attenuate the employment decline, and (2) increase the wage decline. Overall, the extent to which the mandate affects wages and employment levels within a firm is determined by employees' valuation of the associated benefit.

One the one hand, if employees fully value the benefit, the incidence of the mandate will be entirely passed on to the employees in terms of lower wages and there will be no impact on employment levels (as employers experience no increase in labor costs). On the other hand, if employees do not value the benefit to any extent, the cost of the mandate will be fully borne by the employers, wages will remain unchanged, and overall employment will decline to offset the increased cost from adopting the mandate. Intermediate valuations of benefit by employees will lead to both lower wages and employment levels, with the relative magnitudes of these effects determined by employee preferences.

As discussed before in section 4.1, we find evidence for increase in labour supply. The number of hours worked increase after the mandates. Evidence in Table 10 presents results for labour costs using Compustat data. In columns 1 to 3 we present evidence without industry-year fixed effects whereas in columns 4 to 6 we present results with industry-year fixed effects. The economic magnitude of this reduction is significant. Our most conservative estimates (columns 2 and 5) suggests a reduction in total wages by 5% for a treated firm in response to the adoption of alcohol mandate.

We do find evidence for decrease in number of employees and in the wage per employee measure, but the effect is not statistically significant. This is consistent with prior studies (Gruber, 1994b; Antwi and Maclean, 2017). Overall, our results are consistent with the notion that employees value such benefits to a certain extent which allows firms to raise financing and results in lower wages.

A possible *alternative explanation* for our results could be that firms may increase leverage in anticipation of union bargaining (Matsa, 2010). Because mandates not only increase cost of

insurance paid by employer, but it also increase insurance contribution by employees. In such a situation unions may try to increase wages. Firm operating in industries with greater union coverage of workers may increase leverage more to bargain with labour. We do not find evidence for this explanation. Table A8 report the results.

4.10 Additional Robustness tests

In this subsection, we perform additional robustness tests to address potential concerns with the baseline evidence.

4.10.1 Coincidental law changes

Our identification relies on staggered adoption of high-cost alcohol mandates by different states. Thus, any causal interpretation would be confounded by changes in some omitted variables which were coincident in a similar staggered fashion. In particular, changes in law introduced by state legislatures could then explain the positive relationship between leverage and mandate adoption. Any such contemporaneous change in regulation introduces spurious correlation and can explain this observed relationship. We address this concern by controlling for other contemporaneous law changes that are known to affect firms' leverage choices. We report the results in Table 11. Panel A reports results for book leverage and Panel B presents results for market leverage.

We begin by examining the changes in inter and intrastate banking regulations that significantly increase credit supply (Dick and Lehnert, 2010; Amore, Schneider, and Žaldokas, 2013). An increase in credit supply can lead to increases in leverage if it allows treated firms to raise debt financing differentially when compared to control firms. To mitigate this concern, we re-estimate our baseline specification and control for both bank branching reform and Interstate reform. The coefficient estimates are reported in column 1. We find that controlling for these reforms slightly weakens the statistical significance of our estimates. The economic magnitudes are still large and amount to a 2.3% increase relative to sample mean.

Next, we address the concern that antitakeover statutes passed by different states are known to affect leverage decision of firms. Garvey and Hanka (1999) suggests that threat of hostile takeovers motivates managers to raise their leverage that they would otherwise avoid. Thus, if mandate adoption coincides with the passage of such statutes then the observed relationship

may be driven by statutes rather than adoption itself. Hence, in column 2, we control for business combination laws and find that inclusion of the law leaves our estimates unchanged in magnitude and interpretation. This reassures that the observed positive relationship is not driven by the passage of antitakeover statutes.

The next concern we address is whether our results are affected by the passage of Wrongful discharge laws (WDL). Serfling (2016) suggests the passage of WDL increases firms' expected firing costs. He shows that firms respond to increase in firing costs by reducing their financial leverage. Insurance costs, on the other hand, affects labor mobility via job-lock. Nevertheless, to avoid any concerns regarding this particular law driving our results, in column 3, we control for WDL. We find that controlling for WDL doesn't change our estimates.

In column 4 we control for right-to-work laws and column 5 we control for Inevitable Disclosure Doctrine. We find our results hold after controlling for any contemporaneous changes in these laws.

Given these law changes occur contemporaneously and not sequentially, in column 6, we combine all the above mentioned laws to examine whether their simultaneous inclusion affects our results. We find that the results mirror those established earlier. Overall, we find that our basic results are robust and unaffected by any other contemporaneous law change. This gives us assurance that the observed relationship is not spurious and driven by other omitted state-level regulations.

4.10.2 Other Robustness

In this section we consider various improvement of, and address potential concerns with, our baseline evidence of positive relationship between adoption of alcohol mandate and financial leverage. We report the results in Table 12 and present evidence for both book leverage and market leverage for our sample of firms.

In section 4.5 we observe that state alcohol consumption is the only variable that may predict the timing of alcohol mandate. We address the concern that changes in state alcohol consumption levels might be correlated with both the adoption of alcohol mandate and leverage decision of firms. Therefore, in columns 1 and 2, we include ethanol consumption per capita for each state. Results remain virtually unchanged.

Next, one might be concerned that the multinational firms might adopt sophisticated strate-

gies to circumvent national legislation or in general choose to avoid complying with state legislation by employing different employment contracts. Thus in columns 3 and 4, we focus on examining purely domestic firms. We define domestic firms as those that do not have any foreign income and or that do not pay foreign taxes. Our effects are marginally weaker in this case.

Furthermore, the impact of mandate adoption remains statistically significant when we control of additional firm characteristics (Column 5 and 6) i.e., Log(K/L), HHI index, Log(number of employees) and state characteristics (Columns 7 and 8) i.e., budget surplus, tax revenue, debt outstanding, all scaled by state GDP, proportion of employees with union membership.

In columns 9 and 10, we control for non-linear effects of size on financing decision by using a set of 100 dummy variables that identify firm size based on $Log\ Assets_t$. Controlling for such size effects, slightly weakens our estimates and leaves our interpretation unchanged. The findings are also similar across other regression specifications. In columns 11 and 12, we use two-digit fixed effects instead of three-digit fixed effects. The results from this estimation are similar to our main specification.

In baseline regression we restrict our sample to years before 1993 to avoid significant regulations that were introduced in the 1990's which may create noise in identifying the effect of mandate adoption on capital structures. In columns 13 and 14 we extend our sample to year 2000. We do find significant results for extended sample. Also, in our baseline results, we excluded firms in retail and wholesale industries. We now include them and report results in columns 15 and 16. We find consistent but weak results.

We control for state-year trends and report results in column 17 and 18. We find consistent results. Given the concerns over non-compliance by very small firms (Gruber and Madrian, 1994) in columns 19 and 20, we retain firms with number of employees greater than 50. We find that the results are slightly weaker.

The impact of alcohol mandate adoption is also robust to restricting sample of eventually treated firms. This estimation allows us to examine the how adoption of state mandates affects leverage decisions of such firms. In columns 21 and 22, we keep only firms that exist one year before the alcohol mandate adoption and find that the results remain virtually unchanged.

Next, we address the concerns that firm might strategically change their location in response to mandate adoption. Thus, we exclude all firms identified as having relocated to another state. In columns 23 and 24, we restrict the sample to firms that do not change their states during

our entire sample period. The next concern we address is whether our results are affected by acquisition activity in a particular state. For instance, following mandate adoptions, acquisitions become more attractive as they help firms reorganize labor and capital more efficiently. To address this issue, in columns 25 and 26, we exclude firms that had sales or asset growth of more than 100% in any year.[29] In addition, we also find that our results are weaker in magnitude to using the state where the highest proportion of firm's employees are located (columns 27 and 28). Here we assign treatment based on maximum employee state for each firm which maybe different from their state of operation and incorporation. We use Lexis-Nexis data to identify the maximum employee state for a firm at the end of our sample period. Finally, we drop firms located in Nevada as they might be affected differentially due to possible association between alcoholism and gambling (columns 29 and 30). Also, our results are robust to dropping industries that manufacture alcohol or ethanol (Columns 31 and 32).

Overall, the evidence presented in the table shows that the significance of adoption of alcohol treatment mandate remains virtually unaltered when we account for these potential confounds.

[29] Pirinsky and Wang (2006) find that mergers and acquisitions drive most headquarter relocations. In addition, Almeida, Campello, and Weisbach (2004) exclude firms with growth in assets or sales of more than 100% as mergers are typically associated with such large changes.

5 Conclusion

Prior research on capital structure has documented that firms choose their financial policies in consideration of workers. This paper examines how changes in intra-firm bargaining through health insurance induced 'job-lock' affects financing decisions of firms. We exploit variation using staggered adoption of high-cost state health mandates which significantly increased the cost of health insurance borne by firms, along with providing better insurance coverage for their employees. While there is a vast amount of literature analyzing the impact of mandated benefits on workers relatively little is known how it affects firm policies.

To this end, as a first step, we study how such programs interact and affect firm's financial policies. We document that health insurance-induced 'job-lock' of workers reduces firms' operating costs which allow them to raise leverage. Particularly, these effects are stronger for a) firms with small labor pool, b) financially constrained firms, and c) firms that operate in industries with higher job mobility. Overall, these results are consistent with greater operational flexibility allowing firms to raise financial leverage via in-crease in intra-firm bargaining power.

Rising health care costs played a prominent role in the recent presidential campaign and there has been rising interest in understanding the costs and benefits of mandated benefits as a tool of social policy. Broadly, our evidence emphasizes the role of health insurance as an important component of changes in intra-firm bargaining environment. Exploring the implications of health insurance on additional corporate policies is an important area for future research.

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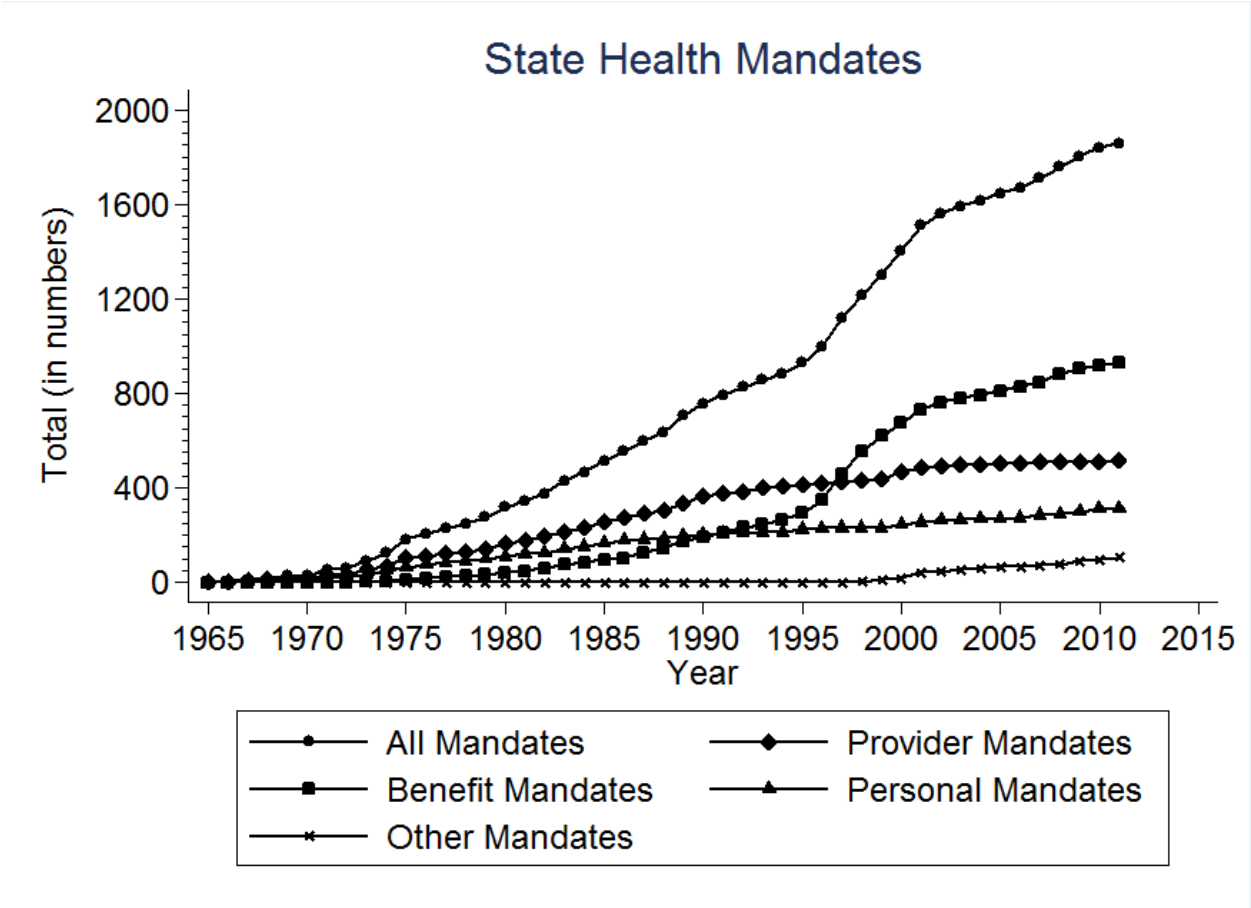


Figure 1: Number of state health mandates adopted by year: This figure shows the number of health mandates adopted in each year between 1966 and 2012. Source: Laudicina, Gardner, and Holland (2013)

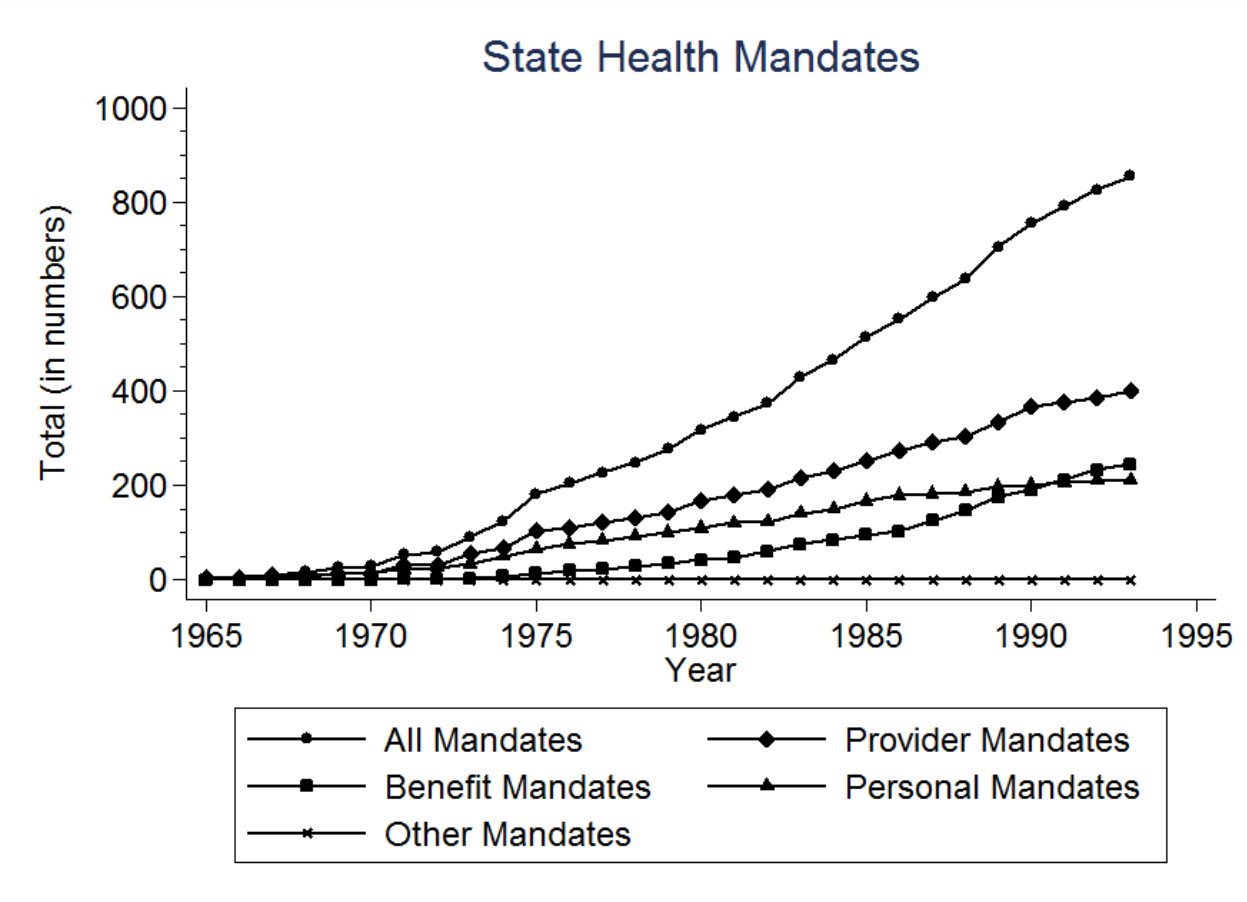


Figure 2: Number of state health mandates adopted by year: This figure shows the number of health mandates adopted in each year between 1966 and 1995. Source: Laudicina, Gardner, and Holland (2013)

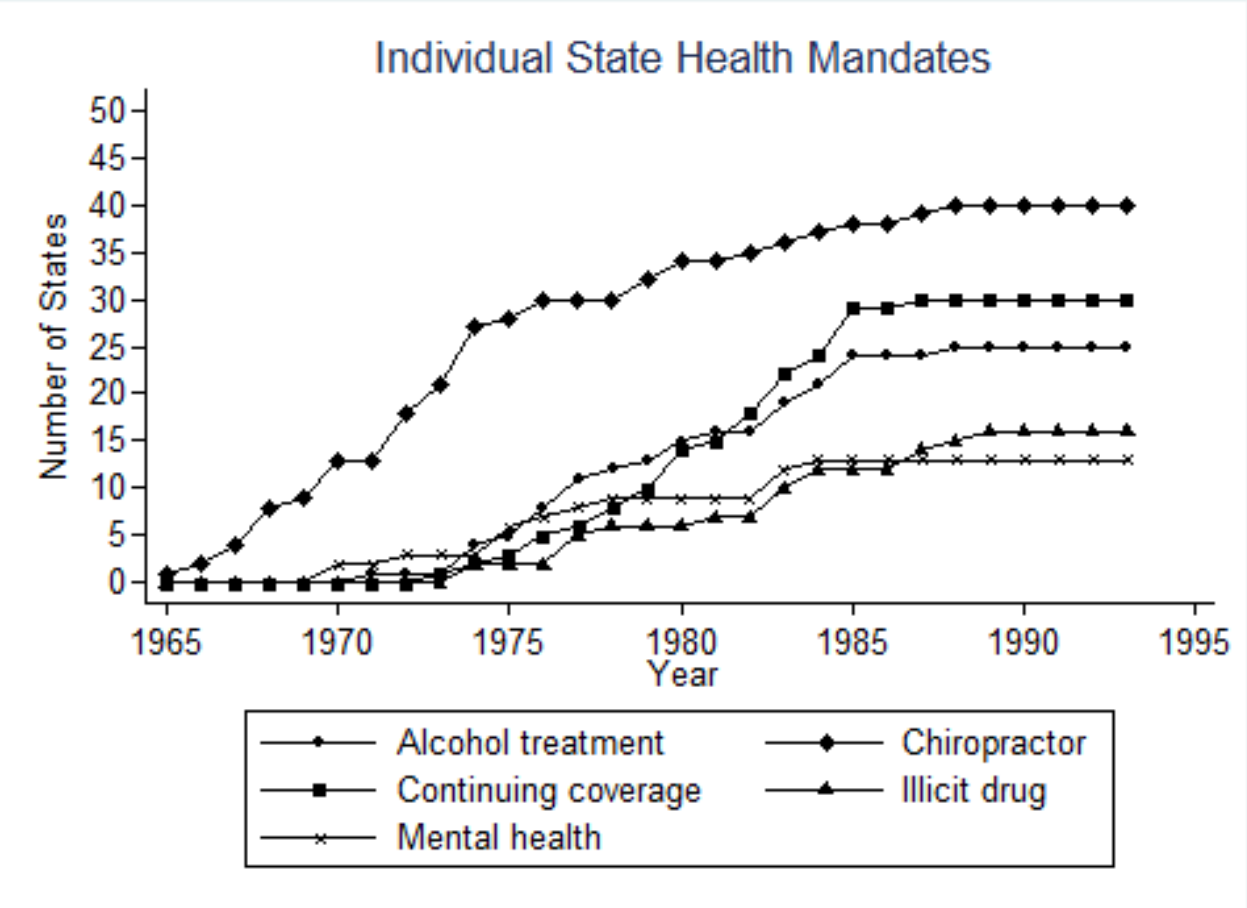


Figure 3: Number of states adopting high cost health mandates: This figure shows the number of states that have adopted high-cost health mandates in each year between 1966 and 1993. (Source: Laudicina, Gardner, and Holland (2013))

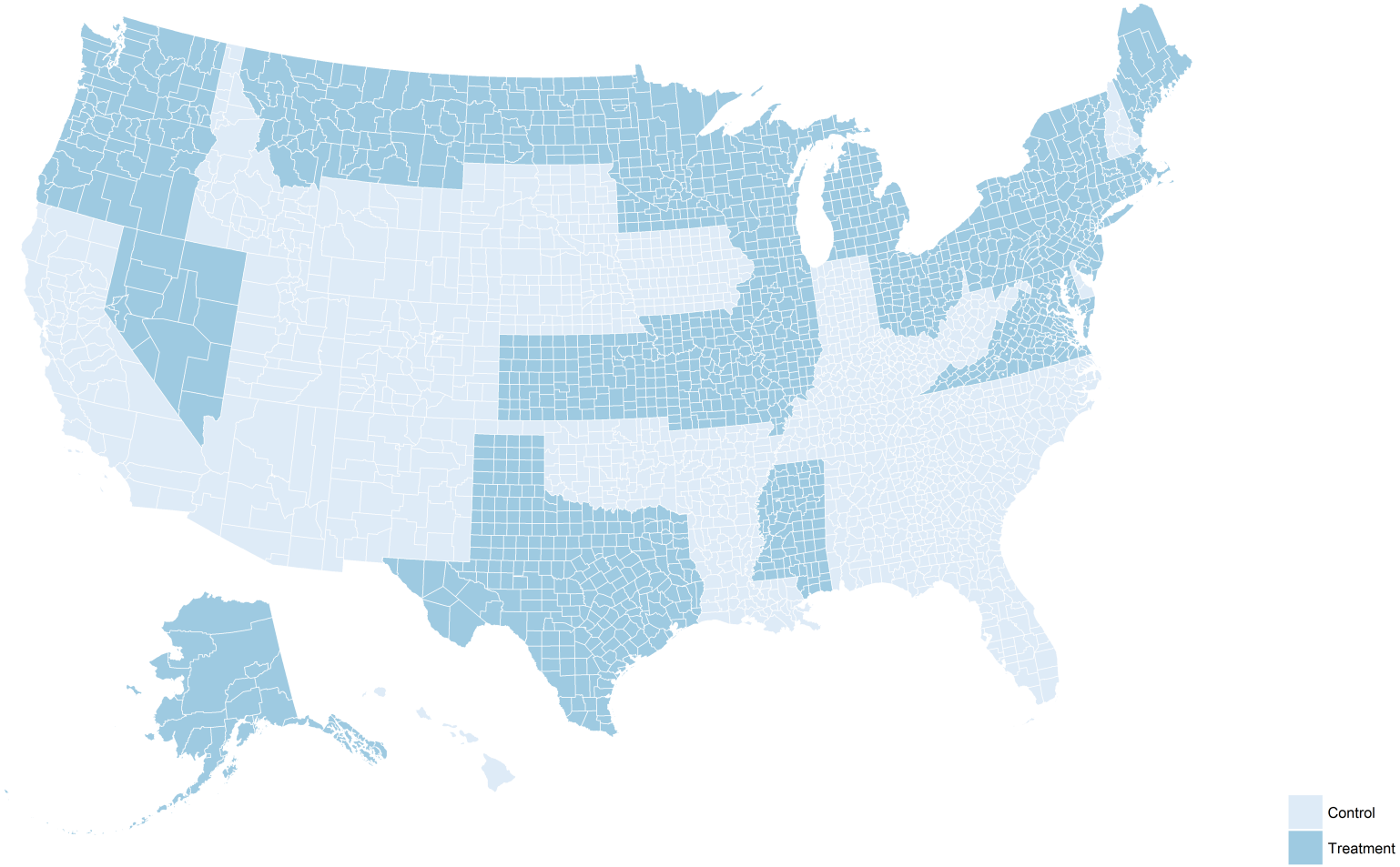


Figure 4: States adopting high-cost alcohol mandate in our sample period

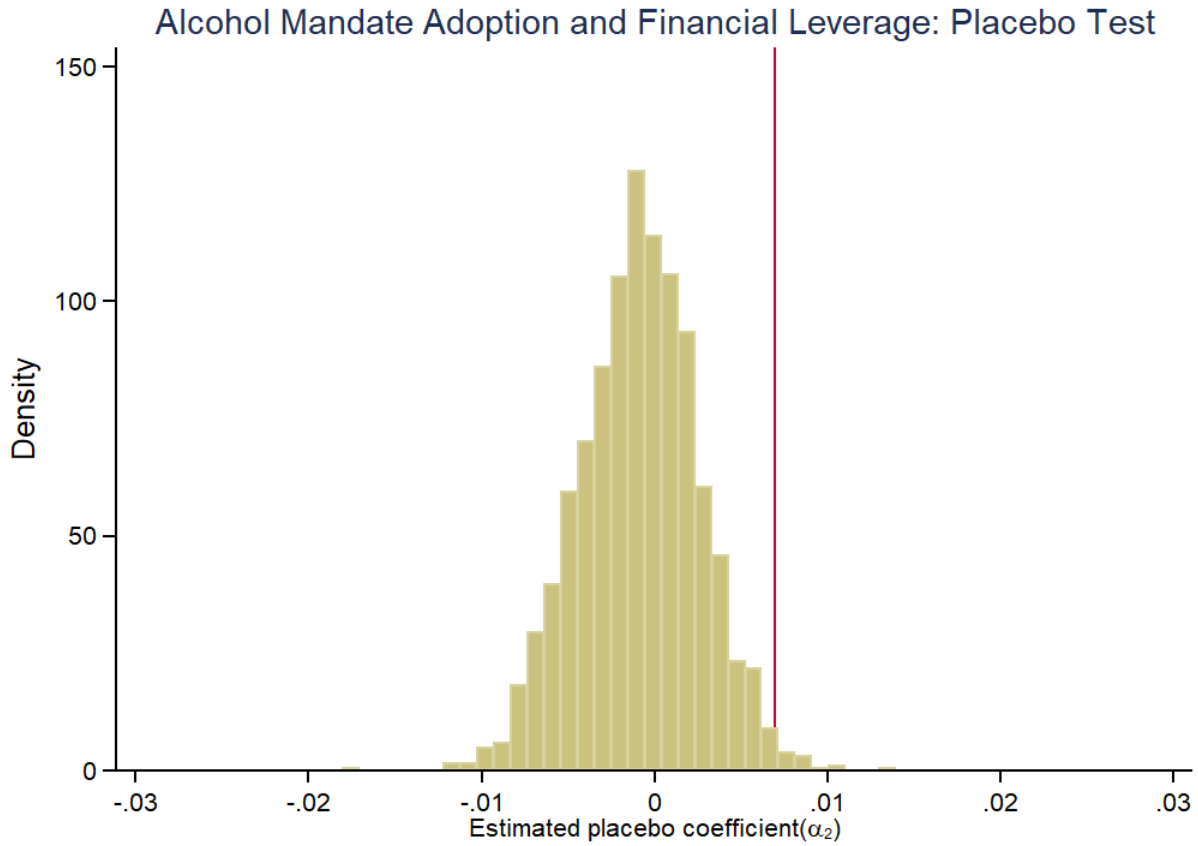


Figure 5: Non-Parametric Distribution of Placebo Estimate: The figure above plots the coefficient estimates from randomized alcohol mandate adoption across different U.S. states. We simulate fictitious mandate adoptions where we randomly draw a state, and assign a random year as the year of placebo adoption. We repeat the estimation 2000 times. In each of the pseudo samples we then run our baseline regression as in Table 3, column 1 and save the relevant coefficients. The vertical red line embedded in the graph represents the actual regression coefficient (α_2) based on the actual data (column 1 of Table 3). The green line shows kernel density. The sample period runs from 1966 to 1993.

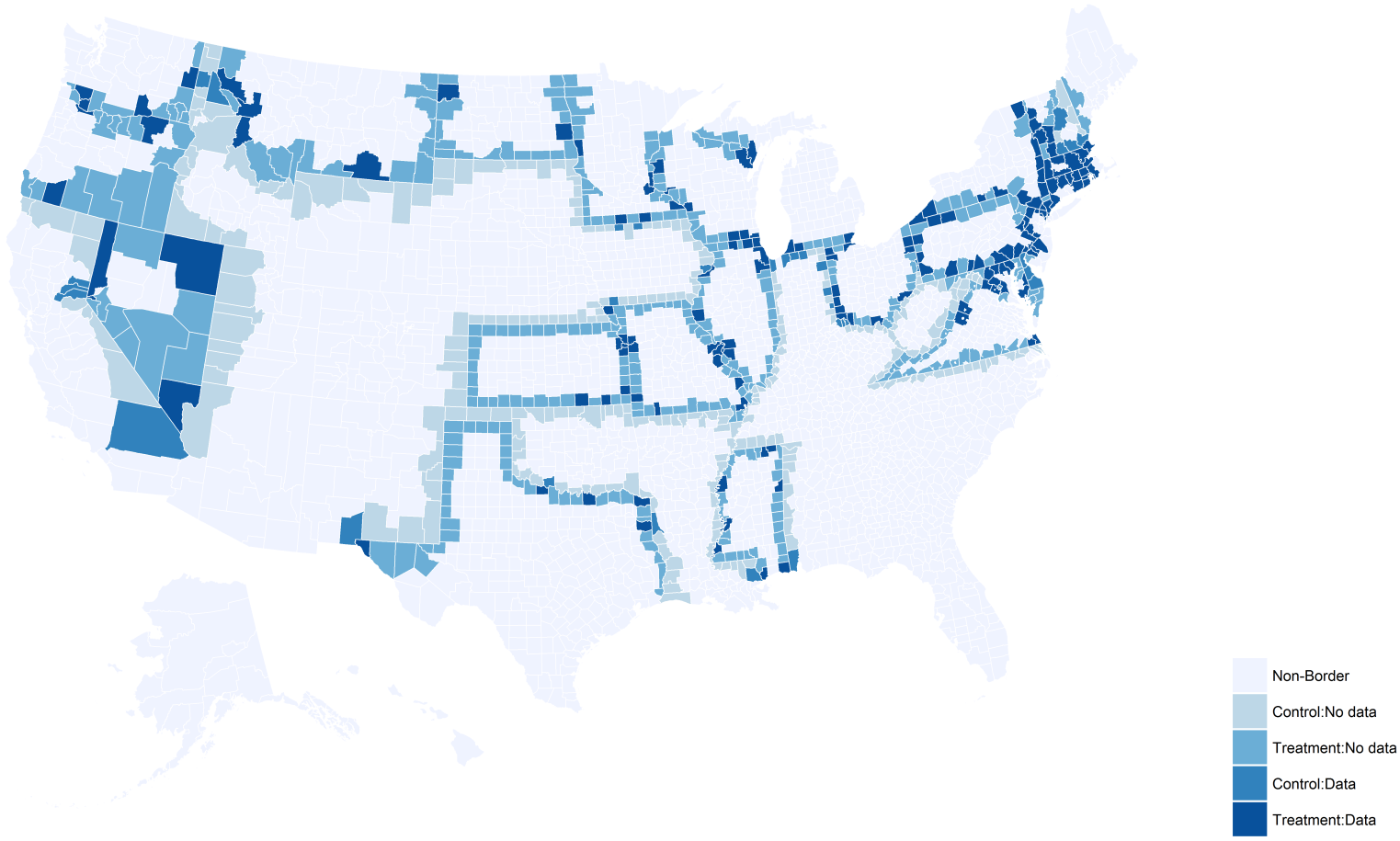
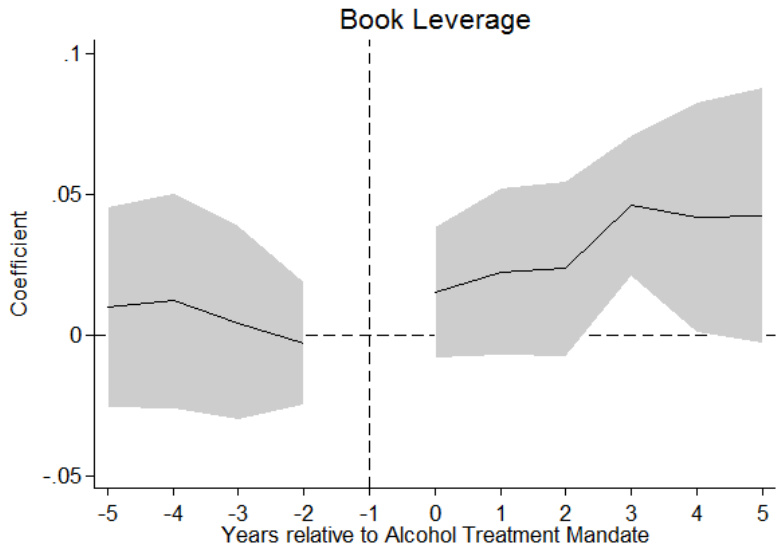
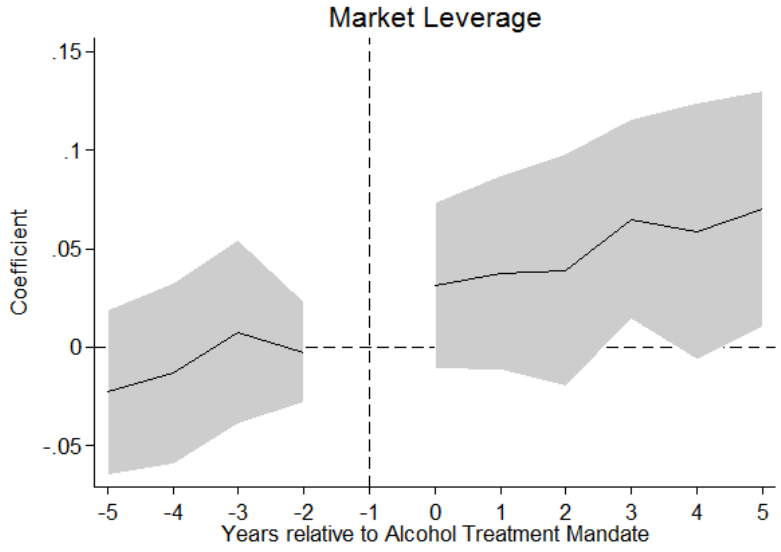


Figure 6: Bordering county matches



(a)



(b)

Figure 7: This figure shows the effect of adoption of the alcohol treatment mandate on book leverage (a) and market leverage (b). On the y-axis, the graph plots the coefficient estimates from regressing book leverage (or market leverage) on industry-year fixed effects and dummy variables indicating the year relative to the adoption. We create dummies for up to 5 years before and after its adoption. The last variable is set to one if it has been 5 or more years after the adoption of this mandate and zero otherwise. The x-axis shows the time relative to the adoption of the alcohol mandate. The shaded area correspond to the 95% confidence intervals of the coefficient estimates. Confidence intervals are calculated from standard errors clustered by state. The sample consists of bordering county matches and spans from 1966 to 1993.

Table 1:
Adoption of High-cost state health insurance mandates and labor mobility of workers

This table reports results from linear probability models that estimate the impact of adoption of state private health insurance mandates on the mobility of individuals. The sample comes from the Census' Survey of Income and Program Participation and spans the period 1983 to 1993. It includes individuals who are 18+ years old and observed at least five times during the sample period. We only include individuals who receive their health insurance from employer. We exclude individuals who may receive their health insurance from spouse's employer, Medicare, Medicaid or other state-sponsored insurance programs. The binary indicator that identify job switches take a value of one if the individual has left her employer recorded in the preceding survey period to join a new employer or become self-employed in the current survey period (survey periods are four months apart in the vast majority of cases, but the time between surveys varies between one and twenty-four months), and zero otherwise. The high cost mandated benefits we study are: Alcohol abuse treatment (*Alcohol mandate*), Mental health treatment (*Mental health mandate*), Chiropractors (*Chiropractor mandate*), Continuing coverage for terminated employees and their dependents (*Continuing coverage mandate*), and Illicit drug abuse treatment (*Illicit drug mandate*). Mobility is an index which captures occupation dispersion within each three-digit SIC industry and serves as the proxy for labor mobility (Donangelo, 2014). For the continuous measure of Mobility, we create an indicator variable (*High mobility*) that is set to one if the value of the index is above the sample median between 1990 and 2000 and zero otherwise. The control variables are: *Log(Income)*, the natural logarithm of the individual's average monthly income recorded in the previous survey (in $); *Log(Age)*, the natural logarithm of the age of the individual recorded in the previous survey; *State GDP Growth*, the annual GDP growth rate in the state; *Political Balance*, the fraction of a state's congress members representing their state in the U.S. House of Representatives that belong to the Democratic Party. Dollar values are expressed in 2000 dollars. Each model includes individual fixed effects and year-quarter fixed effects. Standard errors are corrected for heteroskedasticity and clustering at the state level are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 1:
Continued.

	Dependent Variable: Job Turnover				
	(1)	(2)	(3)	(4)	(5)
High-cost mandates	-0.007*				
	(0.004)				
Alcohol mandate		-0.016***	-0.014***	-0.015***	
		(0.006)	(0.005)	(0.005)	
Alcohol mandate x High mobility					-0.016*
					(0.009)
Mental health mandate		-0.020	-0.007	-0.010	
		(0.015)	(0.013)	(0.014)	
Chiropractor mandate		0.013	0.008	0.009	
		(0.012)	(0.011)	(0.012)	
Continuing coverage mandate		-0.001	-0.004	-0.003	
		(0.007)	(0.006)	(0.006)	
Illicit drug treatment mandate		-0.006	-0.002	-0.001	
		(0.008)	(0.006)	(0.006)	
Log(Age)			0.266***	0.268***	0.138*
			(0.059)	(0.059)	(0.078)
Log(Income)			-0.078***	-0.078***	-0.016***
			(0.003)	(0.003)	(0.004)
Log(State Per Capita GDP)				-0.030	
				(0.038)	
Real GSP Growth				0.000	
				(0.000)	
Political Balance				-0.001	
				(0.004)	
Other Mandates	Yes	Yes	Yes	Yes	Yes
Individual Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year-Quarter Fixed Effects	Yes	Yes	Yes	Yes	No
State*Year-Quarter Fixed Effects	No	No	No	No	Yes
Adj.-R^2	0.154	0.154	0.187	0.187	0.173
Observations	171505	171505	170675	169432	71838

Table 2:
Adoption of Alcohol mandate and Financial Leverage

This table reports results from OLS regressions relating financial leverage to the adoption of state private health insurance mandates.The sample consists of Compustat industrial firms spanning over 1966 to 1993. The dependent variables in Panels A and B are *Book Leverage* and *Market Leverage*, respectively. *Alcohol mandate* is an indicator variable equal to one if the firm is headquartered in a state which adopts alcohol abuse treatment mandate , and zero otherwise. *All other mandates* is the cumulative sum of other health insurance mandates adopted in a state in any year. Control variables include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. For market leverage, we control for market fluctutations-which can potentially have nonlinear effects on leverage-using 100 dummy variables, one for each percentile of the market equity distribution. The regressions also include three digit SIC industry-year fixed effects wherever specified. Appendix Table B1 provides variable definitions. Dollar values are expressed in 2000 dollars. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles. Standard errors are clustered at the state level and are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	Panel A: Book Leverage			
	(1)	(2)	(3)	(4)
Alcohol mandate	0.010**	0.008***	0.008**	0.006**
	(0.004)	(0.003)	(0.003)	(0.003)
All other mandates	0.000	-0.000	-0.000	-0.000
	(0.001)	(0.000)	(0.000)	(0.000)
Log Assets		0.053***	0.053***	0.056***
		(0.002)	(0.002)	(0.002)
Profitability		0.042***	0.042***	0.046***
		(0.011)	(0.011)	(0.009)
Tangible Assets		0.199***	0.199***	0.182***
		(0.014)	(0.014)	(0.015)
Market-to-Book		-0.009***	-0.009***	-0.008***
		(0.001)	(0.001)	(0.001)
Modified Z-Score		-0.036***	-0.036***	-0.035***
		(0.003)	(0.003)	(0.003)
Dividend Payer		-0.048***	-0.048***	-0.047***
		(0.002)	(0.002)	(0.002)
Debt Rating(1=yes)		0.028***	0.028***	0.037***
		(0.006)	(0.006)	(0.005)
Log(State Per Capita GDP)			-0.014	-0.019
			(0.021)	(0.021)
State GDP Growth			-0.000	0.000
			(0.000)	(0.000)
Political Balance			0.003	0.002
			(0.002)	(0.002)
Year Fixed Effects	Yes	Yes	Yes	No
Firm Fixed Effects	Yes	Yes	Yes	Yes
Industry*Year Fixed Effects	No	No	No	Yes
Adjusted R^2	0.644	0.713	0.714	0.723
Observations	83767	81010	80819	80353

(Continued)

	Panel B: Market Leverage			
	(1)	(2)	(3)	(4)
Alcohol mandate	0.006	0.006**	0.006**	0.006**
	(0.007)	(0.002)	(0.002)	(0.002)
All Other Mandates	0.000	-0.001*	-0.001*	-0.000
	(0.001)	(0.000)	(0.000)	(0.000)
Log Assets		0.259***	0.259***	0.258***
		(0.003)	(0.003)	(0.004)
Profitability		0.068***	0.067***	0.070***
		(0.010)	(0.010)	(0.008)
Tangible Assets		0.124***	0.124***	0.117***
		(0.009)	(0.009)	(0.009)
Market-to-Book		0.048***	0.048***	0.047***
		(0.002)	(0.002)	(0.002)
Modified Z-Score		-0.021***	-0.021***	-0.020***
		(0.002)	(0.002)	(0.002)
Dividend Payer		-0.028***	-0.028***	-0.027***
		(0.002)	(0.002)	(0.002)
Debt Rating(1=yes)		0.017***	0.017***	0.020***
		(0.005)	(0.005)	(0.005)
Log(State Per Capita GDP)			-0.006	-0.015
			(0.015)	(0.015)
State GDP Growth			0.000	0.000
			(0.000)	(0.000)
Political Balance			0.001	0.001
			(0.001)	(0.001)
Year Fixed Effects	Yes	Yes	Yes	No
Firm Fixed Effects	Yes	Yes	Yes	Yes
Industry*Year Fixed Effects	No	No	No	Yes
Adjusted R^2	0.663	0.887	0.887	0.890
Observations	83767	81010	80819	80353

Table 3:
Timing of Capital Structure Changes around Alcohol mandate adoption

This table reports results from OLS regressions relating timing of capital structure changes to the adoption of alcohol treatment mandate. The sample consists of Compustat industrial firms spanning over 1966 to 1993. The dependent variables are *Book Leverage* and *Market Leverage*. Pre^{-2} is an indicator variable set to one if a firm will adopt the alcohol mandate in two or more years and zero otherwise. *Alcohol mandate*^{0} is an indicator variable set to one if a firm is headquartered in a state that adopts the alcohol mandate in the current year and zero otherwise. $Post^{1+}$ is an indicator variable set to one if a firm is headquartered in a state that adopted this mandate one year (or more years) ago and zero otherwise. Control variables include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. For market leverage, we control for market fluctutations-which can potentially have nonlinear effects on leverage-using 100 dummy variables, one for each percentile of the market equity distribution. The regressions also include three digit SIC-year fixed effects wherever specified. Appendix Table B1 provides variable definitions. Dollar values are expressed in 2000 dollars. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles. Standard errors are clustered at the state level and are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Dependent variable	Book Leverage		Market Leverage	
	(1)	(2)	(3)	(4)
Pre^{-2}	-0.003	-0.001	-0.001	-0.001
	(0.003)	(0.003)	(0.003)	(0.003)
Alcohol mandate^0	0.004**	0.005**	0.002	0.004*
	(0.002)	(0.002)	(0.002)	(0.002)
$Post^{1+}$	0.006***	0.005**	0.006**	0.005*
	(0.002)	(0.003)	(0.003)	(0.003)
Control Variables	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	No	Yes	No
Firm Fixed Effects	Yes	Yes	Yes	Yes
Industry*Year Fixed Effects	No	Yes	No	Yes
Adjusted R^2	0.714	0.723	0.887	0.890
Observations	80819	80353	80819	80353

Table 4:
Timing of Alcohol mandate and Pre-existing characteristics

The model is a Weibull hazard model where the dependent variable is the log expected time to adopt alcohol treatment mandate. All the right-hand-side variables are included in levels. The sample period is 1966 to 1993 and the sample comprises of states that adopted the alcohol mandate. States drop from the sample once they adopt. Appendix Table B1 provides variable definitions. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles, and dollar values are expressed in 2000 dollars. Standard errors are clustered at the state level and are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level,respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Other mandates	0.027	0.017	0.006	0.009	0.009	0.011
	(0.023)	(0.023)	(0.022)	(0.022)	(0.022)	(0.023)
Δ State Union Membership	0.004	0.007	-0.010	-0.011	-0.011	-0.012
	(0.044)	(0.042)	(0.033)	(0.031)	(0.032)	(0.033)
GSP per capita	0.613	0.718	0.303	0.705	0.705	0.666
	(0.916)	(0.791)	(0.669)	(1.215)	(1.208)	(1.246)
Real GSP growth	0.039	0.045*	0.029**	0.024	0.024	0.026
	(0.027)	(0.025)	(0.014)	(0.018)	(0.018)	(0.019)
Political balance	-0.231	-0.368	-0.195	-0.207	-0.226	-0.244
	(0.258)	(0.285)	(0.203)	(0.219)	(0.251)	(0.271)
Budget Surplus (% of GSP)	0.070	0.055	0.042	0.039	0.039	0.040
	(0.128)	(0.119)	(0.127)	(0.141)	(0.137)	(0.147)
Alcohol per capita		-0.745**	-0.713**	-0.707*	-0.728*	-0.718*
		(0.331)	(0.355)	(0.363)	(0.393)	(0.405)
Employment			-0.000	-0.000	-0.000	-0.000
			(0.000)	(0.000)	(0.000)	(0.000)
HHI			0.055	-0.455	-0.523	-0.667
			(2.337)	(2.949)	(3.009)	(3.233)
Profitability			0.937	1.016	0.946	0.832
			(2.208)	(2.491)	(2.547)	(2.626)
Cash			0.269	0.255	0.253	0.291
			(0.221)	(0.235)	(0.235)	(0.250)

(Continued)

Table 4:
Continued.

	(1)	(2)	(3)	(4)	(5)	(6)
Ln(firmage)			0.397	0.421	0.407	0.402
			(0.294)	(0.377)	(0.397)	(0.402)
Ln(Assets)			-0.335	-0.317	-0.297	-0.356
			(0.249)	(0.250)	(0.289)	(0.304)
Tangibility			1.496	0.859	0.765	1.053
			(1.458)	(1.559)	(1.783)	(1.761)
Market-to-book			0.136	0.157	0.159	0.156
			(0.193)	(0.211)	(0.213)	(0.204)
Modified Z-score			-0.203	-0.148	-0.144	-0.147
			(0.216)	(0.240)	(0.240)	(0.256)
Dividend payer			-0.011	-0.203	-0.205	-0.139
			(0.552)	(0.608)	(0.605)	(0.636)
Rating			1.630	0.996	1.001	1.123
			(1.442)	(1.523)	(1.520)	(1.539)
Sales-Weighted State Book Leverage				-0.000	-0.000	-0.000
				(0.000)	(0.000)	(0.000)
State corporate tax rate					-0.875	-0.589
					(3.820)	(3.712)
Lower minimum purchase age						-0.110
						(0.150)
Raise minimum purchase age						-0.097
						(0.300)
Firm variables	No	No	Yes	Yes	Yes	Yes
State variables	Yes	Yes	Yes	Yes	Yes	Yes
χ^2	17.20	26.42	46.46	48.18	52.47	50.24
Observations	964	964	884	884	884	884

Table 5:
Alcohol Mandate Adoption and Financial Leverage: Bordering county matches

This table reports results examining the impact of adoption of alcohol mandate on firms' financial leverage using contiguous county matched sample. The dependent variables in Panels A and B are *Book Leverage* and *Market Leverage*, respectively. In columns (1) to (3), we match contiguous counties each year while in column (4) we match contiguous counties based on pre-mandate alcohol consumption and in column (5) we match contiguous counties based on pre-alcohol mandate labor laws. Pre^{-2} is an indicator variable set to one if a firm will adopt the alcohol mandate in two or more years and zero otherwise. *Alcohol mandate*^{0} is an indicator variable set to one if a firm is headquartered in a state that adopts the alcohol mandate in the current year and zero otherwise. $Post^{1+}$ is an indicator variable set to one if a firm is headquartered in a state that adopted this mandate one year (or more years) ago and zero otherwise. Control variables include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. For market leverage, we control for market fluctutations-which can potentially have nonlinear effects on leverage-using 100 dummy variables, one for each percentile of the market equity distribution. The regressions also include three digit SIC-year fixed effects wherever specified. All regressions include county-pair year fixed effects. Appendix Table B1 provides variable definitions. Dollar values are expressed in 2000 dollars. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles. Standard errors are clustered at the state level and are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	Panel A: Book Leverage				
Matching	Bordering County	Bordering County	Bordering County	Alcohol Consumption	Labor laws
	(1)	(2)	(3)	(4)	(5)
Pre^{-2}	0.006	0.011	0.008	0.013	0.012
	(0.013)	(0.026)	(0.016)	(0.013)	(0.014)
Alcohol mandate^0	0.012	0.011	0.015	0.003	0.010
	(0.008)	(0.011)	(0.011)	(0.012)	(0.011)
$Post^{1+}$	0.031**	0.044**	0.036**	0.035**	0.034**
	(0.013)	(0.020)	(0.014)	(0.015)	(0.014)
Control Variables	No	No	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry*Year Fixed Effects	No	Yes	Yes	Yes	Yes
Adjusted R^2	0.659	0.715	0.769	0.771	0.767
Observations	37814	37491	36424	34500	34683
	Panel B: Market Leverage				
Matching	Bordering County	Bordering County	Bordering County	Alcohol Consumption	Labor laws
	(1)	(2)	(3)	(4)	(5)
Pre^{-2}	0.022	0.017	0.003	0.004	0.006
	(0.019)	(0.019)	(0.010)	(0.011)	(0.010)
Alcohol mandate^0	0.027	0.021	0.003	-0.009	-0.001
	(0.016)	(0.020)	(0.008)	(0.007)	(0.008)
$Post^{1+}$	0.047**	0.049*	0.037***	0.034**	0.038**
	(0.019)	(0.026)	(0.013)	(0.016)	(0.014)
Control Variables	No	No	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry*Year Fixed Effects	No	Yes	Yes	Yes	Yes
Adjusted R^2	0.775	0.830	0.917	0.920	0.916
Observations	37802	37476	36410	34485	34670

Table 6:
Effect of Using Propensity Score Matched Samples

This table explores the impact of the adoption alcohol treatment mandate on firms' financial leverage using propensity score matched samples. The treatment and control groups consist of firms headquartered in states that adopt and do not adopt the mandate, respectively. For the first match, we estimate propensity scores using Log Assets, Profitability, Fixed Assets, and Market-to-Book. For the second match, we also include Modified Z-Score and Divided Payer as a regressors. For both matches, we match each treatment firm in year t-1 to a control firm (with replacement), matching on year, three-digit SIC industry, and closest propensity score. For the second match, we include additional variables Modified Z-Score and Divided Payer. We require treatment firms to have one control firm match and retain the control firm with the closest propensity score in case of multiple matches. Panel A tabulates the means of the matched variables and propensity scores for the treatment and control groups in year t-1 (the control variables are not statistically different across groups at the 10% significance level). Panel B presents the results examining the impact of the adoption of alcohol treatment mandate on firms' leverage in columns 1 to 4. Post is an indicator variable set to one in the five years after the adoption of this mandate (same for matched control firms). Control variables in Panel B include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. For market leverage, we control for market fluctutations-which can potentially have nonlinear effects on leverage-using 100 dummy variables, one for each percentile of the market equity distribution. Appendix Table B1 provides variable definitions. Standard errors in Panel B are clustered at the state level (standard errors are in parentheses). *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Panel A: Comparison of Means across Matched Samples in Year t-1

	Matched Sample 1		Matched Sample 2	
	Treatment Group Obs. = 1682	Control Group Obs. = 1682	Treatment Group Obs. = 1577	Control Group Obs. = 1577
Propensity Score	0.374	0.376	0.387	0.381
Log Assets	5.375	5.369	5.449	5.392
Profitability	0.128	0.130	0.132	0.127
Tangible Assets	0.418	0.425	0.427	0.428
Market-to-Book	1.431	1.423	1.442	1.453
Dividend Payer			0.639	0.637
Modified Z-Score			1.912	1.885

Panel B: Alcohol mandate adoption and Financial Leverage

	Matched Sample 1		Matched Sample 2	
	Book Leverage (1)	Market Leverage (2)	Book Leverage (3)	Market Leverage (4)
Alcohol mandate x Post	0.011**	0.008**	0.012**	0.008**
	(0.004)	(0.004)	(0.005)	(0.004)
Control Variables	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R^2	0.722	0.900	0.723	0.900
Observations	21416	21416	21097	21097

Table 7:
Adoption of Alcohol Treatment Mandate and Financial Leverage: Cross-section

This table reports results from OLS regressions on cross-section driving the relationship between financial leverage and adoption of alcohol mandate for Compustat industrial firms from 1966 to 1993. The dependent variable in columns 1 to 4 is *Book Leverage* and in columns 5 to 8 is *Market Leverage*. *Alcohol mandate* is an indicator variable equal to one if the firm is headquartered in a state which adopts alcohol abuse treatment mandate , and zero otherwise. We interact Alcohol dummy with four variables each measured one year before the adoption of alcohol mandate: (1) *High Alcohol*$_{t-1}$ dummy identifies the states with ethanol consumption per capita in above top quartile (2) *High Mobility* identifies three-digit industries with above-median labour mobility. Mobility is an index which captures occupation dispersion within each three-digit SIC industry and serves as the proxy for labor mobility (Donangelo (2014)). The measure spans 1990 to 2011. We create a single measure that is used for the entire sample period by averaging this labor mobility measure, (3) *Small* dummy identifies firms with below-median number of employees. (4) *Other Firms (High)* identifies firms with above-median number of firms in same state and same SIC two-digit industry. The control variables include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. For market leverage, we control for market fluctutations-which can potentially have nonlinear effects on leverage-using 100 dummy variables, one for each percentile of the market equity distribution. Appendix Table B1 provides variable definitions. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles, and dollar values are expressed in 2000 dollars. Standard errors are clustered at the state level and are displayed in parentheses). *, **, and *** denote significance at the 10%, 5%, and 1% level,respectively.

	Book Leverage				Market Leverage			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Alcohol mandate x High Alcohol$_{t-1}$	0.014**				0.006			
	(0.006)				(0.005)			
Alcohol mandate x High Mobility		0.010**				0.001		
		(0.004)				(0.004)		
Alcohol mandate x Small (Employees)			0.025**				0.012*	
			(0.005)				(0.007)	
Alcohol mandate x Small x Other Firms (High)				0.028**				0.040**
				(0.013)				(0.016)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry*Year Fixed Effects	Yes	No	Yes	Yes	Yes	No	Yes	Yes
State*Year Fixed Effects	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Adjusted R^2	0.771	0.724	0.723	0.724	0.897	0.893	0.893	0.893
Observations	37183	33195	37085	37085	37183	33195	37085	37085

Table 8:
Financial Constraints

This table reports results from OLS regressions on cross-section of financially constrained firms driving the relationship between financial leverage and adoption of alcohol mandate. The sample includes Compustat industrial firms from 1966 to 1993. The dependent variable in columns 1 to 4 is *Book Leverage* and in columns 5 to 8 is *Market Leverage*. *Alcohol mandate* is an indicator variable set to one if a firm is headquartered in a state that adopts the alcohol mandate in the current year and zero otherwise. We interact Alcohol dummy with four variables each measured one year before the adoption of alcohol mandate: (1) Young is defined as below median firms based on age of the firm since incorporation (2) Small is defined as below median firms based on total assets of the firm (3) HP Index is an index for financially constrained firms developed by Hadlock and Pierce (2010) and (4) No Profit is defined as firms with negative profitability in the year before alcohol mandate adoption. The control variables include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. For market leverage, we control for market fluctutations-which can potentially have nonlinear effects on leverage-using 100 dummy variables, one for each percentile of the market equity distribution. Appendix Table B1 provides variable definitions. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles, and dollar values are expressed in 2000 dollars. Standard errors are clustered at the state level and are displayed in parentheses). *, **, and *** denote significance at the 10%, 5%, and 1% level,respectively.

	Book Leverage				Market Leverage			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Alcohol mandate x Young	0.016**				0.008**			
	(0.006)				(0.003)			
Alcohol mandate x Small		0.026***				0.013**		
		(0.005)				(0.006)		
Alcohol mandate x HP Index			0.023***				0.017*	
			(0.006)				(0.010)	
Alcohol mandate x No profit				0.022**				0.010
				(0.008)				(0.010)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State*Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.720	0.721	0.695	0.720	0.891	0.891	0.886	0.891
Observations	37150	37150	22000	37079	37145	37145	21946	37074

Table 9:
Alcohol mandate adoption and Operating Costs

This table reports results from OLS regressions adoption of alcohol mandate and operating costs for Compustat industrial firms from 1966 to 1993. *Ln(1+Operating Costs)* is natural logarithm of one plus annual operating costs where where operating costs is cost of goods sold (COGS) plus selling, general, and administrative expenses (XSGA). *Alcohol mandate* is an indicator variable set to one if a firm is headquartered in a state that adopts the alcohol abuse treatment mandate and zero otherwise. Mobility is an index which captures occupation dispersion within each three-digit SIC industry and serves as the proxy for labor mobility (Donangelo (2014)). For the continuous measure of Mobility, we create an indicator variable (*High mobility*) that is set to one if the value of the index is above the sample median between 1990 and 2000 and zero otherwise. The control variables include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. Appendix Table B1 provides variable definitions. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles, and dollar values are expressed in 2000 dollars. Standard errors are clustered at the state level and are displayed in parentheses). *, **, and *** denote significance at the 10%, 5%, and 1% level,respectively.

	Dependent Variable: Ln(1+ Operating Costs)			
	(1)	(2)	(3)	(4)
Alcohol mandate	-0.025**	-0.024**		
	(0.012)	(0.012)		
Alcohol mandate x High mobility			-0.076***	-0.075***
			(0.017)	(0.016)
Book Leverage		-0.138***		-0.070
		(0.022)		(0.045)
Control Variables	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	No	No
Firm Fixed Effects	Yes	Yes	Yes	Yes
State*Year Fixed Effects	No	No	Yes	Yes
Adjusted R^2	0.980	0.980	0.982	0.982
Observations	80769	80769	33147	33147

Table 10:
Alcohol mandate adoption, Employment and Wages

This table reports results from OLS regressions on economic mechanism driving the relationship between financial leverage and adoption of alcohol mandate for Compustat industrial firms from 1966 to 1993.The dependent variables are as follows: Ln(employment), Ln(wages) and Ln(wages/employmees). *Alcohol mandate* is an indicator variable set to one if a firm is headquartered in a state that adopts the alcohol mandate and zero otherwise. Control variables include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. All regressions use three-digit SIC classification in fixed effects wherever specified. Appendix Table B1 provides variable definitions. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles, and dollar values are expressed in 2000 dollars. Standard errors are clustered at the state level and are displayed in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level,respectively.

	Ln(emp)	Ln(wages)	Ln(wage/emp)	Ln(emp)	Ln(wages)	Ln(wage/emp)
	(1)	(2)	(3)	(4)	(5)	(6)
Alcohol mandate	-0.009	-0.055***	-0.011	-0.009	-0.050**	-0.008
	(0.010)	(0.017)	(0.007)	(0.011)	(0.019)	(0.008)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	No	No	No
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry*Year Fixed Effects	No	No	No	Yes	Yes	Yes
Adjusted R^2	0.977	0.992	0.876	0.979	0.993	0.903
Observations	76980	13289	13080	76496	12099	11908

Table 11:
Adoption of Alcohol mandate and Financial Leverage: Coincidental Law Changes

This table reports results from robustness tests relating financial leverage to the adoption of state private health insurance alcohol mandate.The sample consists of Compustat industrial firms spanning over 1966 to 1993. The dependent variable in panel A is *Book Leverage* and *Market Leverage* in panel B. Pre^{-2} is an indicator variable set to one if a firm will adopt the alcohol mandate in two or more years and zero otherwise. $Alcohol^{0}$ is an indicator variable set to one if a firm is headquartered in a state that adopts the alcohol mandate in the current year and zero otherwise. $Post^{1+}$ is an indicator variable set to one if a firm is headquartered in a state that adopted this mandate one year (or more years) ago and zero otherwise. Control variables include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. All regressions use three-digit SIC classification in fixed effects. For market leverage, we control for market fluctutations-which can potentially have nonlinear effects on leverage-using 100 dummy variables, one for each percentile of the market equity distribution. Appendix Table B1 provides variable definitions. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles. Standard errors are clustered at the state level (p-values are in parentheses). *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	Panel A: Book Leverage					
	(1)	(2)	(3)	(4)	(5)	(6)
Pre^{-2}	-0.001	-0.001	-0.002	-0.001	-0.001	-0.001
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
$Alcohol\ mandate^{0}$	0.005**	0.005**	0.006***	0.005**	0.005**	0.006**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
$Post^{1+}$	0.006*	0.005**	0.006**	0.005*	0.005**	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Branch reform	-0.000					0.000
	(0.003)					(0.003)
Interstate reform	-0.002					-0.003
	(0.003)					(0.003)
Business combination		0.006*				0.006*
		(0.003)				(0.003)
Good faith law			0.005			0.005
			(0.005)			(0.005)
Implied contract law			-0.002			-0.002
			(0.003)			(0.003)
Public policy law			0.005*			0.005*
			(0.003)			(0.003)
Right-to-work law				-0.011		-0.011
				(0.012)		(0.012)
Inevitable Disclosure Doctrine					0.002	0.001
					(0.004)	(0.004)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry*Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.723	0.723	0.723	0.723	0.723	0.723
Observations	80353	80353	80353	80353	80353	80353

Table 11:
Continued.

	Panel B: Market Leverage					
	(1)	(2)	(3)	(4)	(5)	(6)
Pre^{-2}	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Alcohol mandate^{0}	0.004	0.004*	0.004*	0.004*	0.004*	0.004*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
$Post^{1+}$	0.006*	0.005**	0.006**	0.005*	0.005**	0.006**
	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
Branch reform	0.000					0.001
	(0.002)					(0.002)
Interstate reform	-0.004*					-0.004*
	(0.002)					(0.002)
Business combination		0.006*				0.006*
		(0.003)				(0.003)
Good faith law			0.001			0.001
			(0.004)			(0.004)
Implied contract law			-0.000			-0.000
			(0.002)			(0.002)
Public policy law			0.002			0.002
			(0.003)			(0.002)
Right-to-work law				-0.003		-0.003
				(0.008)		(0.008)
Inevitable Disclosure Doctrine					-0.000	-0.001
					(0.003)	(0.003)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry*Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.890	0.890	0.890	0.890	0.890	0.890
Observations	80353	80353	80353	80353	80353	80353

Table 12:
Adoption of Alcohol mandate and Financial Leverage: Additional Robustness Tests

This table reports results from OLS regressions relating financial leverage to the adoption of state private health insurance alcohol mandate.The sample consists of Compustat industrial firms spanning over 1966 to 1993. The dependent variables are *Book Leverage* and *Market Leverage*. *Alcohol mandate* is an indicator variable set to one if a firm is headquartered in a state that adopts the alcohol mandate in the current year and zero otherwise. Control variables include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. Appendix Table B1 provides variable definitions. Columns (1) and (2) we control for alcohol consumption per capita. In columns(3) and (4) we restrict the sample to domestic firms while in column (5) and (6) include additional firm controls i.e., Log(K/L), HHI index, Log(number of employees). In columns (7) and (8) includes additional state controls i.e., budget surplus, tax revenue, debt outstanding, all scaled by state GDP, proportion of employees with union membership. Columns (9) and (10) controls for size effects , columns (11) and (12) we replace industry classification to two-digit SIC classification and columns(13) and (14) we extend the sample period until the year 2000 . In columns (15) and (16), we include firms in retail and wholesale industries while in columns (17) and (18), we include differential trends for treated and control firms. In columns(19) and (20), we restrict the sample to firms with more than 50 employees , in columns(21) and (22) we restrict the sample to firms existing one year before alcohol mandate adoption, in columns(23) and (24) we drop firms that relocate their headquarters ,in columns(25) and (26) we drop firms with more than 100% sales and asset growth , in columns(27) and (28) we replace the treatment state with state where maximum employees are located for each firm, in columns(29) and (30) we drop firms located in Nevada and in columns(31) and (32) we drop firms which operate in alcohol related industries. Standard errors are clustered at the state level (reported in parentheses). *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	Alcohol consumption		Domestic firms		Firm controls		State controls		Size effects		SIC2*Year		Till 2000		Incl. Retail	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Alcohol mandate	0.006**	0.005**	0.006**	0.008**	0.007**	0.005**	0.005*	0.004**	0.006**	0.005**	0.007***	0.007***	0.008**	0.005*	0.005*	0.003
	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.002)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.714	0.887	0.714	0.883	0.721	0.893	0.714	0.887	0.719	0.889	0.720	0.888	0.684	0.875	0.709	0.887
Observations	80819	80819	37881	37856	76906	76906	80819	80819	80819	80819	80769	80769	112877	112877	93758	93758

	Incl. trends		More than 50		Pre-mandate firms		Relocation		Merger		Max Emp State		Drop Nevada		Drop Alcohol	
	Book	Market	Book	Market	Book	Market	Book	Market	Book	Market	Book	Market	Book	Market	Book	Market
	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
Alcohol mandate	0.006**	0.004**	0.006**	0.004**	0.005*	0.004**	0.008**	0.005**	0.006**	0.005*	0.004**	0.006***	0.008**	0.006***	0.008**	0.006**
	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.714	0.887	0.757	0.905	0.729	0.895	0.721	0.888	0.730	0.890	0.715	0.888	0.714	0.888	0.714	0.887
Observations	80819	80819	70140	70140	35904	35881	72302	72302	71366	71366	81530	81530	80269	80269	80769	80769

Internet Appendix for

Health care costs, Worker mobility and Firm leverage: Evidence from state health mandates

S.Lakshmi Naaraayanan Manpreet Singh

A1 Employer-provided health insurance and worker mobility

Employee benefits are intended to promote economic security by insuring against uncertain events and to raise living standards by providing targeted services. In US most employment-based benefits, such as pensions and health insurance, are provided voluntarily by businesses.[30]

Health care costs remained an important issues in post world-war US.[31] As per a survey conducted by the Kaiser Family Foundation in 2016, that included more than 1,900 interviews with non-federal public and private firms, annual premiums for employer-sponsored family health coverage reached $18,142 in 2016, up 3 percent from 2015, with workers on average paying $5,277 towards the cost of their coverage.[32]

The restriction of health insurance purchase to the workplace setting has potentially quite important implications for the functioning of the US labor market. Workplace pooling has been cited as a cause of potential labor market inefficiencies through reduced mobility. President Clinton said in motivating his health care reform plan of 1994: "Worker mobility is one of the most important values in an entrepreneurial society, where most jobs are created by small businesses. The present health care system is a big brake on that" (Holtz-Eakin, 1994). Workers are said to be "locked" into their jobs for fear of losing health insurance, and may be reticent to switch jobs, even if they have opportunities for higher productivity matches.[33]

In this study we focus on period before 1994 and argue how health insurance-induced 'job-lock' of workers affects firms capital structure decisions.

A1.1 Importance of Employer-provided health insurance in US

In 1993, end of our sample period, 144.5 million or 63.5% of the non-elderly population, were covered by private health insurance. Of that total, 90% were covered through employer-provided insurance, roughly one-half in their own name and one-half through others. Traditionally, there were two types of private insurance plans. Blue Cross/Blue Shield plans, which dominated insurance markets in the pre-war period, charged "community rated" insurance premiums, whereby employers paid only the average expenditure for a broad risk class. Beginning in the 1940s, there was a rapid growth in commercial insurance companies who "experience rated" their customers, charging firms based on their actual (projected and past) cost experience. By the late 1980s, most Blue Cross/Blue Shield plans had also moved to experience rating for all large groups, and even for some smaller groups as well. Experience rating has been taken a step further by the growth in self-insurance of medical expenses across firms. In 1993, 19% of all firms self-insured, and 63% of firms with more than 500 employees did so. As a result of experience rating, there is tremendous dispersion in the cost of health insurance across firms, as documented by Cutler (1994). He finds

[30] The history of employee benefits programs goes back to colonial times like Plymouth Colony settlers' military retirement program in 1636. Moreover, voluntary employment-based benefit programs became more prevalent as federal tax preferences for employee benefits coincided with rising tax rates, strengthening incentives to provide private benefits (EBRI, 2011).

[31] See details at:https://en.wikipedia.org/wiki/History_of_health_care_reform_in_the_United_States

[32] Both the percentage of employers who offer insurance and the percentage of people covered will be important to watch as the changes brought about by the Affordable Care Act (ACA) continue to unfold. There are differences in Employer-Sponsored Insurance (ESI) offer rates based on household income. Workers in higher income households, (those that earn more than four times the federal poverty level (FPL)) are most likely to receive an offer of ESI (78%), whereas workers in households with lower incomes (those that earn less than the FPL) are least likely to receive an offer of ESI (30%).

[33] As a result, a central feature of Clinton's proposed plan was a universal employer mandate, which would have made it possible for workers to maintain insurance coverage when they switched jobs, and guaranteed health insurance for those moving into the labor force.

that, for employer provided individual insurance plans, the premium at the 90th percentile of the premium distribution is 2.5 times as large as the premium at the 10th percentile. Only a small share of this substantial variation can be explained by plan features, suggesting that most is due to experience rating.

In addition to experience rating, there are two more reasons why the workplace the predominant source of private health insurance in the US. The first is workplace pooling economies. Large workplace pools also provides a means for individuals to purchase insurance without the adverse selection premium that insurers demand in the individual health insurance marketplace, since the unobservable components of health will average to zero in large groups fored for purposes other than obtaining health insurance. Cutler (1994) reports that the dispersion in health insurance premiums is much greater for small firms that for larger ones, which is consistent with greater adverse selection problems in the small group market.

The second reason is tax deductibility of employer insurance purchases. Employer payments for insurance are not treated as taxable income to employees, unlike wages, which are taxed by both the OASDI payroll tax, and state and federal income taxes. Gruber and Poterba (1996) estimate that relative price of insurance at the workplace is 27% lower as a result of this tax subsidy. Note that Section 89 of IR code make it illegal to offer insurance selectively to highly compensated employees in the firm.

Finally, it is important to highlight that insurance at even the smallest firms, and those that provide the least generous policies, is cheaper and more comprehensive than the typical individual insurance policy. Individual insurance generally costs at least 50% more than group policies. Moreover, individual policies are much less generous along a number of dimensions. Relative to group policies, non-group policies are only half as likely to have major medical coverage, coverage for physician visits, or coverage of prescription drugs; they are only two-thirds as likely to receive ambulance, mental health, and outpatient diagnostic service coverage (Culyer and Newhouse, 2000).

A1.2 Worker mobility

As mentioned earlier, workplace pooling has been cited as a cause of potential labor market inefficiencies through reduced mobility. Concerns over "job lock", or health insurance-induced reductions in worker mobility, were a driving force behind calls for comprehensive health reform in 1994, and have motivated partial reforms of the individual insurance market. Theoretically it is important to understand how health insurance, a voluntarily provided form of employee compensation, create imperfection in functioning of labour market.

In a highly stylized example it can be shown that with certain assumptions there is no distortionary effect of health insurance on the labour market (Rosen, 1986; Culyer and Newhouse, 2000). The example assumes that firms purchase insurance on worker-by-worker basis, insurance is perfectly experience rated at worker level, firms can choose to offer insurance to some workers and not others and can offer lower wages to those workers whose insurance costs more. Under these assumptions, individual can move to different jobs based on job-specific match and can ask the new employer to provide insurance and adjust wages accordingly.

The real world, however, departs from the model in at least two ways. Firstly, employers can not choose to provide insurance to some workers and not to others. The favorable tax treatment, as per Internal Revenue Code, is valid only if employer provides insurance to most of its workers. Second, as discussed before, employers differ dramatically in the underlying costs of providing health insurance. As a result, there will be matching of workers not only on the basis of worker skills and job-specific requirements, but also based on cost of health insurance. So, there will be

a matching of those workers who most desire health insurance coverage with those firms who can provide that insurance more cheaply.

In such a scenario job lock arises when worker wants to move to more productive job, but can not move to new employer because the new employer can not provide insurance at equal or lower cost. The high cost might arise from a high loading factor, or from the fact that the firm has a relatively unhealthy workforce and is experience rated.

In this paper we document the effect of high cost state health mandates, that increase the cost of insurance of both private and employer sponsored insurance, on firm policies. The increase in insurance cost creates a "job-lock" for workers and hence reduces the operating leverage and hence firm can increase financial leverage. In following sub-section we discuss the state health mandates in detail.

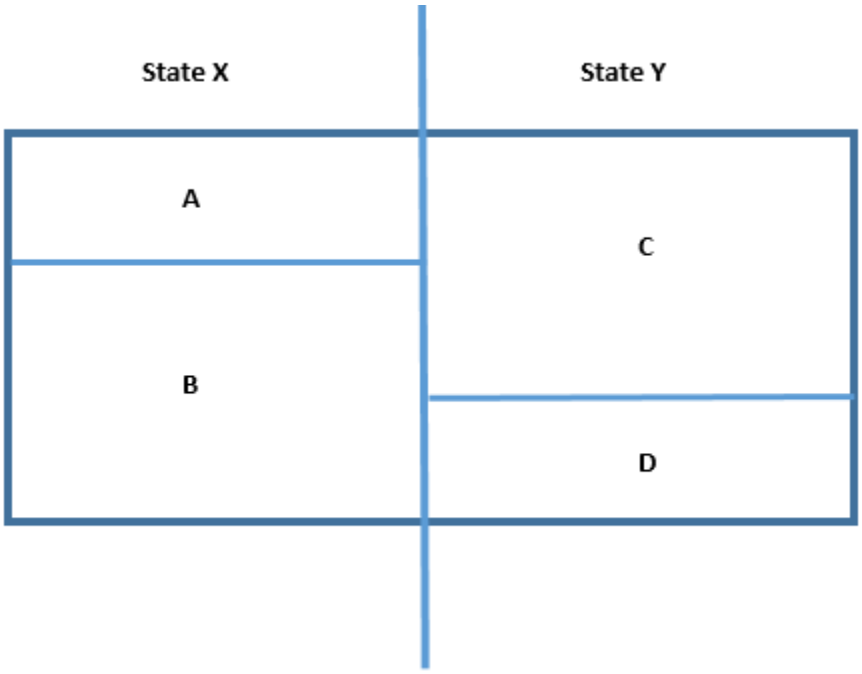
A1.3 State health mandates and labor market equilibrium

In 1970s, the rising number of uninsured was the important reason for introduction of state health mandates. Firms tried to keep their labour cost low by providing insurance contracts that do not cover expensive medical services. State governments have been relying on conventional mandates to regulate the terms of coverage in the plans sold by private insurers for over four decades. These laws initially consisted of mandatory-inclusion provisions. If insurance was sold in the state, it had to include coverage for the legislated provider type, service, or subscriber cohort. Thus, a broad mandate to workers would potentially go a long way towards eradicating the problem of uninsurance. Moreover, in the era of tight fiscal budget constraints, an "off-budget" approach such as a mandate was politically appealing. It is perhaps for this reason that an employer mandate was the centerpiece of the Clinton health care reform effort of 1994. Recently, Antwi and Maclean (2017) finds that employers adjust both wages and labor demand to offset mandate costs.

B1 Bordering county matching procedure

We carefully construct the treatment and control groups paying attention to several issues. First, a county adopting the alcohol mandate is a potential candidate to serve as a control later, when the neighboring county, which initially served as control, itself adopts the mandate. For example, in 1978 Minnesota adopted the alcohol abuse treatment mandate. In 1985, North Dakota, which borders Minnesota, also adopted the mandate. Although the Minnesota counties on the North Dakota border were treated in 1978 arguably a sufficient amount of time had elapsed by 1985 to permit them to serve as controls.

Second, a treated border county can be a neighbor to multiple contiguous counties in the adjacent state. As an illustration, consider the case for county B in state X, which borders both counties C and D in state Y. In our approach, we allow both counties C and D to serve as controls for county B when state X adopts the alcohol mandate. That is, B, C, and D form a "group" of contiguous border counties, with B being treated and C and D serving as controls.[34]



[34]This approach is standard paradigm in studies implementing a border discontinuity research design. See for example Dube, Lester, and Reich (2010) and Ljungqvist and Smolyansky (2014)

Table A1:
State private health insurance high cost mandate effective dates

State	Alcohol treatment mandate	Illicit drug treatment mandate	Mental health treatment mandate	Chiropractor mandate	Continuing coverage mandate
AK	1989	1989		1984	
AL				1975	
AR				1971	1979
AZ				1983	
CA				1969	1985
CO			1976	1975	1986
CT	1977		1971	1989	1975
DE				1963	
FL				1974	
GA				1980	1986
HI					
IA					1987
ID					
IL	1972			1969	1984
IN				1974	
KS	1978	1978	1978	1973	1978
KY				1986	1980
LA				1975	
MA	1976		1976	1985	
MD	1981	1979	1973	1974	
ME	1984	1984	1984	1981	
MI	1982	1982		1968	
MN	1978	1978		1973	1974
MO	1977			1976	1985
MS	1975			1980	
MT	1984	1984	1984	1967	
NC				1977	1982
ND	1985	1985	1985		1983
NE				1975	
NH			1976	1969	1981
NJ	1977				
NM				1973	1983
NV	1985	1985		1975	1988
NY	1981	1988		1973	1986
OH	1979		1979	1969	
OK				1971	1976
OR	1984	1984	1984		1982
PA	1986			1971	
RI	1980	1988		1968	1977
SC					1979
SD				1970	1984
TN				1981	1981
TX	1986	1990		1977	1981
UT				1975	1986
VA	1978	1978	1977	1973	1986
VT	1986				1986
WA	1975	1975		1971	
WI	1975	1975	1971	1988	1980
WV					
WY					

Table A2:
Summary Statistics

This table reports summary statistics for the main variables in the regression models. Panel A presents summary statistics for Compustat industrial firms (excluding firms operating in retail and wholesale industries) spanning over 1966 to 1993. Panel B reports univariate results comparing the mean (median in parentheses) values of variables for treatment (firms headquartered in states that eventually adopt the alcohol treatment mandate) and control firms (firms headquartered in states that never adopt this mandate). In the last column, we report the difference in mean (median in parentheses) values between control and treatment firms. In Panel B, *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively, for t-test (z-test) of whether the two samples have equal means (medians). The sample consists of Compustat industrial firms (excluding financials and utilities) over the 1966 to 1993 period and includes 80,819 firm-year observations. Continuous variables, except economic variables, are winsorized at their 1st and 99th percentiles, and dollar values are expressed in 2000 dollars. Appendix Table B1 provides variable definitions.

Panel A: Summary Statistics					
	Mean	Std. Dev.	P25	Median	P75
Dependent variables					
Book Leverage	0.257	0.186	0.101	0.245	0.388
Market Leverage	0.298	0.246	0.073	0.255	0.484
Employment	6821	27762	235	1021	3918
Wages (in 000's)	845	2753	49	180	660
High-cost mandates					
Alcohol	0.413	0.492	0.000	0.000	1.000
Mental health	0.184	0.387	0.000	0.000	1.000
Chiropractor	0.744	0.436	0.000	1.000	1.000
Continuing coverage	0.356	0.479	0.000	0.000	1.000
Illicit drug	0.156	0.363	0.000	0.000	0.000
Control variables					
Log Assets	4.945	2.105	3.474	4.843	6.351
Profitability	0.104	0.176	0.071	0.130	0.188
Tangibile Assets	0.372	0.244	0.184	0.314	0.529
Market-to-Book	1.665	1.562	0.940	1.170	1.713
Modified Z-Score	1.794	2.037	1.033	2.116	2.914
Dividend Payer	0.520	0.500	0.000	1.000	1.000
Debt Rating(1=yes)	0.070	0.256	0.000	0.000	0.000
Log(State Per Capita GDP)	-3.425	0.140	-3.535	-3.415	-3.314
State GDP Growth	2.096	3.308	0.077	2.191	4.136
Political Balance	0.589	0.492	0.000	1.000	1.000

(Continued)

Panel B: Comparing Sample Means for Treatment and Control Firms			
	Control Sample (Obs. = 47513) (1)	Treatment Sample (Obs. = 33306) (2)	Difference of means (medians) (1)-(2)
Dependent variables			
Book Leverage	0.261	0.242	(0.019)***
	(0.253)	(0.228)	(0.025)***
Market Leverage	0.305	0.280	(0.025)***
	(0.267)	(0.233)	(0.034)***
Control Variables			
Log Assets	5.056	4.805	(0.251)***
	(4.960)	(4.650)	(0.031)***
Profitability	0.116	0.092	(0.024)***
	(0.134)	(0.126)	(0.008)***
Tangible Assets	0.394	0.344	(0.050)***
	(0.335)	(0.292)	(0.043)***
Market-to-Book	1.635	1.691	(-0.056)***
	(1.153)	(1.193)	(-0.040)***
Modified Z-Score	1.865	1.741	(0.124)***
	(2.130)	(2.119)	(0.011)***
Dividend Payer	0.548	0.499	(0.049)***
	1.000	0.000	(1.000)***
Debt Rating(1=yes)	0.033	0.118	(-0.085)***
	0.000	0.000	(0.000)***
Log(State Per Capita GDP)	-3.446	-3.401	(-0.045)***
	-3.434	-3.394	(-0.040)***
State GDP Growth	2.055	2.114	(-0.059)***
	2.048	2.211	(-0.163)***
Political Balance	0.524	0.685	(0.161)***
	1.000	1.000	(0.000)***

Table A3:
Adoption of High-cost state health insurance mandates and labor supply of workers

This table reports results from OLS regressions that estimate the impact of adoption of state private health insurance mandates on the labor supply and income of individuals. The sample comes from the Census' Survey of Income and Program Participation and spans the period 1983 to 1993. The sample comes from the Census' Survey of Income and Program Participation and spans the period 1983 to 1993. It includes individuals who are 18+ years old who are observed at least five times during the sample period. We only include individuals who receive their health insurance from employer. We exclude individuals who may receive their health insurance from spouse's employer, Medicare, Medicaid or other state-sponsored insurance programs. We use three dependent variables in this table: (a) Log(Number of Hours worked), (b) Log(Wage Rate), and (c) Log(Income). The high cost mandated benefits we study are: Alcohol abuse treatment (*Alcohol mandate*), Mental health treatment (*Mental health mandate*), Chiropractors (*Chiropractor mandate*), Continuing coverage for terminated employees and their dependents (*Continuing coverage mandate*), and Illicit drug abuse treatment (*Illicit drug mandate*). Pre^{-2} is an indicator variable set to one if a firm is headquartered in a state that will adopt the alcohol mandate in two years (or more) and zero otherwise. *Alcohol mandate*^{0} is an indicator variable set to one if a firm is headquartered in a state that adopts the alcohol mandate in the current year and zero otherwise. *Alcohol mandate*$^{k+}$ is an indicator variable set to one if a firm is headquartered in a state that adopted this mandate k (or more) years ago and zero otherwise. The control variables are: *Log(Income)*, the natural logarithm of the individual's average monthly income recorded in the previous survey (in $); *Log(Age)*, the natural logarithm of the age of the individual recorded in the previous survey; *State GDP Growth*, the annual GDP growth rate in the state; *Political Balance*, the fraction of a state's congress members representing their state in the U.S. House of Representatives that belong to the Democratic Party. Dollar values are expressed in 2000 dollars. Each model includes individual fixed effects and year-quarter fixed effects. Standard errors are corrected for heteroskedasticity and clustering at the state level are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table A3:
Continued.

	Hours worked (1)	Wage Rate (2)	Income (3)	Hours worked (4)	Wage Rate (5)	Income (6)
Pre^{-2}	0.007	-0.070	0.042	-0.035	-0.082**	-0.030
	(0.048)	(0.052)	(0.067)	(0.027)	(0.040)	(0.036)
Alcohol $mandate^{0}$	-0.017	0.006	-0.027	-0.007	0.005	-0.018
	(0.052)	(0.015)	(0.065)	(0.040)	(0.015)	(0.042)
Alcohol $mandate^{1+}$	-0.001	0.009	-0.029	0.014	0.007	0.005
	(0.074)	(0.021)	(0.108)	(0.057)	(0.022)	(0.078)
Alcohol $mandate^{2+}$	0.034	-0.021	0.048	0.051	-0.016	0.087
	(0.097)	(0.028)	(0.146)	(0.079)	(0.025)	(0.105)
Alcohol $mandate^{3+}$	0.100	0.016	0.147	0.135	0.020	0.222*
	(0.102)	(0.043)	(0.155)	(0.082)	(0.037)	(0.117)
Alcohol $mandate^{4+}$	0.160	0.028	0.228	0.186**	0.026	0.297***
	(0.104)	(0.052)	(0.154)	(0.077)	(0.048)	(0.108)
Alcohol $mandate^{5+}$	0.188*	0.040	0.238	0.162**	0.029	0.215**
	(0.107)	(0.048)	(0.162)	(0.071)	(0.045)	(0.098)
Mental health mandate	0.146	-0.027	0.228*	0.038	-0.040	0.050
	(0.090)	(0.040)	(0.129)	(0.056)	(0.041)	(0.065)
Chiropractor mandate	-0.087	-0.002	-0.166*	-0.058	-0.006	-0.104
	(0.068)	(0.016)	(0.095)	(0.071)	(0.017)	(0.098)
Continuing coverage mandate	-0.011	0.005	-0.036	0.015	0.005	0.015
	(0.032)	(0.028)	(0.048)	(0.025)	(0.028)	(0.033)
Illicit drug mandate	0.069	0.036	0.156	0.007	0.023	0.034
	(0.093)	(0.025)	(0.125)	(0.060)	(0.027)	(0.073)
Other Mandates	Yes	Yes	Yes	Yes	Yes	Yes
Control Variables	No	No	No	Yes	Yes	Yes
Individual Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.505	0.776	0.512	0.602	0.783	0.674
Observations	171011	171505	171505	168964	169432	169432

Table A4:
Effect of Alcohol Mandate on financial leverage measured using only long-term debt

This table reports results relating financial leverage to the adoption of state private health insurance alcohol mandate. The sample spans 1966-1993 period. The dependent variables are *Long-Term Book Leverage* (models 1 and 2) and *Long-Term Market Leverage* (models 3 and 4). Long-Term Book Leverage is the book value of long-term debt (dltt) plus the current portion of long-term debt (dd1) divided by book value of assets (at). Long-Term Market Leverage is the book value of long-term debt (dltt) plus the current portion of long-term debt (dd1) divided by market value of assets (prcc_f*csho + td). *Alcohol mandate* is an indicator variable equal to one if the firm is headquartered in a state which adopts alcohol abuse treatment mandate , and zero otherwise. Control variables include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. All regressions use three-digit SIC-industry year fixed effects (wherever specified). Appendix Table B1 provides variable definitions. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles. Standard errors are clustered at the state level (p-values are in parentheses). *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	Long-Term Book Leverage		Long-Term Market Leverage	
	(1)	(2)	(3)	(4)
Alcohol mandate	0.010***	0.007**	0.007*	0.006**
	(0.003)	(0.003)	(0.004)	(0.003)
Control Variables	No	Yes	No	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Industry*Year Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R^2	0.668	0.715	0.743	0.841
Observations	83321	80353	83321	80353

Table A5:
Alternative definitions of financial leverage

This table reports results from OLS regressions relating financial leverage to the adoption of alcohol treatment mandate. The sample consists of Compustat industrial firms spanning over 1966 to 1993. The dependent variable in column 1 is *Log(1+Total Debt)* is the natural logarithm of one plus the book value of long-term debt plus debt in current liabilities and is expressed in 2000 dollars; in column 2 is *Book Leverage*; in column 3, *Net Book Leverage* which is the book value of long-term debt plus debt in current liabilities less the book value of cash and short-term investments divided by the book value of assets; and in column 4, *Book Leverage with Leases* is the book value of long-term debt plus debt in current liabilities plus the value of leases (xrent*10) divided by the book value of assets plus the value of leases. The dependent variable in column 5 is *Market Leverage*; in column 6, *Net Market Leverage* which is the book value of long-term debt plus debt in current liabilities less the book value of cash and short-term investments divided by the market value of debt and equity; and in column 7, *Market Leverage with Leases* is the book value of long-term debt plus debt in current liabilities plus the value of leases (xrent*10) divided by the market value of debt and equity plus the value of leases. *Alcohol mandate* is an indicator variable equal to one if the firm is headquartered in a state which adopts alcohol abuse treatment mandate , and zero otherwise. Control variables include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. The regressions include three digit SIC-year fixed effects wherever specified. Appendix Table B1 provides variable definitions. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles. Standard errors are clustered at the state level and are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

		Book Leverage			Market Leverage		
	Log(1+ Total Debt)	Book Leverage	Net Leverage	With leases	Market Leverage	Net Leverage	With leases
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Alcohol mandate	0.041**	0.006**	0.011***	0.007*	0.006**	0.015***	0.008**
	(0.018)	(0.003)	(0.004)	(0.004)	(0.002)	(0.004)	(0.003)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry*Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.939	0.723	0.768	0.724	0.890	0.785	0.894
Observations	80353	80353	79041	80353	80353	79041	80353

Table A6:
Effect of Lowering Minimum Purchase Age for Alcohol

This table reports results relating financial leverage to the adoption of state private health insurance alcohol mandate. The sample spans 1966-1986 period. The dependent variables are *Book Leverage* (models 1 and 2) and *Market Leverage* (models 3 and 4). In columns (2) and (4), we drop those states which raise their minimum purchase age for alcohol before the passage of the National Minimum Drinking Age Act. *Alcohol mandate* is an indicator variable equal to one if the firm is headquartered in a state that adopts alcohol abuse treatment mandate and zero otherwise. *Lower minimum age* is an indicator variable equal to one if the firm is headquartered in a state that lowers minimum age for purchase of alcohol between 1969 and 1978 and zero otherwise. Control variables include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. All regressions use three-digit SIC classification in fixed effects (wherever specified. Appendix Table B1 provides variable definitions. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles. Standard errors are clustered at the state level (p-values are in parentheses). *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	Book Leverage		Market Leverage	
	(1)	(2)	(3)	(4)
Alcohol mandate	0.002	0.001	-0.001	-0.002
	(0.003)	(0.003)	(0.003)	(0.003)
Alcohol mandate x Lower minimum age	0.008*	0.008*	0.012*	0.013*
	(0.005)	(0.005)	(0.007)	(0.008)
Lower minimum age	-0.002	-0.002	-0.011**	-0.010*
	(0.005)	(0.005)	(0.005)	(0.006)
Control Variables	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Industry*Year Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R^2	0.766	0.764	0.788	0.785
Observations	55684	51802	55684	51802

Table A7:
Alcohol Mandate Adoption, Operating Leverage and Productivity

This table reports results from OLS regressions relating operating leverage and earnings variability to the adoption of alcohol mandate for Compustat industrial firms from 1966 to 1993. The dependent variables in columns 1 to 4 are as follows: *Change in Log(EBIT)* is the one-year change in the natural logarithm of earnings before interest and taxes [ln($ebit_t$)-ln($ebit_{t-1}$)]; Total Factor Productivity (TFP), we follow İmrohoroğlu and Tüzel (2014) to estimate the three digit industry adjusted firm TFP. Pre^{-2} is an indicator variable set to one if a firm will adopt the alcohol mandate in two or more years and zero otherwise. $Alcohol^{0}$ is an indicator variable set to one if a firm is headquartered in a state that adopts the alcohol mandate in the current year and zero otherwise. $Post^{1+}$ is an indicator variable set to one if a firm is headquartered in a state that adopted this mandate one year (or more years) ago and zero otherwise. *Alcohol mandate* is an indicator variable set to one if a firm is headquartered in a state that adopts the alcohol mandate in the current year and zero otherwise. Control variables include *Firm size, Market-to-Book, Profitability, Fixed Assets, Dividend Payer, Modified Z-Score, Log(State Per Capita GDP),State GDP Growth, and Political Balance.* For TFP tests we exclude Modified Z-Score and Profitability from controls, and include Log(Number of Employees) and controls. Appendix Table B1 provides variable definitions. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles, and dollar values are expressed in 2000 dollars. Standard errors are clustered at the state level and are displayed in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level,respectively.

	Δ Log(EBIT)$_t$		TFP	
	(1)	(2)	(3)	(4)
Pre^{-2}	-0.011	-0.011	0.002	0.002
	(0.017)	(0.017)	(0.007)	(0.007)
Alcohol mandate^{0}	0.024	0.024	-0.001	0.001
	(0.020)	(0.020)	(0.006)	(0.006)
Post $^{1+}$	-0.010	-0.012	0.012*	0.014**
	(0.017)	(0.017)	(0.006)	(0.006)
Δ Log(Sales)	1.337***	1.327***		
	(0.044)	(0.045)		
Pre^{-2} x Δ Log(Sales)	-0.079	-0.078		
	(0.074)	(0.074)		
Alcohol mandate^{0} x Δ Log(Sales)	-0.214*	-0.216*		
	(0.121)	(0.122)		
Post $^{1+}$ x Δ Log(Sales)	0.032	0.032		
	(0.068)	(0.069)		
Book Leverage		0.210***		-0.37***
		(0.02)		(0.022)
Control Variables	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R^2	0.292	0.293	0.57	0.57
Observations	52754	52754	47570	47570

Table A8:
Adoption of Alcohol mandate and Financial Leverage: Effect of Union Membership

This table reports results relating financial leverage to the adoption of state private health insurance alcohol mandate. The sample period spans 1966-1993 period. *Alcohol mandate* is an indicator variable equal to one if the firm is headquartered in a state that adopts alcohol abuse treatment mandate, and zero otherwise. Mobility is an index which captures occupation dispersion within each three-digit SIC industry and serves as the proxy for labor mobility (Donangelo, 2014). For the continuous measure of Mobility, we create an indicator variable (*High Mobility*) that is set to one if the value of the index is above the sample median between 1990 and 2000 and zero otherwise. *Union Coverage* is the proportion of the firm's employees covered by collective bargaining by Industry in 1983. For the continuous measure of Union Coverage, we create an indicator variable (*High Union Coverage*) that is set to one if the value of the index is above the sample median and zero otherwise. Control variables include *Firm size, Market-to-Book, Profitability, Tangibility, Dividend Payer, Debt Rating, Modified Z-Score, Log(State Per Capita GDP), State GDP Growth, and Political Balance*. All regressions use three-digit SIC classification in fixed effects (wherever specified. Appendix Table B1 provides variable definitions. Continuous variables are winsorized at their 1^{st} and 99^{th} percentiles. Standard errors are clustered at the state level (p-values are in parentheses). *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	Book	Market	Book	Market	Book	Market
	(1)	(2)	(3)	(4)	(5)	(6)
Alcohol mandate	-0.000	0.004				
	(0.006)	(0.004)				
Alcohol mandate x High Union Coverage	0.006	0.000	0.006	0.000	0.006	0.002
	(0.007)	(0.007)	(0.007)	(0.006)	(0.010)	(0.009)
Alcohol mandate x High Union Coverage x High Mobility					0.007	-0.001
					(0.012)	(0.012)
Alcohol mandate x High Mobility					0.009	0.007
					(0.008)	(0.011)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry*Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
State*Year Fixed Effects	No	No	Yes	Yes	Yes	Yes
Adjusted R^2	0.725	0.891	0.727	0.890	0.728	0.891
Observations	53122	53122	53183	53183	52833	52833

Table B1:
Variable Definitions

Variable	Definition (Compustat designations in parentheses where appropriate)
Alcohol mandate	Equals 1 if state adopts Alcohol treatment mandate by year t
Book Leverage	Total debt/total assets(AT)
Book Leverage with leases	(Total debt+lease*10)/(total assets+lease*10) (TD+XRENT*10/AT+XRENT*10)
Branch reform	Equals 1 if state adopts bank branching reform by year t
Business Combination	Equals 1 if state adopts business combination laws by year t
Chiropractor mandate	Equals 1 if state adopts Chiropractor mandate by year t
Continuing coverage mandate	Equals 1 if state adopts Continuing coverage mandate by year t
Dividend payer	Equals 1 if firm is dividend payer (DVC>0)
Employment	Employment (emp)
Firm Size	Natural logarithm of total assets (log(AT))
Good faith law	Equals 1 if state adopts good faith law by year t
HHI(sales)	Herfindahl index based on sales
Illicit drug mandate	Equals 1 if state adopts Illicit drug treatment mandate by year t
Interstate reform	Equals 1 if state adopts interstate branching reform by year t
Investment	Capital investment/total assets (capx/AT)
Inevitable Disclosure Doctrine	Equals 1 if state court adopts the law by year t
Implied contract law	Equals 1 if state adopts implied contract law by year t
Long-Term Book Leverage	Book value of long-term debt (DLTT) plus the current portion of long-term debt (DD1) divided by book value of assets (AT) ((DLTT+DD1)/AT)
Long-Term Market Leverage	Book value of long-term debt (DLTT) plus the current portion of long-term debt (DD1) divided by market value of assets ((DLTT+DD1)/(PRCC_F*CSHO + TD))
Market Leverage	Total debt/(Total debt+PRCC_F∗CSHO)
Market Leverage with leases	(Total debt+lease*10)/(total debt+market equity+lease*10) (TD+XRENT*10/TD+PRCC_F∗CSHO+XRENT*10) (TD-CHE/(TD+PRCC_F∗CSHO))
Market Equity	Closing price∗shares outstanding (PRCC_F ∗ CSHO)
Market-to-Book ratio	(Market Equity+Total Debt+Pre^{-1}ferred stock liquidating value − deferred taxes and investment tax credits)/book assets
Mental health mandate	Equals 1 if state adopts Mental health treatment mandate by year t
Mobility	Measure of labor flexibility as in Donangelo (2014)
Modified Z-Score	3.3∗Pre-tax income+sales+1.4∗retained earnings+1.2∗(current assetscurrent liabilities)/book assets
Operating Leverage	Cost of goods sold (COGS) plus Selling, General, and Administrative expenses (XSGA)
Net Book Leverage	(Total debt-cash)/total assets(TD-CHE/AT)
Net Debt Issued	Log(long-term debt issuance minus long-term debt redemption (DLTIS-DLTR))
Net Equity Issued	Log(issue of stock minus the repurchase of stock (SSTK-PRSTKC))
Net Market Leverage	(Total debt-cash)/total assets

Table B1:
Continued.

Payout	Dividends/Total assets (DVC/AT_{t-1})
Political balance	Equals 1 if senate is held by Democrats
Profitability	Operating income before depreciation/book assets (OIBDP/AT)
Profit Margin	Sum of pre-tax income, interest expense, and depreciation and amortization divided by sales ((pi+xint+dp) /sale)
Public policy law	Equals 1 if state adopts public policy law by year t
Right-to-work law	Equals 1 if state adopts right-to-work law by year t
Sales-Weighted State Book Leverage	The sales-based weighted average book leverage of all firms headquartered in a state.
State per Capita GDP	State per capita gross domestic product
State GDP Growth	State gross domestic growth rate
Tangibile Assets	Property, plant and equipment/total assets (PPENT/AT)
Total Debt	Short-term debt (DLC) + long-term debt (DLTT)
Union Coverage	Proportion of the firm's employees covered by collective bargaining by Industry
Wages	Total staff expenses (xlr)