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Effects of “Second Generation” Small Group Health Insurance Market Reforms, 1993 to 1997

In the mid-1990s, several state legislatures enacted a “second generation” of small group health insurance reforms that required guaranteed issue of all products and prohibited the use of health as a rating factor. We use data from two large employer surveys to compare the behavior of small business in nine states that adopted these reforms between 1993 and 1997 to the behavior of small business in 11 states and the District of Columbia, where neither of these small group health insurance market reforms existed prior to 1997 (N = 8,465 in 1993; N = 12,219 in 1997). Our analyses focus on several outcomes: health insurance offer and enrollment rates in any employer plan, and in an HMO plan; turnover in offer decisions; and premiums, variability in premiums, and the rate of change in premiums. Overall, we find no effect of small group reform on any of the outcomes; the sign of the effect is not consistent across reform states, the estimates rarely attain statistical significance, and they show no consistent pattern across the outcomes within each state. Therefore, predictions of the harm these regulations might cause to the market have not come to pass. On the other hand, proponents’ hopes for a solution to low coverage rates among small businesses have not materialized either.

Many states enacted insurance market reforms during the 1990s to try to improve access to and affordability of health insurance coverage for employees in small firms. These reforms governed rules of issue and how insurers could set premiums for coverage.

Reforms related to rules of issue were intended to eliminate insurer underwriting practices that prevented groups or some individuals in a group from purchasing coverage. Such reforms included: requirements that insurers issue a plan to all employers or individuals who wish to purchase it (guaranteed issue); requirements that coverage be renewed (guaranteed renewal); limits on the period during which pre-existing conditions can be excluded from coverage; and exemptions from pre-existing condition ex-

clusions for people who change group insurers (portability). By 1997, 47 states had enacted some combination of access reforms (Curtis et al. 1999). Following these independent state efforts, the federal government mandated comprehensive access reforms for all states by enacting the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

Rating reforms restrict the extent to which premiums for a given set of benefits can vary across groups with different characteristics. Rating reforms are intended to enlarge the risk pool on which premiums for small employers are based, thus making insurance more affordable for high-risk groups and encouraging them to purchase insurance. On the other hand, small employers that have a good risk profile may pay high-

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er rates after reforms are enacted because insurers will be limited in the extent to which they can take into account this favorable profile. The federal government did not address rate regulation under HIPAA; hence, this type of reform is solely a state option.

The effect that insurance reforms have on the small group market is theoretically ambiguous. If underwriting restrictions and rating reforms attract high-risk groups into the market, then average premiums may rise and some businesses may drop coverage. Some opponents of these reforms fear that they will drive the small group market into a "death spiral," thereby contributing to rising rates of uninsured (see for example Curtis et al. 1999; Blumberg and Nichols 1996; Thorpe 1992). However, proponents point out that reforms may encourage greater price competition by limiting the extent to which insurers can compete on the basis of risk selection (Buchmueller and Jensen 1997). This may lead to lower prices and more coverage.

In this paper, we examine the effect of guaranteed issue provisions and rating reforms enacted in the mid-1990s on the extent and nature of employer-sponsored insurance for small groups. We extend the previous literature by focusing on a time during which a number of states moved to tighten rating reforms and to require guaranteed issue of all insurance products. We also examine a wider range of potential outcomes of reforms than most of the earlier literature. The continuing problem of the uninsured has led to new proposals to try to combat it. Some call for greater regulation of insurance markets (Herzlinger 2000). Others call for subsidies to private coverage, but observe that the success of these efforts will depend on having well-functioning insurance markets (Bilheimer and Colby 2001). Thus, understanding the role that market reforms have played is important to the design of future policy intended to increase the proportion of insured workers in small firms.

Literature Review

The empirical evidence on the effect of small group insurance market reforms is somewhat ambiguous. Early case studies of reforms in specific states found little change in coverage overall, though some states experienced improvements in coverage while others experienced a loss (Chollet and Paul 1995; Wessner 1994; Institute for Health Policy Solutions 1995).

More recent analyses have used primarily two types of data. One set of studies has used data from the Current Population Survey (CPS) to investigate how the number of uninsured and the number cov-

ered by private insurance of all types varies as market reforms vary across states or time or, in most cases, both. Most of these studies investigated changes in the uninsured rate or private coverage rate either for the entire nonelderly population or for all adults. This potentially understates the effect of reforms on the smaller target population of employees in small business. Custer (1998), using data from the 1998 CPS, concluded that both guaranteed issue and rating reforms led to increases in the number of uninsured. However, this conclusion was based on differences in uninsured rates in a cross-section of states and may reflect geographic differences other than market regulation. Several analysts have pooled data from multiple years of the CPS to control for state-specific effects in the uninsured rate in analyzing the role of reforms. Two of these studies, one for 1989–94 and a second for 1989–95, found that neither access nor rating reforms in the small group market affected the uninsured rate (Sloan and Conover 1998; Zuckerman and Rajan 1999).¹ In contrast, a third study using data from 1989–95 concluded that guaranteed issue regulations and rating reforms had statistically significant but countervailing effects on the uninsured rate (Marsteller et al. 1998).² Guaranteed issue was associated with a small decrease of about 1 percentage point in the uninsured rate, which was offset when rating reforms were also in place. However, Buchmueller and DiNardo (1998) concluded that strict community rating reforms do not affect uninsured rates among all adults or among workers in small firms; their conclusion was based on a comparison of trends in CPS uninsured rates in a state enacting community rating (New York), with trends in a state with no reforms (Pennsylvania) and a state with only modest reforms (Connecticut).

Another strand of literature has analyzed employer data to investigate the effect of insurance market reforms on employer decisions to offer insurance. In contrast to the population analyses, the employer-level analyses focus on the target population of small business. These studies, too, have produced mixed results. Hing and Jensen (1999) used variation among states in the insurance market reforms that had been enacted prior to 1993 to study access and rating reforms. They concluded that the probability of a small firm offering insurance was about two to three percentage points higher in states that had reforms in place for several years than in states that had not enacted reforms by 1993. As the authors observe, however, states that had better functioning markets may have been states to enact reforms early, and this

self-selection may account for their cross-section results. Jensen and Morrisey (1999) pooled time-series and cross-sectional data on small employers to analyze reforms enacted over the period 1989 to 1995. Overall, they did not find statistically significant effects of access reforms. However, sample size—and hence power—was small and point estimates suggested that reforms increased small firm offer rates by about two to seven percentage points. Similarly, Simon (1999) reports small and generally insignificant effects of reforms enacted between 1993 and 1997 on employer offer rates.³ Buchmueller and Jensen (1997) also report that more small firms in California offered health insurance following comprehensive reforms that went into effect in 1993; this result was especially pronounced among firms with fewer than 10 employees. However, similar patterns were not found in other states enacting reforms during the study period. Moreover, an increase in offer rates of similar magnitude was seen among very small firms in states that had enacted reforms prior to the study period, suggesting temporal trends might be at work.

In sum, the preponderance of evidence suggests that small group market reforms have had little effect on the decisions of small employers to offer insurance. However, many of these previous studies looked at reforms enacted in the early '90s. Subsequently, a number of states moved to tighter issue and rating reforms, which might have a greater effect than the “first generation” of reforms. In addition, most of the earlier studies did not differentiate the extent of reform—for example, guaranteed issue for all products vs. only some standard products, or tight vs. loose rating restrictions. As a consequence, they might underestimate the effect of stringent reform. A contribution of our research is that we used a detailed database describing small group insurance market regulations in each state during the period 1990 to 1997 to differentiate the extent of reform.⁴ Also, we studied reforms adopted between 1994 and 1996, which was a period when states were moving toward tighter rating regulations—especially prohibition of the use of health as a rating factor. In contrast, rating reforms covered in many of the earlier studies permitted the use of health ratings, though often limiting the permissible range of variation associated with health differences among groups (Curtis et al. 1999). Finally, we go beyond an exploration of the effect of the reforms on employer offer rates and employee enrollments to examine a number of other hypotheses about reforms, as described later.

Data and Methods

Data

Our data are from the National Employer Health Insurance Survey (NEHIS) and the 1997 Robert Wood Johnson Foundation (RWJF) Employer Health Insurance Survey. The NEHIS, sponsored by the National Center for Health Statistics, completed interviews with 34,604 private employers with one or more employees in 1994. The nationwide sample was designed to provide reliable state-level estimates of employers and employees.⁵ The 1997 RWJF survey, conducted by RAND and the Research Triangle Institute, interviewed 21,545 private employers in the continental United States. The sample was concentrated in the 60 communities followed by the RWJF Community Tracking Study and in states having significant small group rating reforms. These cases were supplemented by a sample from the remainder of the continental United States to better represent the nation's business establishments.⁶

The sampling frame for both surveys was Dun's Market Identifiers national census of employment establishments. The NEHIS sample was stratified by state, and within state by firm and establishment size. (Firm size refers to the number of employees at all locations of a business nationwide; establishment size refers to employment at a single location of a business.) The RWJF survey was stratified by geographic area (as defined previously) and by size of the establishment. Sampled establishments in each study are weighted to account for different sampling probabilities and for nonresponse. The weighted samples in both surveys represent all private employment establishments that have at least one employee.⁷ The NEHIS survey included establishments in all 50 states and the District of Columbia, whereas the RWJF covered establishments in the continental United States. We restricted our analysis of the NEHIS to the geography covered by the RWJF survey. The distribution of weighted establishments by establishment size, firm size, and industry was similar across the surveys. In addition, as we describe next, our analysis controls for employer characteristics and, hence, for any small differences between the realized samples.

The surveys used similar questions and definitions. Both collected information from employers using computer-assisted telephone interviews (CATI). We subjected the databases to the same algorithms to edit data for consistency and outlier values, and to impute missing data. Both surveys were conducted with the person or persons in each establishment most knowl-

edgeable about health benefits and business and worker characteristics. The NEHIS survey was administered during 1994 and asked respondents to report characteristics of coverage as of the end of 1993. The RWJF survey was administered during 1997 and employers were asked about coverage as of the date of the interview. The response rate to the NEHIS was 71%; for the RWJF survey, it was 60%. These are comparable to response rates for two other recent large-scale surveys of employer health insurance (Gabel, Ginsburg, and Hunt 1997; Branscome et al. 2000).

The surveys collected information about the employer, the number of workers, and the distribution of key characteristics of these workers. They also collected detailed information about every health insurance plan offered by the business, including the number of employees enrolled in the plan, premiums, and the type of plan. In addition, the RWJF survey asked about the percentage change in premiums across all offered plans that each employer experienced between 1996 and 1997. The establishment is the unit of observation for most analyses in this paper. However, the numbers of employees and health plan enrollees at each establishment also allow us to develop sampling weights to make estimates for employees and enrollees for some analyses.

Estimation Strategy

Our analysis of the effects of reforms focuses on guaranteed issue requirements and rating reforms that prohibit the use of health status as a factor. We do this because these represent the “second generation” of reforms—few states required guaranteed issue of all products nor prohibited rating based on health status prior to 1993.⁸ We examine nine states that enacted these reforms between 1993 and 1996. Thus, the NEHIS data from 1993 provide outcomes prior to reforms, and the RWJF survey data from 1997 provide outcomes subsequent to reforms.⁹ Six of the reform study states had neither guaranteed issue nor health rating prohibitions prior to 1993 but added one of these provisions to law between 1993 and 1996. Three of the states required that some products be guaranteed issue prior to 1993, but enacted tighter issue regulations or health rating prohibitions between 1993 and 1996.¹⁰ We distinguish between states that prohibited health as a rating factor with little or no restriction on the use of age (high and low premiums based on age were allowed to differ by more than 100%, or a two-to-one band), and those that prohibited health and imposed a prohibition or tight restriction on the use of age as well.

To control for temporal effects, we compare outcomes for small employers in the nine reform states with outcomes in a group of 11 states and the District of Columbia where the reforms were not enacted.¹¹ These states are Alabama, Arkansas, Georgia, Illinois, Indiana, Louisiana, Michigan, Pennsylvania, New Mexico, Nevada, and West Virginia.¹² These 12 areas did not provide for guaranteed issue, nor did they prohibit health rating prior to 1997.¹³

Table 1 summarizes the provisions in the nine reform states, indicates the dates of reform, and presents the sample sizes for our study in each state and the comparison group. We define small employers to be those with 50 or fewer workers, because this is the definition adopted in eight of the nine states.

We measure the effect of the regulations in three ways. First, we compare outcomes in the small group market in 1997 in each of the reform states with outcomes in the 12 nonreform areas taken as a group. However, these cross-section comparisons are biased by self-selection if there are market characteristics that affect states’ decisions to enact regulations and affect market outcomes. To control for such state-specific effects, we examine changes in outcomes between the pre-reform period (1993) and the post-reform period (1997), and test whether changes over the period in each of the reform states differ from those in the control group. The latter change represents a control for temporal factors. This is typically referred to as a “difference-in-differences” estimate.

The difference-in-differences estimate accounts for time-invariant, state-specific effects; however, there may be state-specific changes over time unrelated to regulations that could bias this comparison. To control for state-specific temporal effects, we assume that these factors affect medium as well as small employers in the state. (We define medium employers to be those with 51 to 150 employees.) We then can compare the change in outcomes over time between small employers and medium employers in reform states with the change between small and medium employers in the control states. This is referred to as a “difference-in-difference-in-differences” estimate.

Formally, we fit the following model:

$$\begin{aligned}
 Y = & b_0 + b_1 \cdot \text{YR97} + b_2 \cdot \text{SMALL} + b_3 \cdot \text{STATE} \\
 & + b_4 \cdot (\text{STATE} \cdot \text{YR97}) + b_5 \cdot (\text{SMALL} \cdot \text{STATE}) \\
 & + b_6 \cdot (\text{SMALL} \cdot \text{YR97}) \\
 & + b_7 \cdot (\text{SMALL} \cdot \text{STATE} \cdot \text{YR97}) + b_8 \cdot X \\
 & + \epsilon.
 \end{aligned}
 \tag{1}$$

Table 1. Small group reform provisions and sample sizes, 1993 and 1997

	12 Nonreform states ^a	MD	NJ	NY	WA	CA	MN	FL	OR	CT
Reform provisions										
1993 provisions										
Guarantee issue	None	None		None	None	None	None	Some	Some	Some
Rating: health variation	Allowed	Allowed	None	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed
Rating: age variation			Allowed							
restricted to 100% spread	Not restricted	Not restricted	Not restricted	Not restricted	Not restricted	Not restricted	Not restricted	Not restricted	Not restricted	Not restricted
1997 provisions										
Guarantee issue	None	All	All	All	All	All	All	All	All	Some
Rating: health variation	Allowed	Prohibited	Prohibited	Prohibited	Prohibited	Allowed	Allowed	Prohibited	Prohibited	Prohibited
Rating: age variation		Restricted	Restricted	Prohibited					Restricted	
restricted to 100% spread	Not restricted				Not restricted	Not restricted	Not restricted	Not restricted		Not restricted
Date of guarantee issue legislation	NA	Jul-94	Jan-94	Apr-93	Jul-94	Jul-93	Jul-93	Apr-94	Oct-96	NA
Date of rating legislation	NA	Jul-95 ^b	Jan-96	Apr-93	Jan-96	NA	NA	Jan-94	Mar-93	Jul-95
Largest size group affected	NA	50	49 ^c	50	50	50	50	50	25	50
1993 sample sizes										
Groups size 1–50	4,436	375	434	571	426	624	412	473	368	346
Groups size 51–150	1,028	85	100	108	97	115	114	101	89	76
1997 sample sizes										
Groups size 1–50	2,188	295	568	1,336	828	1,433	1,435	1,422	1,461	1,253
Groups size 51–150	440	^d	97	193	110	170	134	141	166	112

Source: National Employer Health Insurance Survey, 1997 Robert Wood Johnson Foundation Employer Health Insurance Survey, and Institute for Health Policy Solutions database of small group reform provisions.

Note: NA = not applicable.

^a Alabama, Arkansas, District of Columbia, Georgia, Illinois, Indiana, Louisiana, Michigan, Pennsylvania, New Mexico, Nevada, West Virginia.

^b Maryland enacted prohibitions on health as a rating factor, but with limited restrictions on age effective July 1994. Tighter restrictions on age variation became effective on the date listed.

^c Increased to 50 in October 1997.

^d Fewer than 50 observations.

The variable YR97 is an indicator that takes the value 1 for observations from the 1997 RWJF survey and 0 for those from the NEHIS. SMALL is an indicator that takes the value 1 for businesses that are parts of firms with 50 or fewer employees and 0 for businesses of firms that have 51 to 150 employees. STATE represents nine indicator variables included in the regression for the reform states. For example, there is one variable that takes the value 1 for employers in Maryland and 0 otherwise; similar variables are included for employers in each of the other reform states. The vector X represents other characteristics of the employer included to control for differences over time and across states in the composition of employers. We define these control variables subsequently. The cross-section estimate of the effect of reform is given by $b_2 + b_4 + b_6 + b_7$; the difference-in-differences estimate is $b_6 + b_7$; and the difference-in-difference-in-differences estimate is b_7 . We fit a model of this form for each of the outcomes described later.

We use the fitted model to predict outcomes for each reform state in each year and for the grouped control states in each year assuming that the employer composition is the same in all states and over time.¹⁴ We do this by predicting outcomes for each employer in our RWJF study sample as if it were observed in the state and year in question. That is, our RWJF sample is used to define the distribution of characteristics, X , for the small- and medium-size employers in our prediction sample. For each of these employers, we use the fitted equation given earlier to predict what the outcome would be in 1993 if the employer were in one of the nonreform states, by setting the value for all the nonreform state indicators to 0 and for YR97 to 0. We then set the YR97 indicator to 1 and predict the 1997 outcome for employers in the nonreform states. Similarly, by varying the values of the indicators for the reform states we predict the 1993 and 1997 outcomes for a constant mix of employers in each of these states. We report the mean of the predicted values for small employers for each year and state in the tables to follow. The difference-in-differences and difference-in-difference-in-differences measures based on the predicted values are also given. Predicted values for medium size employers, used in the difference-in-difference-in-differences, are reported in the Appendix Table.

Control Measures

In addition to the state, year, and size indicators, our regression models include other employer character-

istics to control for differences among states in the composition of employers and employees. These characteristics include: industry; detailed indicators for the firm and establishment size; the percentage of low-income workers at the establishment (workers earning less than \$7 per hour); the percentage of union employees; the percentage of employees working full time (35 hours or more per week); and the age of the business. We also include indicators for region in our analysis, so that our comparison between a reform state and the pool of contrast states is not confounded by regional differences.

Outcome Measures

The outcomes that we examine include insurance offer and enrollment rates in any employer-sponsored health plan and in a health maintenance organization (HMO) plan; turnover in offer decisions; and premiums, variability in premiums, and the change in premiums.

We examine both the percentage of employers offering health insurance and the percentage of employees in firms offering insurance. The variable in each case is the dichotomous response to the question posed to employers as to whether they offer health insurance to employees. When we use establishment weights in the analysis, the result is an estimate of the percentage of employers offering insurance. Using employee weights, we produce an estimate of the percentage of employees in businesses that offer insurance. Because the outcome is dichotomous, we fit logistic regression models using the variables shown in equation 1. We also investigate the percentage of all employees who are enrolled in their employer's health insurance plan. This is a continuous variable and we fit a linear regression model as shown in equation 1 for analysis of this outcome.

Some analysts believe that small group insurance reforms may increase the role of HMOs in the small group market. Many HMOs use community rating and do not limit enrollment on the basis of health factors. Reforms that prohibit these practices by commercial insurers may, therefore, make the small group market more attractive to HMOs. Some support for the hypothesis has been demonstrated in other studies (Buchmueller and Jensen 1997; Morrisey and Jensen 1997). To explore this hypothesis, we fit a logistic regression model to examine the percentage of insurance-offering employers that offer an HMO as one of the plans and the percentage of enrollees who are in an HMO plan. Each health insurance plan offered was classified as an HMO or other type of plan based on the survey

respondent’s self-assessment of the plan type, aided by complete definitions as needed.

Rating reform is intended to lower the price of insurance for high-risk groups, but, as we noted earlier, the effect on average premiums depends on whether the reform results in cross-subsidies that drive low-risk groups from the market (Curtis et al. 1999; Thorpe 1992). The two employer surveys measured premiums for single coverage and for family coverage for each health insurance plan offered by employers in the sample. To account for differences in the scope and depth of benefits of different insurance plans, the premiums for each plan were adjusted by an estimate of the actuarial value of the plan benefits. The actuarial value for a plan ranges between 0 and 1 and represents the share of expenditures on health care by a standardized group of enrollees that the plan would reimburse. Using the 1987 National Medical Expenditure Survey, we generated the distribution of expenditures for a representative cross-section of the population under age 65. The 1987 expenditures were adjusted to total spending for 1993 and 1997 using the aggregate spending in each year from the National Health Accounts, developed by the Health Care Financing Administration. We then used information about plan benefits from the employer surveys to determine the amount that each plan would reimburse.¹⁵ We adjusted premiums by multiplying them by the ratio of the average actuarial value for all plans to the plan-specific actuarial value. We regressed adjusted premiums on the state, year, and size indicators and the control characteristics described earlier to investigate the effect of the market reforms on premium levels. We added type of plan (HMO, preferred provider organization or point-of-service, indemnity) as a control variable for the premium regressions. The unit of analysis in the premium regressions is the insurance plan. In fitting the regression, we used establishment sampling weights multiplied by the share of the employer’s total enrollment in the plan. For businesses offering more than one plan, therefore, this effectively examines the average single premium and the average family premium for policies purchased by the employer.¹⁶

Rating reforms restrict the range of variation in premiums that an insurer is permitted to charge in the small group market. Thus, they were designed to reduce variability in premiums among employers and to promote greater stability over time in premiums faced by an employer. To examine the effects of reforms on variability in premiums over time, our outcome measure is the residual variance in plan pre-

miums after accounting for the variance attributable to the control factors (regression variance). That is, it is the residual variance from the premium regression, measured as the square of the regression residual, for each establishment’s insurance plan. We divided the residual variance in premiums by the squared value of the mean premium for employers in the state, year, and size group. That is, our measure is essentially the coefficient of variation squared (called the *relvariance*) (Kish 1967). It is a measure of variance relative to the level of prices to account for differences in prices over time and geography that may affect the absolute value of the variance.¹⁷

To assess the effects on stability in premiums over time, we study the percentage of employers reporting premium changes of greater than 10% (either increase or decrease) between 1996 and 1997 in the RWJF survey. Absent restrictions on insurer pricing, small employers can experience extreme rate variation which, in turn, could result in high turnover of coverage (IHPS 1995). If reforms are successful in limiting the year-to-year variation in premiums that small employers face, then there may be greater stability in employers’ decisions to offer insurance (Buchanan and Marquis 1999). Employers interviewed in the 1997 RWJF survey were asked if they offered health insurance two years previously as well as currently. We used these questions to measure whether the employer made a change in whether to offer coverage. This variable is used to assess whether rating reform affects stability in the market. Because this measure comes from one point in time, our model does not include year indicators and the interaction of year and other characteristics.

Limitations

Our data come from two very large surveys and so provide an ample number of observations to detect effects of reform, if they exist. Nonetheless, there are some limitations of our data that may hamper our ability to detect effects. First, our study period may be too short to detect the full effects of small group reform, because it may take some time for insurers and employers to adjust to the regulations once they are implemented. Second, we study a period during which there was considerable activity in states to introduce reforms in the small group market. As a result, our control group was limited to a dozen states, omitting a broad middle group from the analysis.

Finally, there is the potential for selection bias in our comparison. Many of the states that we did not study adopted some regulations on rating and guar-

Table 2. Insurance offer and enrollment rates for small business, 1993 and 1997

	12 Nonreform states	MD	NJ	NY	WA	CA	MN	FL	OR	CT
Percentage of employers offering insurance										
1993	42.3	43.6	33.5	37.9	48.2	39.7	39.6	40.5	45.3	42.3
1997	40.9	45.9	38.7	32.6	41.5	36.9	44.2	44.1	48.4	39.2
1997 difference	NA	5.0	-2.2	-8.3*	.6	-4.0	3.3	3.2	7.5*	-1.7
Difference in differences	NA	3.7	6.6*	-3.9	-5.3	-1.4	6.0	5.0	4.5	-1.7
Difference in difference in differences ^a	NA	^b	7.6	-8	-5.9	-5	10.1	3.4	8.4	5.7
Percentage of employees in firms offering insurance										
1993	58.3	60.8	43.4	50.3	54.6	57.1	57.2	53.9	62.7	54.8
1997	57.7	60.1	46.6	43.8	60.0	55.4	59.4	59.5	66.3	50.9
1997 difference	NA	2.4	-11.1*	-13.9*	2.3	-2.3	1.7	1.8	8.6*	-6.8*
Difference in differences	NA	-.1	3.8	-5.9*	6.0	-1.1	2.8	6.2*	4.2	-3.3
Difference in difference in differences ^a	NA	^b	23.7*	-18.1	7.1	-2.5	6.0	8.9	4.8	7.7
Percentage of employees enrolled										
1993	38.0	36.5	34.7	37.1	45.4	38.4	34.9	33.5	42.5	39.4
1997	39.0	36.2	38.7	33.6	43.3	37.3	39.0	40.2	47.1	38.9
1997 difference	NA	-2.8	-.3	-5.4*	4.3	-1.7	0.0	1.2	8.1*	-.1
Difference in differences	NA	-1.3	3.0	-4.5*	-3.1	-2.1	3.1	5.7*	3.6	-1.5
Difference in difference in differences ^a	NA	^b	2.1	-20.8*	-8.0	-1.4	1.0	1.0	-3.5	-4.1

Source: National Employer Health Insurance Survey, 1997 Robert Wood Johnson Foundation Employer Health Insurance Survey, and Institute for Health Policy Solutions database of small group reform provisions.

Notes: "1997 difference" compares outcomes in each reform state to those in the 12 nonreform states. "Difference in differences" compares the 1993 to 1997 change in outcomes in each reform state to the change in the 12 nonreform states. "Difference in difference in differences" compares difference-in-differences measures for employers with 50 or fewer workers to those with 51 to 150 workers. These measures are not applicable, "NA," to the nonreform state control group.

^a Predicted values for 1993 and 1997 for employers with 51 to 150 workers are given in the Appendix.

^b Fewer than 50 observations.

* Significantly different at .05 level.

Table 3. Turnover in offer rates for small business by state reform provisions, 1995 and 1997

	12 Nonreform states											
		MD	NJ	NY	WA	CA	MN	FL	OR	CT		
Percentage of employers changing offer decision 1995 to 1997	14.7	16.8	15.7	17.0	10.5	9.3	16.5	16.6	8.5	18.0		
Difference	NA	2.1	1.0	2.3	-4.2	-5.4	1.8	1.9	-6.2*	3.3		
Difference vs. difference for medium size groups	NA	^b	3.1	3.5	-1	-2.0	-2.4	-3.7	-8	5.0		

Source: 1997 Robert Wood Johnson Foundation Employer Health Insurance Survey and Institute for Health Policy Solutions database of small group reform provisions. Notes: “Difference” compares turnover in each reform state to that in the 12 nonreform states. “Difference vs. difference for medium size groups” compares the difference for employers with 50 or fewer workers to that for employers with 51 to 150 workers.

^a Predicted values for 1993 and 1997 for employers with 51 to 150 workers are given in the Appendix.

^b Fewer than 50 observations.

* Significantly different at .05 level.

anteed issue during the study period, though not as stringent as the reforms we investigated. Some of our study states adopted less stringent reforms as interim steps toward the reforms we studied. States that introduced the “second generation” reforms may be those that found earlier reforms did no harm; in contrast, states that did not move forward may have had less positive experience with interim reforms. That is, if reforms were adopted by all states, the effects might have differed from those we observed.

Results

Our evidence from the employer surveys suggests that the reforms did not affect coverage (Table 2). There are few statistically significant findings. Although the cross-section estimate, the difference-in-differences estimate, and the difference-in-difference-in-differences estimate often suggest the same direction of effect for a state, there is not a consistent direction of effect across the states.

Four of the reform states introduced guaranteed issue for all products and rating reforms (Maryland, New Jersey, New York, and Washington). The cross-section estimates of the effect of reform are mostly statistically insignificant; they suggest positive effects in two states, but negative effects in the other two states. Similarly, the difference-in-differences estimate and the difference-in-difference-in-differences estimates are generally statistically insignificant and yield mixed signs for these four states.¹⁸ Two of the states introduced access reforms but did not prohibit health as a rating factor (California and Minnesota). There are no statistically significant differences between these states and the control states in our three estimates for the percentage of employers offering insurance. Furthermore, the direction of effect is positive in one state and negative in the other. Finally, the other three states (Florida, Oregon, and Connecticut) introduced health rating prohibitions and, in two of the states, strengthened access reforms as well. Again, comparison with the control states suggests statistically insignificant differences, and the direction of effects is of mixed sign. Similar patterns are found when we examine the percentage of employees offered insurance and the percentage of employees enrolled in insurance.¹⁹

Previous research has suggested that the effects of small group reform might differ for the smallest of small businesses.²⁰ To test for this, we added to our model of offer rates interaction terms for firms with fewer than 10 workers. For each state, the direction of effect was similar for very small (<10 workers)

Table 4. Offer and enrollment rates for HMOs for small business, 1993 and 1997

	12 Nonreform states	MD	NJ	NY	WA	CA	MN	FL	OR	CT
Percentage of employers offering HMO (if offer insurance)										
1993	14.0	37.0	5.6	21.0	21.1	44.7	23.5	21.4	40.0	13.9
1997	30.0	58.5	35.8	43.7	33.9	57.2	46.1	53.0	57.6	37.2
1997 difference	NA	28.5*	5.8	13.7*	3.9	27.2*	16.1*	23.0*	27.6*	7.2
Difference in differences	NA	5.5	14.2*	6.7	-3.2	-3.5	6.6	15.6*	1.6	7.3
Difference in difference in differences ^a	NA	^b	29.8*	5.1	7.2	-8.5	18.1	20.8	4.2	24.2
Percentage of enrollees in HMOs										
1993	15.2	32.9	8.6	18.6	18.6	43.5	31.1	25.6	37.1	13.7
1997	28.9	56.2	33.8	43.2	22.5	53.6	52.9	56.2	55.5	36.4
1997 difference	NA	27.3*	4.9	14.3*	-6.4	24.7*	24.0*	27.3*	26.6*	7.5
Difference in differences	NA	9.6	11.5*	10.9	-4.8	-3.6	8.1	16.9*	4.7	9.0
Difference in difference in differences ^a	NA	^b	15.5	5.5	-13.5	13.0	-6	29.6*	16.1	33.9*

Source: National Employer Health Insurance Survey, 1997 Robert Wood Johnson Foundation Employer Health Insurance Survey, and Institute for Health Policy Solutions database of small group reform provisions.

Notes: "1997 difference" compares outcomes in each reform state to those in the 12 nonreform states. "Difference in differences" compares the 1993 to 1997 change in outcomes in each reform state to the change in the 12 nonreform states. "Difference in difference in differences" compares difference-in-differences measures for employers with 50 or fewer workers to those with 51 to 150 workers. These measures are not applicable, "NA," to the nonreform state control group.

^a Predicted values for 1993 and 1997 for employers with 51 to 150 workers are given in the Appendix.

^b Fewer than 50 observations.

* Significantly different at .05 level.

Table 5. Monthly premiums and variation in premiums for small business, adjusted for plan benefits, 1993 and 1997

	12 Nonreform states	MD	NJ	NY	WA	CA	MN	FL	OR	CT
Premiums for employee-only coverage (\$)										
1993	159	170	192	196	144	169	138	161	130	209
1997	172	166	205	201	158	170	150	170	156	214
1997 difference	NA	-6	33*	29	-14	-2	-22*	-2	-16*	42*
Difference in differences	NA	-17	0	-8	1	-12	-1	-4	13	-8
Difference in difference in differences ^a	NA	^c	27	5	8	17	14	-3	21	12
Premiums for family coverage (\$)										
1993	392	430	452	446	387	416	376	406	341	485
1997	404	428	474	432	384	413	380	436	384	503
1997 difference	NA	24*	70*	28*	-20	9	-24	32*	-20	99*
Difference in differences	NA	-14	10	-26*	-15	-15	-8	-18	31*	6
Difference in difference in differences ^a	NA	^c	27	-28	-13	-5	-14	-14	11	-2
Relvariance in premiums for employee-only coverage^b										
1993	20.7	15.7	30.0	19.3	16.8	19.1	18.7	17.9	16.9	20.9
1997	17.4	8.7	22.0	16.1	15.0	25.8	13.5	13.5	18.8	22.5
1997 difference	NA	-8.7*	4.6	-1.3	-2.4	8.4*	-3.9	-3.9	1.4	5.1
Difference in differences	NA	-3.7	-4.7	.1	1.5	10.0*	-1.9	-1.1	5.2	4.9
Difference in difference in differences ^a	NA	^c	-3.5	2.0	4.1	16.6	-5.1	7.3	9.7	4.8
Relvariance in premiums for family coverage^b										
1993	11.2	11.0	14.6	17.9	8.1	9.8	11.7	9.6	7.3	15.6
1997	12.9	6.5	16.8	16.8	9.2	13.3	11.7	8.4	9.5	14.0
1997 difference	NA	-6.4*	3.9	3.9	-3.7	.4	-1.2	-4.5*	-3.4	1.1
Difference in differences	NA	6.2*	.5	-2.8	-.6	1.8	-1.7	-2.9	.5	3.3
Difference in difference in differences ^a	NA	^c	-1.3	-3.5	-3.2	-6.0	-5.8	-1.7	-2.4	-5.2

Source: National Employer Health Insurance Survey, 1997 Robert Wood Johnson Foundation Employer Health Insurance Survey, and Institute for Health Policy Solutions database of small group reform provisions.

Notes: Observed premiums have been adjusted to account for differences in plan benefits (see "Outcome Measures" in text). "1997 difference" compares outcomes in each reform state to those in the 12 nonreform states. "Difference in differences" compares the 1993 to 1997 change in outcomes in each reform state to the change in the 12 nonreform states. "Difference in difference in differences" compares difference-in-differences measures for employers with 50 or fewer workers to those with 51 to 150 workers. These measures are not applicable, "NA," to the nonreform state control group.

^a Predicted values for 1993 and 1997 for employers with 51 to 150 workers are given in the Appendix.

^b Residual variance from premium level regression divided by the square of the mean premium, times 100.

^c Fewer than 50 observations.

* Significantly different at .05 level.

or other small (10–50 workers) employers (not shown). However, again there are few statistically significant findings and no consistent direction of effect across the states.

We also do not find evidence that reforms have reduced turnover in offers among employers in the small group insurance market (Table 3). In cross-section, eight of the nine differences are not statistically significant; moreover, the point estimates would suggest turnover is greater (not less) in six of the reform states. Using trends among medium employers as a control, we also find insignificant differences between the reform states and the control states, and the results are of mixed sign.²¹

HMO penetration in the small group market was generally greater in the reform states than in the non-reform states, both in 1993 and in 1997 (Table 4). The 1997 difference estimates for HMO offers are all positive and many are significant. Overall, the likelihood that an employer offered an HMO in 1997 was about 18 percentage points higher in the reform states than the nonreform states; enrollments in the HMOs in reform states were also about 18 percentage points higher. These differences are statistically significant, but this could be attributed as easily to the higher initial offer rates as it could to reform. The difference-in-differences estimate and the difference-in-difference-in-differences estimate for HMO market penetration are positive in most reform states, although few are statistically significant. Averaged over all the reform states these are also positive, but not statistically significant. At best, this offers modest support for the hypothesis that reforms advanced opportunities for HMOs in the small group market.

The reforms do not appear to have had a substantial effect either on the level or on the variability of premiums adjusted for plan benefits in the small group market (Table 5).²² In cross-section, we find higher premiums in some reform states than in the control states, but lower premiums in others. This is a weak test, however, because the 1997 differences primarily reflect geographic price differences that are also observed in 1993. The stronger tests, the difference-in-differences estimate and the difference-in-difference-in-differences measure, are generally insignificant and of mixed signs.²³ Moreover, there is not evidence of less variability in premiums among small employers in reform states. In fact, in most measures, we obtain almost as many positive point estimates as negative ones and very few of the estimates are statistically significant. Similarly, we do not find fewer small employers who faced large pre-

Table 6. Small firms with premium changes of more than 10% between 1996 and 1997

	12 Nonreform states											
	MD	NJ	NY	WA	CA	MN	FL	OR	CT			
Percentage of employers	16.5	18.2	8.8	22.4	13.0	19.8	28.7	18.9	16.4			
Difference	NA	1.7	-7.7	5.9	-3.5	3.3	12.2*	2.4	.4			
Difference in differences	NA	3.5	-12.3*	-9.1	.8	1.8	7.2	7.0	-1.7			

Source: 1997 Robert Wood Johnson Foundation Employer Health Insurance Survey and Institute for Health Policy Solutions database of small group reform provisions.

Notes: "Difference" compares the rate of large premium change in each reform state to that in the 12 nonreform states. "Difference in differences" compares the difference for firms with 50 or fewer workers to that for firms with 51 to 150 workers.

^a Fewer than 50 observations.

* Significantly different at .05 level.

mium changes in either direction in reform states (Table 6). Very few of the differences between reform and control states are statistically significant, and point estimates are of mixed sign.

Buchmueller and Jensen (1997) found that the upper tail of the premium distribution changed more than the lower tail after reform in California. We tested for this effect by measuring change in the percentage of premiums that exceeded 150% of the mean premium, both for employee-only and family coverage. There was no support in our data for this hypothesis. The 1997 difference measure for the density of the upper tail in the reform states in 1997 was positive 10 times and negative eight times across both types of premiums. Both the difference-in-differences measure and the difference-in-difference-in-differences measure were of mixed signs, all were insignificant, and the measures were often inconsistent within a state for the two premium types (not shown).

Discussion

Our study adds to the recent literature on the effects of small group health insurance reform in four ways. First, it addresses the second generation of reforms, which were implemented more recently and were more stringent than the original reforms that several previous studies have addressed. Second, in choosing our study states we relied on measures of rate regulation that are more precise than those used by other researchers, who have used general secondary sources.²⁴ Third, by limiting our comparisons to states with the most stringent reform provisions and those that had no reform, our tests were designed to find an effect, if there is one.²⁵ Finally, our employer survey data provided large samples of small businesses and their health insurance offerings, and they permit us to focus our analysis on the population to which the reforms were targeted.²⁶ This provided us with a more convincing test of causation than if we had studied all employers or employees, or included other forms of private insurance in addition to employer-sponsored insurance.

Overall, looking across the several outcomes and alternative estimators for each of them, we found little evidence that even stringent small group reform legislation led to a pattern of substantial, significant quantitative effects on the small group market across the nine study states by 1997. Despite the notable differences in approach and time period, these findings are consistent with those of three other recently published studies (Jensen and Morrisey 1999; Sloan and Conover 1998; Zuckerman and Rajan 1999).

Both proponents and opponents of small group market reform will probably greet this news with mixed emotions. For proponents, we do not find support for the hope that reform would lead to a significant narrowing of the variance in premiums or a sizable expansion in employment-based coverage among small groups. On the other hand, there might have been important improvements in access for some high-risk groups, which we could not detect with our analysis. For opponents of reforms of small group insurance markets, there should be some relief in hearing that stringent reform did not lead to marketwide price increases or sizable reductions in employment-based coverage. On the other hand, our analysis would not detect whether or not some low-risk groups might have dropped coverage in response to specific rate increases they faced.

The reforms that we studied are in large part intended to eliminate some of the most serious problems in the small group market. They sought to guarantee that no small business is denied access to insurance, to protect groups that experience unexpected high medical expenditures from extreme premium volatility, and to shield high-risk groups from prohibitively high costs of insurance. However, our analysis is targeted toward finding overall effects across the whole population of small employers. This does not mean that there were not many individual gainers and losers under reform in the various states we studied. However, identification of these potential effects will require other designs and data sources.

Notes

Any views expressed in this paper are solely those of the authors, and no endorsement by the Robert Wood Johnson Foundation, the National Center for Health Statistics, or RAND is intended or should be inferred. The authors are grateful to Rick Curtis, Rafe Forland, Kevin Haugh, and Stephanie Lewis for coding and interpreting the small group reform data used to classify states in this research. The authors thank Linda Andrews, Roald Euller, and Ellen

Harrison for their efforts in preparing the survey data files on which this paper is based.

- 1 Sloan and Conover (1998) studied nonelderly adults only during the period 1989–94. Zuckerman and Rajan (1999) studied all nonelderly during the period 1989–95.
- 2 This study used an augmented version of Zuckerman and Rajan’s data, for the same population and period, but it coded small group reforms differently.

- 3 Simon reports a significant but small (2 percentage point) fall in offer rates among small employers in states implementing reform relative to the trend in non-reform states. After adjusting for temporal change among large employers, however, the effect is not significant.
- 4 This database was developed by the Institute for Health Policy Solutions, see Curtis et al. (1999).
- 5 For details on the NEHIS, see National Center for Health Statistics (1997).
- 6 See Research Triangle Institute (1998); Kemper et al. (1996).
- 7 Excluded are self-employed individuals with no employees.
- 8 Prior to 1993, only two states, Vermont and Massachusetts, had legislation which guaranteed issue of all products in the small group market and prohibited health as a rating factor. This and other results on the history of state reform legislation are from an analysis of the IHPS database documenting the legislative history of reforms in all states (Curtis et al. 1999).
- 9 The reforms in one of our states—New York—were effective in April 1993. However, some policies had until their first anniversary following the effective date to comply, and so we assume reforms had little effect in 1993.
- 10 California and Minnesota also introduced limits on the use of health status as a rating factor, but did not prohibit it. In California, the high and low premium based on health cannot differ by more than 20%; in Minnesota, the difference is limited to 67%.
- 11 Two of these 12 states, Michigan and Pennsylvania, had Blue Cross–Blue Shield plans that had significant market share and practiced guaranteed issue and community rating. We tested the sensitivity of the results shown in this paper by excluding these two populous states from the control. Our findings were the same and so are not shown here.
- 12 The states not included in our analysis enacted some new regulations concerning the issue of policies or rating reforms but did not adopt regulations as stringent as the reform states. However, because these states did undergo regulatory change that might affect outcomes, their inclusion could dampen our estimate of the effect of the reforms we study. Our objective was to maximize our ability to detect effects.
- 13 By mid-1997, most states had enacted legislation to guarantee issue of all products in the small group market to conform to the HIPAA legislation. We assume that this does not affect outcomes for 1997, because most contracts are written for the calendar year. None of our nonreform states adopted guarantee issue provisions for even a limited range of products prior to this. Some of our comparison states had rating reforms, however, but they permitted considerable variation in premiums based on age and health status (greater than 100% spread).
- 14 We report results for each of the reform states separately because we want to investigate whether there is a consistent pattern of effects across the states. Moreover, the states differed in the nature of reforms enacted (see Table 1). In contrast, we pool the 12 non-reform states. While the magnitude of a reform effect might be sensitive to the choice of a contrast, our conclusions stem in large part from a lack of consistency across the reform states—and different choices of the nonreform states to include in the contrast would not alter this finding. Furthermore, the contrast states are alike in that they did not enact reforms on the dimensions we study. Moreover, as we noted earlier, the exclusion of two nonreform states in the contrast led to similar results.
- 15 The expenditure distributions and actuarial values were designed and calculated for us by the Actuarial Research Corporation.
- 16 We also produced estimates using enrollee weights and obtained essentially the same results, so they are not reported.
- 17 Using the variance rather than relative variance as our outcome yielded similar results.
- 18 The predicted values on all outcomes for medium-size employers, which enter into the difference-in-difference-in-differences calculation, are given in the Appendix Table.
- 19 To confirm our findings from the employer survey, we conducted a similar analysis for the share of workers enrolled in their own employer group plan using data from the March 1993 and March 1997 Current Population Survey (CPS). With the CPS, we analyzed the difference-in-differences between each reform state and the 12 nonreform states in the percentage of employees in firms with fewer than 100 workers who held coverage from their own employer; the CPS does not permit us to produce estimates for firms of 50 or fewer workers. The results from the CPS also did not produce statistically significant estimates of the effect of reform, nor did the results suggest a consistent pattern of effects across states.
- 20 See, for example, Buchmueller and Jensen (1997).
- 21 Because we are comparing turnover in cross-section, we do not have controls for temporal effects. Moreover, the first test which contrasts stability in each of the reform states with the nonreform states does not control for state-specific effects. The second test uses stability of medium-size employers as control for state-specific effects. These are weaker tests than employed for the other outcome measures. However, we report these results because improved stability in the small group market was an important goal of reforms.
- 22 Because premiums are highly skewed, we also fit models using the natural logarithm of premiums. These models produced few significant difference-in-differences or difference-in-difference-in-differences estimates of the effect of reform. As with the estimates of the effects on the mean, the effects on the median were not of consistent sign. We present the predictions from the model fit to premiums on the dollar scale rather than the logarithm scale, because the former produces estimates of mean differences, whereas we would have to make assumptions about how variances vary across states to transform the predictions from the log scale to the dollar scale.
- 23 Simon (1999), in contrast, concludes that states that have some form of guaranteed issue and some rating regulations have higher premiums than states without these regulations, based on an analysis of the NEHIS and the Medical Expenditure Panel Survey Insurance Component completed in 1996. However, the trend in premiums among small employers (those with 25 or fewer employees) did not differ significantly between reform and nonreform states and was very small in magnitude. The conclusion stems primarily from a negative trend in premiums for large employers (those with 100 or more employees) in the reform states relative to the nonreform states (that is, from a difference-in-difference-in-differences estimate of the effect).
- 24 This is a step for further research urged by Marsteller et al. (1998). In addition, our choices of states were

based on implementation dates for both rate regulation and guaranteed issue that are more precise than the assumptions that have been used before.

25 By considering each reform state separately, in effect

we follow Zuckerman and Rajan (1999), who advised examining reforms as packages.

26 Jensen and Morrisey (1999) acknowledged the desirability of large samples of employers for this type of research.

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Appendix Table. Predicted 1993 and 1997 outcomes for medium-size employers.

Outcome	12 Nonreform states	MD	NJ	NY	WA	CA	MN	FL	OR	CT
Percentage of employers offering insurance										
1993	91.2	92.7	86.5	86.6	94.5	95.3	88.2	77.2	91.9	91.6
1997	90.2	^a	84.5	82.5	94.1	93.4	83.1	77.8	87.0	83.2
Percentage of employees offered insurance										
1993	90.5	93.2	89.7	77.7	95.0	94.1	88.2	81.7	92.2	85.7
1997	93.9	^a	73.2	93.3	97.3	93.9	88.4	82.4	95.0	78.1
Percentage of employees enrolled										
1993	59.5	55.9	55.9	54.5	67.7	63.7	58.2	51.0	68.8	56.1
1997	56.6	^a	53.9	67.9	69.7	60.1	57.4	52.8	73.0	55.8
Percentage of employers changing offer decision 1995 to 1997										
	7.7	^a	5.6	6.5	3.6	4.3	11.9	13.3	2.3	6.0
Percentage of employers offering HMO (if offer insurance)										
1993	24.6	44.5	26.3	28.1	30.5	50.2	36.7	40.1	43.2	25.6
1997	39.7	^a	25.8	44.8	35.2	70.3	40.3	50.0	55.7	23.8
Percentage of enrollees in HMOs										
1993	23.6	31.1	18.4	27.6	15.8	57.6	39.2	52.8	37.0	31.8
1997	40.0	^a	30.8	49.4	40.9	57.4	64.3	56.5	42.0	23.3
Monthly premiums for employee-only coverage (\$)										
1993	152	155	184	184	145	160	133	136	129	182
1997	168	^a	186	200	167	160	147	164	150	191
Monthly premiums for family coverage (\$)										
1993	388	412	445	410	404	409	370	370	350	463
1997	392	^a	432	416	406	403	380	406	374	475
Relvariance in premiums for employee-only coverage										
1993	11.7	6.1	15.3	20.1	19.0	22.1	9.0	12.8	15.0	16.7
1997	16.6	.8	18.7	23.7	21.7	19.0	15.1	7.4	16.5	21.6
Relvariance in premiums for family coverage										
1993	7.4	5.3	10.9	12.5	6.9	4.1	4.0	5.3	4.4	11.3
1997	7.5	^a	12.8	13.3	9.6	12.0	8.2	4.2	7.4	13.3
Percentage of firms with premium change of more 10%, 1996 to 1997										
	15.3	^a	11.4	17.7	28.2	8.9	14.6	18.2	8.6	13.2

Source: National Employer Health Insurance Survey, 1997 Robert Wood Johnson Foundation Employer Health Insurance Survey, and Institute for Health Policy Solutions database of small group reform provisions.

^a Fewer than 50 observations.