Another Look at the Effect of State Mandates for Health Insurance Benefits

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ABSTRACT

The research question we address is whether state laws that require health insurance policies to provide coverage for specified benefits have affected the size of the population without any private sector health insurance coverage. The laws are often alleged to increase the cost of insurance premiums and thus reduce incentives for smaller employers to offer and for individuals to purchase health insurance.

Using data from the United States Census Current Population Survey (CPS) from 1996 to 2002, we measure the effects of 2 sets of high cost benefit mandates on the probability for workers to have health insurance through their employer. We use both individual and state level analyses. Generally we find weak and statistically insignificant effects associated with benefit mandates, though we see evidence that this relationship grows stronger over time.

I. INTRODUCTION

Private health insurance has been traditionally governed at the state level. In the past twenty years it has become increasingly popular for state legislatures to pass laws mandating that certain services, health providers, or benefits be covered in healthcare plans. As Gabel and Jensen (1989) assert, health insurance mandates are a way for state governments to satisfy constituents without increasing taxes. Predictably, these laws are extremely popular with state legislators who seek to gain political influence at little to no fiscal cost. Bunce et al (2007) have identified no less than 1,800 such laws across the United States.

State healthcare mandates can be grouped in three different categories:

- Coverage mandates require that insurance plans cover particular groups of individuals, such as terminated employees or certain dependents.

- Provider mandates require that insurance plans cover services provided by certain healthcare professionals, such as dentists or chiropractors.
- Benefit mandates require that a minimum level of service to be provided by an insurance plan. These laws can range from a guaranteed period of hospital stay for mothers after birth to coverage for prostate cancer testing.

We focus primarily on the effects of benefit mandates, as these laws have experienced the most frequent passage over the past decade. We study the relationship between the enactment of such legislation and the insurance coverage status of workers. Specifically, we analyze employees of small firms since the vast majority of large companies tend to use self-insurance and thus exempt themselves from mandates.

II. THE DEBATE ON MANDATES

A. Major Arguments for Mandates

As explained by Summers (1989), arguments for the implementation of state mandates originate from a paternalistic line of reasoning. Proponents for state mandates contend that purchasers may not realize the full value of a certain benefit and could forgo it when constructing an insurance plan at a greater cost. For example, one may not perceive the coverage of prostate cancer testing to be necessary, but the cost pales in comparison to the expense of ensuing treatments when diagnosed. Thus, governments must intervene to ensure that consumers buy the optimal amount of insurance.

Proponents also argue that mandates are a method for governments to assist persons with chronic illnesses. If benefits for such diseases are not required across an entire population, insurance companies will experience adverse selection – as described by Rothschild and Stiglitz (1976) – when healthier individuals decline coverage.

Mandates effectively spread the costs of expensive treatments across the entire population and ease financial burden on those who are already incapacitated.

B. Arguments against Mandates

The economic argument against state mandates centers on inefficiency from the increase in healthcare costs from the imposition of minimum levels of service. To require consumers to accept an expensive package with benefits neither needed nor wanted may cause them to leave the insurance system altogether, as demonstrated by the quip: Why offer "Cadillac coverage" to one who only desires "Chevrolet coverage?" This decrease in the percentage of workers with private health insurance due to mandates, known as displacement, is purported to be a major factor in the large and growing number of uninsured workers in the United States.

III. EXISTING LITERATURE

There already exists an extensive body of academic literature that analyzes various aspects of state mandates. Jensen and Morrissey (1999), Laugesen et al (2006), and Monheit and Rizzo (2007) provide a complete review. Of these studies, there have been several that examine the displacement effects of state healthcare mandates at a national level. The analyses provide mixed results that do not easily lend themselves to a conclusion.

Some researchers have found large and statistically significant displacement effects. Controlling for a number of demographic and employment factors, Gabel and Jensen (1992) examined firm data and reported that 20% to 25% of companies that did not offer insurance coverage would do so if all state mandates were eliminated. Sloan and Conover (1998) analyzed data from 1989 to 1984 using probit and found significant

large and negative displacement. They estimated that every mandate passed decreases the percentage of workers with insurance coverage by 0.4%. They extrapolated this finding to assert that the average state would experience a 4% increase in the percentage of workers with insurance coverage if all mandates were eliminated.

Others have found little or no effect. For the years 1979, 1983, and 1988, Gruber (1994b) developed a similar probit model at the individual level to measure displacement from 5 high-cost mandates and found no significant effect. He attributed his results to the phenomenon that most insurance plans already provided a level of coverage above state-mandated levels. Gruber was one of the first to include varying costs of mandates to reflect the reality that some benefits increase insurance premiums more than others. Gruber (1994a) also found through analysis of mandated maternity benefits that in the face of costly mandates, employers do not withdraw health insurance coverage but rather reduce the wages of the group of workers most likely to value the benefit. Thus, displacement should be uncommon. Also, other workers will not drop insurance as there is no additional payment required for superfluous benefits.

IV. RESEARCH MOTIVATION

After a review of the existing literature, we believe there are two main reasons that a reexamination of the effects of state benefit mandates would add value to discussion on these laws.

A. Availability of New Data

First, studies on benefit mandates have generally reviewed specific laws in specific states. According to Laugesen et al (2006), relatively few analyses measure effects of these laws across the United States; the obstacle of compiling data on a national

scale is difficult to overcome. However, Laugesen et al (2006) have recently reviewed the legal codes of all 50 states in the United States and compiled a comprehensive database of all state benefit mandates from 1949 to 2002. The dataset is one of the first of its kind and allows for timely comparative studies of state mandates over the entire country

B. Changes in States' Legislative Nature

There have not been any comparative statistical analyses of the displacement effect of mandates since 1998 and over the past decade the character of state health insurance mandates has changed tremendously. Laugesen et al (2006) found that earlier legislation was generally comprised of provider mandates so to include other health professionals, such as chiropractors and dentists, in insurance plans. Recently, legislation has primarily consisted of benefit laws. And perhaps because benefit laws cause miniscule increases in premiums compared to coverage or provide ones the number of benefit mandates has increased tremendously. By analyzing recent waves of widespread mandates, we may find unmeasured effects.

V. DATA SOURCES

The primary data source for our study is the March Supplement of the U.S. Census CPS from 1996 to 2002. Population observations are part of the Integrated Public Use Micro-data Series (IPUMS) as provided by the Minnesota Population Center. We constrain the sample to fit several requirements:

- Persons must be employed, either on a part-time or full-time basis.
- Persons must be employed at firms with less than 100 employees.
- Persons have to be under the age of 65 and thus ineligible for Medicare benefits.

- Persons have to have a known union coverage status – in other words, listed as covered by a union or not – since this variable is found to be highly significant in determining whether an individual has obtained health insurance through employment.[1]

The final dataset comprised of 33,881 workers. Descriptive statistics on the sample can be found in Table 1.

Information on state mandates is supplied by Dr. Miriam Laugesen, who provided a comprehensive list of benefit laws passed from 1995 to 2003. Each piece of legislation is classified by state, year of passage, and 1 of 76 benefit types. However, this list does not include information about any mandates passed before 1995.

Finally, we determine the relative costs of benefit mandates: the percentage increase of premiums should increase if the law is passed. Since the calculation of a given mandate's effect on premiums requires actuarial expertise and in depth knowledge of a state's population, we use reports commissioned by state governments. Specifically, we studied cost analyses from the legislatures of Maryland, Virginia, and Texas. Table 2 shows the estimated premium increases for all mandates compared across states. Since the required levels of coverage from laws for the same benefit vary from state to state, we average values to liberally approximate percent premium increases.

VI. EMPIRICAL FRAMEWORK

A. Individual Level Linear Probability Model

[1] The imposition of the union coverage status constraint reduced the number of observations in the sample to 20% of the original size. The wisdom of this requirement is discussed in Section VIII.

To first estimate the displacement of state mandates, we construct an un-weighted regression model controlling for a large number of external effects.[2] This approach is taken from an analysis by Gruber (1994b) with modifications to adjust for changes in the availability of state mandate data.[3] The model is:

$$INSCOV^*_{ijt} = \alpha + \beta_1 \tau_t + \beta_2 \delta_j + \beta_3 X_{ijt} + \beta_4 MANCOST_{jt-1} + \varepsilon_{jt}$$

where $INSCOV^*_{ijt} = 1$ when worker i in state j in year t is covered by insurance and 0 if not. The independent covariates are a set of state and year dummy variables for fixed effects specifications, a set of demographic and job variables, and a variable which approximates the influence of mandate laws.

τ_t is set of year dummies and δ_j is a set of state dummy variables meant to account for fixed effects. τ_t allows for omitted time effects while δ_j is meant to control for the state group effects, including the effects of mandates passed before 1996 as well as any other inherent state variation.

X_{ijt} is a set of 11 demographic and job variables for worker i that would have bearing on a worker's propensity for coverage, including:

- 3 continuous variables for age, the square of age, and degrees of educational attainment.
- 7 dummy variables for non-white race, female sex, married marital status, tenure for less than 1 year, coverage by a union contract, part time employment, and employment in a firm with less than 25 persons.

[2] In the probit analyses we did not use the probability weights for observations as given by the CPS. These weights are generally used to correct sampling error and to make analyses more representative of the United States populace. The inclusion of sampling weights does greatly increase the significance of probit coefficients; however for comparison to Gruber's 1994 results they are not used in this study.

[3] We used a variation of Gruber's 1994 study because it generally known, as per Monheit and Rizzo (2007), as one of the strongest analyses of the displacement effect.

- 1 interaction variable for female sex crossed with married marital status.

The hope is these variables will capture much of the variation due to demographic and job factors so that we may better measure displacement from mandates.

$MANCOST_{jt-1}$ is an index of mandate dummy variables weighted by their percentage cost to insurance premiums; its coefficient β_4 should measure the amount of displacement effect of benefit mandates. We introduce this covariate at a lag of 1 year to allow for delay in the effect of a given law. The general structure is:

$$MANCOST_{jt-1} = C_1 * MANDATE_1 + C_2 * MANDATE_2 + ... + C_k * MANDATE_k$$

Each $MANDATE_k$ is a dummy variable which is 1 when that particular mandate k has been passed in state j during 1996 to year t 0 if not. C_k is a measure of the potential percentage premium increase from each mandate k.

The ideal *MANCOST* index would be inclusive of all benefit types. However, due to collinearity concerns only a few mandates are included: the presences of certain mandates within a state are unlikely to be independent of each other. Gruber chose 5 high-cost mandates: mandated minimum benefits for alcoholism treatment, drug abuse treatment, and mental illness, mandated coverage for chiropractic services; and mandated continuation of health insurance benefits for terminated employees and their dependents. Gruber's mandate index equation is:

$$MANCOST_{Old\ Gruber} = 5 * MENTALHEALTH + ALCOHOL + DRUG + 1.5 * CHIRO + 3 * CONTCOV + PREMTAX$$

Using state-commissioned reports, we modify the weightings to reflect the costs of these benefits during the time period of 1996 to 2002. We do not include the continuation of coverage mandate as the 1996 Health and Insurance Portability and

Accountability Act effectively required guaranteed renewal for terminated employees and dependents. We also omit premium tax rates from the mandate index as values were found to be relatively constant over the time window. The revised index is:

$$MANCOST_{NewGruber} = 2 * MENTALHEALTH + ALCOHOL + DRUG + CHIRO$$

By 1996, most states had already passed the mandates specified by Gruber and there was very little variation in the mandate index; thus we created a new mandate index based on benefit mandates that were expensive and prevalent during the study time period. Indeed, Table 1 shows that this new benefit mandate cost index had a higher mean value across the sample. We find mandated benefits for prostate cancer testing (PSA), diabetes treatment, temporo-mandibular joint syndrome (TMJ) treatment, and well child care to cause the largest percent increases in health insurance premiums. Legislation requiring these 4 was also common from 1996-2002. [4] Therefore, we devise a new benefit mandate cost index:

$$MANCOST_{New} = PSA + DIABETES + BONESJOINTS + WELLCHILD$$

Each of the benefits in the index can be estimated to increase premiums by about 1 percent. This weighting also allows for the mandate index to simply act as a sum of several dummy variables.

B. Individual-Level Probit Model

The linear probability regression is a suitable method to gain a rough understanding of the effects of the covariates, but a probit model is developed as a more

[4] Several very expensive mandates were omitted from the benefit mandate index because they were required at the federal level. A number of benefit mandates created specifically for women, such as minimum maternity stay, obstetrician coverage, and mammography, were also found to be costly but were not included due to the 1996 the United States Congress passed the Newborn and Mothers Protection Act and the 1998 Women's Health and Cancer Rights Act. Also, mental health parity is known as a particularly expensive benefit but has been mandated nationally by the 1996 Mental Health Parity Act. We believe that such developments might confound results.

appropriate method of classification. Again, this methodology is taken from a previous study by Gruber (1994b):

$$\Pr[INSCOV_{ijt}^{*} = 1 \mid \tau_t, \delta_j, X_{ijt}, MANCOST_{jt-1}] = \Phi(\alpha + \beta_1 \tau_t + \beta_2 \delta_j + \beta_3 X_{ijt} + \beta_4 MANCOST_{jt-1})$$

$INSCOV^{*}_{ijt} = 1$ when worker i in state j in year t is covered by insurance

$INSCOV^{*}_{ijt} = 0$ if not

$INSCOV^{*}_{ijt}$ is a dummy variable that represents the latent propensity of worker i in state j in year t to be covered by insurance provided by his or her employer. We use the same independent covariates for the probit model as the linear probability regression: τ_t is a set of year dummies, δ_j is a set of state dummy variables, X_{ijt} is a set of demographic and job variables for worker i, and $MANCOST_{jt-1}$ is a weighted index of mandate dummy variables. Again, the coefficient β_4 should measure the amount of displacement effect of benefit mandates.

C. State Level Fixed Effects Aggregate Model

Another approach we use is to aggregate our data and apply a fixed effect population averaged linear model. This method allows our analysis to be time invariant and also assists us to better measure the change in insurance coverage as the mandate index grows. The equation is:

$$INSCOV_{ijt} = \alpha + \beta_1 X_{ijt} + \beta_2 MANCOST_{jt-1}$$

where $INSCOV_{jt}$ is the percentage of workers in state j who have health insurance through their employer, X_{jt} is the mean value of the job and demographic variables across all

individuals in state j, and $MANCOST_{jt-1}$ is the index of mandate dummy variables. The coefficient β_2 should measure the amount of displacement effect of benefit mandates.

VII. RESULTS

We pair each of the 3 models developed – individual level linear probability, individual level probit, and aggregate level fixed effects regression – with the revised Gruber and new benefit mandate indices to test for displacement in the CPS sample. Each combination of model and mandate index is run in three separate ways:

- We run 4 dummy variables that correspond to the mandates comprising the index in the model and examine the coefficients.
- We run 1 covariate that is the sum of the 4 individual mandate dummies comprising the index in the model and examine the coefficient. We perform this analysis because the 4 individual mandates dummy variables may be collinear. It is necessary to examine the overall significance of the set.
- Finally, to better approximate the increase in premiums due to mandates, we run the weighted mandate cost index in the model and examine the coefficient.

In total, we run 18 separate analyses: each of the mandate cost indices is used separately in the 3 models in 3 ways.

Generally we find weak and insignificant displacement though there is some evidence that the effect of certain mandates has grown since last measurement.

A. Individual Level Analyses

Table 4 displays the basic results from individual level analyses using the revised Gruber mandate index. Column 1 presents the results for a linear probability regression while column 7 shows the marginal probabilities from the probit model: as one may

observe, the coefficients are very similar. 3 of the 4 mandate dummies have negative coefficients. In particular, the coefficient for alcoholism treatment mandates is highly significant and probit analysis suggests a 19% decrease in coverage probability with the passage of such a law. However these results may be meaningless: the presence of a substance abuse mandate is also highly significant but the marginal probability estimates an increase in coverage probability of 8%. Indeed, both the sum of mandate dummy variables and the weighted mandate index have insignificant negative coefficients. The marginal probability of the weighted index has a magnitude of approximately 2.2%; this value implies that the imposition of the entire set of mandates would lower the probability of insurance by a substantial 11%.

Columns 3 and 6 in Table 4 are Gruber's results (1994b) from 1979 to 1988 and allow for side by side comparison with our analysis of data from 1996 to 2002. We find that while the linear probability and probit models differ slightly in construction, there is a remarkable similarity in the coefficients and standard errors for all demographic and job variables. Also, we note that there is a marked increase in the significance and magnitude of the coefficients of the mandate index and its components. This phenomenon is perhaps a consequence of the different models but also may be a sign that the displacement effect of these laws has increased over time.

Table 5 displays the basic results from individual level analyses using the new benefit mandate index that we created. When we compare the linear probability results in columns 1 and probit marginal probabilities in column 5, we see again the coefficients are almost identical. However, there is very little evidence of a displacement effect. For the set of mandate dummy variables, only 1 out of the 4 coefficients is negative and then

only slightly so. The weighted mandate index – which is also the sum of mandate dummies – has an insignificant negative coefficient. The marginal probability from the mandate index is estimated at 0.66%; consequently, we can extrapolate a decline of 2.64% in coverage probability for a given worker if all 4 benefit mandates were imposed.

For all individual level analyses, all of the job and demographic variables have the effects predicted by economic theory. Age, education, female sex, married marital status, and union coverage increase the probability that a given worker is covered by insurance. Non-white race, female sex with married marital status, tenure less than 1 year, part time work status, and employment at a company with less than 25 people lower the chances an individual has healthcare coverage.

B. Aggregate State Level Analyses

Table 6 reports the output from the fixed effects regression with both mandate indices. Columns 1 and 2 present the results from the application of the revised Gruber index. We note that the coefficients for the 4 separate mandate dummies, the sum of dummy variables, and the weighted mandate index are all negative but insignificant. The coefficient of the mandate index suggests that the percentage of workers with employment-based health insurance in a given state would decrease by approximately 4% if all 4 benefits were required.

Columns 3 and 4 display findings from the use of the new benefits index. Again, we find that none of the mandate dummy variables are significant and only the dummy for prostate cancer testing is negative. The weighted mandate index variable, which also serves as the sum of dummies variable, is insignificant as expected. The coefficient

implies a miniscule 0.5% decrease in the percentage of workers with coverage in a given state with the imposition of all 4 of the component benefit mandates.

With the fixed effects model, many of the coefficients values of job and demographic variables become insignificant and nonsensical. This development is typical of analyses using aggregation because much of the original variation in the observations is lost. Table 6 shows that only 2 covariates are statistically significant: both increased proportions of part time employees and small firms in a given state tend to decrease the percentage of the state's population with insurance coverage.

VIII. MODEL LIMITATIONS

A. Use of Union Status in the Creation of CPS Sample

The construction of our data sample may be a point of contention, specifically the constraint of known union coverage status. This requirement reduces the original CPS sample of 463,000 observations to approximately 20% of the original size. While our analyses found the variable highly significant, the necessity of the union coverage in our models is unclear; indeed, analysis with the entire dataset may provide different results. In our study, we retain the constraint in this constraint to make results more comparable to Gruber's (1994b).

B. Dummy Variables in the Mandate Cost Index

One of the most pressing concerns in the analysis is the construction of the mandate cost index. Because we do not have access to data on laws passed before 1996, we modify the dummy variables in Gruber's (1994b) general index formula from 1 if a mandate was present the previous year and 0 if not to 1 if a mandate has been passed

from 1996 to the previous year and 0 if not. Thus, we are in effect measuring the change in insurance coverage rates due to variation in the cost index. A more powerful analysis would be to revert to the initial mandate index formula as developed by Gruber (1994b). We then could accurately measure the total of displacement by only the mandate index variable, rather than variation in displacement by a combination of the mandate index and relevant state dummy.

C. Type of Mandates Evaluated in the Mandate Cost Index

Another weakness of our methodology is the use of so few benefits in the creation of the benefit mandate index. Due to concerns of collinearity, we only include 4 benefits. However, the 4 that we choose for the variable, while very expensive in comparison to other mandated benefits, cannot in sum cause an increase in premium of more than 4%. Thus, the displacement we attempt to measure must be very small.

This assessment embodies a larger issue in the measurement of displacement from benefit mandates: such laws may be truly significant only in aggregate. While one provider mandate or coverage mandate can cause substantial increases in premiums, the effect of one benefit mandate is trivial. Indeed, the danger of benefit mandates is that state legislatures may pass large numbers of such laws with the impression that each increases premiums by only marginal amounts when the compounded result is much greater. The massive proliferation of benefit mandates over the past decade, as documented by Laugesen et al (2006), may be a consequence for such an effect. Thus, the methodology that Gruber developed for the measurement of mandate displacement may not be appropriate for benefit mandates: perhaps it is necessary to construct a statistical model that takes into account all mandates without stirring fears of collinearity.

IX. CONCLUSION

Generally we measure weak and insignificant displacement from healthcare mandates for benefits. Our analyses are consistent with Gruber's results (1994b) which also found little effect from such laws on small firms' propensity to offer healthcare coverage. In the three models we created, we only see statistical significance in dummy variables for the alcoholism and substance abuse treatment on an individual – but the coefficients are of opposite signs and the corresponding mandate index is insignificant.

However, we find some evidence that the cost of mandates is growing. For the individual level analyses that use the mandate index specified by Gruber, we find an increased magnitude and significance of coefficients for all mandate dummy variables and the mandate cost index while the coefficients for the job and demographic variables remain remarkably similar. This phenomenon may be evidence that over time the impact of benefit mandates has increased but there is not enough data to verify that a trend exists. Indeed, further analysis perhaps is necessary to document any further changes. In particular, we hope that future studies will use both present methodologies as well as new techniques that can measure the aggregate effects of all mandates in a given state.

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Table 1: Summary of CPS Data		
	Less than 100 Workers	Less than 25 Workers
Age	37.32	37.10
	(12.14)	(12.35)
Education	10.72	10.60
	(2.52)	(2.53)
% Female	47.86%	49.09%
% Non-White Race	12.65%	12.28%
% Married	56.54%	55.97%
%Union	6.74%	4.72%
% Tenure Less Than 1 Year	17.28%	17.54%
% Part Time	22.97%	26.44%
% Covered By Insurance	44.32%	35.37%
Average Revised Gruber Index	0.42	0.42
	(0.79)	(0.79)
Average Benefits Index	1.46	1.47
	(0.94)	(0.94)
Number of Observations	33,881.00	20,815.00

NOTES:

1. Numbers is parentheses are standard deviations.

Table 2: Mandate Cost Estimation from State Reports

State	Virginia			Texas		Maryland		Mean Value	**Final Estimation**
Benefit	1994 Group	2002 Group Single	2002 Group Family	1996 Group	2000 Group	2001 Group	2002 Group		
Mental Health									
Mental Inpatient		1.13%	1.29%						
Mental Partial Hospitalization		0.19%	0.11%						
Mental Outpatient		1.31%	1.28%						
Total Mental Health	2.39%	2.63%	2.68%		2.00%	2.35%	2.50%	2.43%	2.00%
Alcohol and Drug Abuse									
Abuse Inpatient		0.75%	0.71%						
Abuse Partial Hospitalization		0.06%	0.06%						
Abuse Outpatient		0.58%	0.62%						
Total Alcohol and Drug Abuse	0.77%	1.39%	1.39%	0.60%	0.50%	2.35%	2.50%	1.36%	2.00%
Chiropractor	0.61%	1.17%	0.92%	0.53%				0.81%	1.00%
Well Child Care	0.46%				0.60%	0.80%	0.80%	0.67%	1.00%
Diabetes		1.45%	1.61%			0.50%	0.60%	1.04%	1.00%
Bones and Joints (TMJ)		1.29%	1.39%	0.09%		0.30%	0.30%	0.67%	1.00%
Prostate Cancer Testing (PSA)		1.90%	1.59%		0.10%	0.70%	0.70%	1.00%	1.00%

Notes:

1. In Maryland, mental health and substance abuse are considered 1 mandate ; therefore the 2.50% was estimated for mental health and alcohol and drug abuse.
2. The final estimation of cost for alcohol and drug abuse treatment is split equally among the costs of alcoholism treatment and substance abuse treatment mandates.

Table 3: Gruber Mandate Index Probit Results

		1	2	3	4	5	6	7	8
	Insurance Coverage on Job	Linear Probability	T-statistic	Linear Probability (Gruber)	Probit	T-statistic	Probit (Gruber)	Marginal Probability	Margin Probability (Gruber)
1	**Alcoholism Mandate**	**-0.1681**	-2.6319	0.0056	**-0.5453**	-2.3688	0.0264	-0.1944	0.0074
		(0.0639)		(0.0186)	(0.2302)		(0.0654)		
2	**Substance Abuse Mandate**	**0.0752**	3.3132	0.0106	**0.2302**	3.3091	0.0469	0.0913	0.0132
		(0.0227)		(0.0242)	(0.0696)		(0.0854)		
3	Mental Illness Mandate	-0.0097	-0.6923	-0.0294	-0.0275	-0.6298	-0.1102	-0.0108	-0.0309
		(0.0141)		(0.0246)	(0.0437)		(0.0868)		
4	Chiropractor Mandate	-0.0122	-0.5675	-0.0103	-0.0406	-0.6096	-0.0126	-0.0158	-0.0036
		(0.0215)		(0.0175)	(0.0667)		(0.0610)		
5	Sum of Mandates	-0.0168	-1.6198	-0.0225	-0.0530	-1.6422	-0.0411	-0.0207	-0.0116
		0.0103		0.0323	0.0322		0.1135		
6	Gruber Mandate Cost Index	-0.0088	-1.4233	-0.0020	-0.0274	-1.4192	0.0062	-0.0107	-0.0017
		0.0062		0.0022	0.0193		0.0076		
7	**Age**	**0.0175**	13.5000	**0.0108**	**0.0651**	15.2057	**0.0390**	**0.0305**	**0.0110**
		(0.0013)		(0.0015)	(0.0043)		(0.0054)		
8	**Age squared**	**-0.0002**	-9.3697	**-0.0143**	**-0.0006**	-11.3352	**-0.0511**	**-0.0003**	**-0.0144**
		(0.0000)		(0.0019)	(0.0001)		(0.0068)		
9	**Education**	**0.0303**	30.7754	**0.0208**	**0.0928**	29.6067	**0.0709**	**0.0366**	**0.0200**
		(0.0010)		(0.0011)	(0.0031)		(0.0040)		
10	**Non-White Race**	**-0.0561**	-7.2660	**-0.0534**	**-0.1649**	-6.9722	**-0.1854**	**-0.0503**	**-0.0519**
		(0.0077)		(0.0107)	(0.0237)		(0.0381)		
11	**Female Sex**	**0.0270**	3.8318	**0.0206**	**0.0821**	3.6184	**0.0802**	**0.0123**	**0.0224**
		(0.0070)		(0.0091)	(0.0227)		(0.0324)		
12	**Married Marital Status**	**0.0318**	4.3247	**0.0549**	**0.0819**	3.7685	**0.1632**	**0.0189**	**0.0461**
		(0.0073)		(0.0085)	(0.0217)		(0.0292)		
13	**Married*Female**	**-0.1743**	-17.9390	**-0.1706**	**-0.4889**	-16.2475	**-0.5361**	**-0.1644**	**-0.1514**
		(0.0097)		(0.0114)	(0.0301)		(0.0400)		
14	**Tenure Less Than 1 Year**	**-0.0579**	-9.0439	**-0.0984**	**-0.1623**	-8.0413	**-0.3429**	**-0.0561**	**-0.0988**
		(0.0064)		(0.0075)	(0.0202)		(0.0266)		
15	**Union Coverage**	**0.1743**	18.1944	**0.1970**	**0.5210**	16.6801	**0.6966**	**0.2088**	**0.1976**
		(0.0096)		(0.0102)	(0.0312)		(0.0379)		
16	**Part-Time Status**	**-0.2534**	-43.2753	**-0.2505**	**-0.8310**	-39.5501	**-0.9337**	**-0.2896**	**-0.2689**
		(0.0059)		(0.0074)	(0.0210)		(0.0287)		
17	**Small Firm**	**-0.1805**	-35.5097	**-0.1740**	**-0.5295**	-34.8913	**-0.5629**	**-0.2067**	**-0.1657**
		(0.0051)		(0.0063)	(0.0152)		(0.0215)		

NOTES:
1. Coefficients significant at a=0.05 level are **bold.**
2. Numbers is parentheses are robust standard errors.
3. Dependent variable is a dummy variable equal to 1 if an individual is has employment-based insurance coverage and 0 if not.
4. Mandate cost is a linear combination of dummy variables for the passage of a set of mandates with the weights as the percentage increase from each mandate. This variable comes from a distinct calculation.
5. Results in rows 1 through 4 are from entering only a set of 4 mandate dummy variables into the respective model.
6. Results in row 5 are from entering only the sum of the set of 4 mandate dummy variable into the respective model.
7. Results in rows 6 through 17 are from entering only the weighted mandate index variable in the respective model.

Table 5: Benefits Mandate Index Probit Results

		1	2	3	4	5
	Insurance Coverage on Job	Linear Probability	T-Statistic	Probit	T-statistic	Marginal Probability
1	Diabetes	0.0282	0.7344	0.0774	0.6473	0.0340
		(0.0384)		(0.1196)		
2	PSA	-0.0075	-0.6302	-0.0301	-0.8163	-0.0118
		(0.0120)		(0.0369)		
3	TMJ	0.0091	0.3804	0.0211	0.2854	0.0083
		(0.0238)		(0.0741)		
4	Well Child Care	0.0136	1.0856	0.0459	1.2038	0.0180
		(0.0125)		(0.0381)		
5	New Mandate Cost Index	-0.0041	-0.5976	-0.0167	-0.7964	-0.0066
	(Also sum of mandates)	(0.0068)		(0.0210)		
6	**Age**	**0.0175**	13.4922	**0.0651**	15.1999	**0.0255**
		(0.0013)		(0.0043)		
7	**Age squared**	**-0.0002**	-9.3636	**-0.0006**	-11.3277	**-0.0002**
		(0.0000)		(0.0001)		
8	**Education**	**0.0303**	30.8031	**0.0929**	29.6327	**0.0364**
		(0.0010)		(0.0031)		
9	**Non-White Race**	**-0.0560**	-7.2518	**-0.1644**	-6.9501	**-0.0634**
		(0.0077)		(0.0237)		
10	**Female Sex**	**0.0271**	3.8453	**0.0823**	3.6273	**0.0322**
		(0.0070)		(0.0227)		
11	**Married Marital Status**	**0.0318**	4.3301	**0.0820**	3.7694	**0.0321**
		(0.0073)		(0.0217)		
12	**Married*Female**	**-0.1744**	-17.9505	**-0.4890**	-16.2530	**-0.1843**
		(0.0097)		(0.0301)		
13	**Tenure Less Than 1 Year**	**-0.0578**	-9.0342	**-0.1622**	-8.0304	**-0.0627**
		(0.0064)		(0.0202)		
14	**Union Coverage**	**0.1744**	18.1986	**0.5211**	16.6803	**0.2055**
		(0.0096)		(0.0312)		
15	**Part-Time Status**	**-0.2533**	-43.2550	**-0.8307**	-39.5357	**-0.2966**
		(0.0059)		(0.0210)		
16	**Small Firm**	**-0.1804**	-35.5053	**-0.5293**	-34.8812	**-0.2069**
		(0.0051)		(0.0152)		

NOTES:

2. Coefficients significant at a=0.05 level are **bold.**
3. Numbers is parentheses are robust standard errors.
4. Dependent variable is a dummy variable equal to 1 if an individual is has employment-based insurance coverage and 0 if not.
5. Mandate cost is a linear combination of dummy variables for the passage of a set of mandates with the weights as the percentage increase from each mandate. This variable comes from a distinct calculation.
6. Results in rows 1 through 4 are from entering only a set of 4 mandate dummy variables into the respective model
7. Results in row 5 through 17 are from entering only the weighted mandate index variable, which is also the sum of all mandates variable, in the respective model.

Table 6: Aggregate Model Results

	Gruber Mandates Index	1	2	Benefit Mandates Index	3	4
	Percent Insured	Coefficient	T-statistic	Percent Insured	Coefficient	T-statistic
1	Alcoholism Mandate	-0.0455	-1.28455	Diabetes	0.0256	0.4708
		(0.0177)	0		(0.0544)	
2	Substance Abuse Mandate	-0.0455	-1.28455	PSA	-0.0104	-0.7008
		(0.0177)	0		(0.0149)	
3	Mental Illness Mandate	-0.0077	-0.5243	TMJ	0.0033	0.1493
		(0.0146)			(0.0221)	
4	Chiropractor Mandate	-0.0091	-0.4004	Well Child Care	0.0158	1.0111
		(0.0226)			(0.0156)	
5	Sum of all mandates	-0.0155	-1.4872	Sum of all mandates	-0.0013	-0.2056
		(0.0104)			(0.0064)	
6	Gruber Mandate Cost Index	-0.0086	-1.3244	Benefit Mandate Cost Index	-0.0013	-0.2056
		(0.0065)			(0.0064)	
7	Age	-0.0015	-0.0952	Age	-0.0025	-0.1620
		(0.0156)			(0.0154)	
8	Age squared	0.0001	0.3279	Age squared	0.0001	0.4094
		(0.0002)			(0.0002)	
9	Education	0.0162	1.5360	Education	0.0169	1.5911
		(0.0105)			(0.0106)	
10	Non-White Race	-0.0544	-0.6973	Non-White Race	-0.0433	-0.5594
		(0.0780)			(0.0773)	
11	Female Sex	-0.0360	-0.4112	Female Sex	-0.0316	-0.3588
		(0.0875)			(0.0881)	
12	Married Marital Status	-0.0430	-0.5012	Married Marital Status	-0.0422	-0.4938
		(0.0857)			(0.0854)	
13	Married*Female	0.0769	0.6211	Married*Female	0.0784	0.6346
		(0.1238)			(0.1235)	
14	Tenure Less Than 1 Year	-0.0237	-0.3099	Tenure Less Than 1 Year	-0.0212	-0.2781
		(0.0765)			(0.0762)	
15	Union Coverage	0.2168	1.7723	Union Coverage	0.2259	1.8666
		(0.1223)			(0.1210)	
16	**Part-Time Status**	**-0.2898**	**-4.3178**	**Part-Time Status**	**-0.2884**	**-4.2168**
		(0.0671)			(0.0684)	
17	**Small Firm**	**-0.2271**	**-3.8058**	**Small Firm**	**-0.2237**	**-3.7073**
		(0.0597)			(0.0603)	

Notes:

1. Coefficients significant at a=0.05 level are **bold.**
2. Numbers is parentheses are robust standard errors.
3. Dependent variable is a dummy variable equal to 1 if an individual is has employment-based insurance coverage and 0 if not.
4. Mandate cost is a linear combination of dummy variables for the passage of a set of mandates with the weights as the percentage increase from each mandate. This variable comes from a distinct calculation.
5. Results in rows 1 through 4 are from entering only a set of 4 mandate dummy variables into the respective model.
6. Results in row 5 are from entering only the sum of the set of 4 mandate dummy variable into the respective model. Please note that for the new benefit index the sum of dummy variables is equal to the weighted index.
7. Results in rows 6 through 17 are from entering only the weighted mandate index variable, which is also the sum of all mandates variable, in the respective model.