

How Did Health Care Reform in Massachusetts Impact Insurance Premiums?[†]

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In April 2006, the state of Massachusetts enacted a fundamental health care reform to greatly expand insurance coverage and address problems in a broken nongroup insurance market. This reform then formed the basis for national health care reform in 2010 through the Affordable Care Act (ACA). Given the Massachusetts reform law's role as a model for national reform, there is enormous interest in using the experience of Massachusetts to project the effects of the ACA on insurance coverage and medical utilization (Long and Stockley 2010; Long and Masi 2009; Kolstad and Kowalski 2010; Miller 2011).

One particular point of interest is how reform will impact private health-insurance premiums. These impacts can be separated into the dominant employer-sponsored insurance (ESI) market and the much smaller nongroup insurance market. The latter is the target of the major reforms in both Massachusetts and in the ACA, with a move to community rating, the introduction of insurance exchanges, and large subsidies to participants. On the other hand, the former is foremost in the mind of voters, as changes in employer-sponsored insurance premiums would impact a broad swath of individuals who are typically quite satisfied with their insurance coverage. In this study we assess the impact of Massachusetts reforms on both types of premiums.

I. Background: How Might Reform Impact Premiums?

Reforms of the type implemented in Massachusetts are directly designed to impact nongroup premiums and might have residual effects as well on group premiums. In terms of nongroup premiums, there are five major effects:

- (i) minimum standards imposed on the nongroup market (such as a maximum out of pocket limit or a minimum actuarial value) that can raise costs for those buying less generous insurance today;
- (ii) insurance market reforms such as modified community rating, guaranteed issue/renewability, and a ban on preexisting-conditions exclusions that will lower prices for older/sicker potential enrollees and raise prices for younger/healthier potential enrollees, raising average prices through adverse selection;
- (iii) income-related tax credits that offset the cost of nongroup insurance, which could temper adverse selection by reducing after-credit variation in insurance price;
- (iv) an individual mandate that will force some younger/healthier individuals to enroll in the nongroup market, offsetting adverse selection further;
- (v) a new insurance exchange that can facilitate comparison shopping across plans and thereby further lower premiums through competition.

In terms of ESI premiums, there are more modest expected effects: new minimum insurance standards that raise premiums, new insurance exchanges for small firms that may lower

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them, and a mandate that brings into ESI those who were offered but did not enroll in employer plans. These employees are likely to be the healthiest (who valued insurance the least), which should lower ESI premiums. Similarly, an additional ACA provision allowing adults up to 26 years old to enroll under a parent's ESI plan has attracted upwards of 2.5 million young people to ESI, which could put downward pressure on premiums (Department of Health and Human Services 2011). In the long run, the highest-cost ESI plans will also become more expensive due to the "Cadillac tax" designed to offset the tax subsidy to high-cost plans.

Finally, there are overall system changes that might impact all private insurance premiums. With fewer uninsured, uncompensated care costs will go down; to the extent that these costs are shifted to private payers by hospitals, this will lower premiums. At the same time, the ACA is partially financed by reduced Medicare reimbursement; cost shifting by hospitals in this case will raise premiums. The ACA also includes new taxes on both the medical sector and insurance, which could lead to somewhat higher premiums. Potentially most important of all, the ACA includes a variety of measures designed to control health care spending in the longer run, such as the Cadillac tax and reformed provider reimbursement; these effects will not show up in the initial years of the legislation, but could lead to lower premiums over the first decade.

There are a few important differences between the Massachusetts reform and the ACA that will limit the applicability of findings from Massachusetts to the national law. First, Massachusetts had already introduced insurance market reforms in 1996, which partially accounted for the state having the highest nongroup premiums in the country before reform. Second, Massachusetts financed its care for the uninsured by an assessment on providers that remained in place even after reform, so there were not premium savings from reduced cost shifting. At the same time, Massachusetts did not impose new taxes on the medical sector or cut other health spending to finance its reforms, so that there were not premium increases caused by financing. On net, the experience of Massachusetts will clearly overstate the impact of the ACA on nongroup premiums, while it is unclear whether changes in Massachusetts understate or overstate the impact of the ACA on ESI premiums.

Based in part on these considerations, the Congressional Budget Office (CBO) issued its opinion of the effect of the ACA on premiums in late 2009; their analysis was based on an early version of the legislation but one that was similar in most respects. They projected that nongroup premiums would rise under reform, but mostly because individuals would purchase more generous nongroup insurance; holding insurance generosity constant, premiums would fall by 14–20 percent. They projected essentially no change in ESI premiums in the near term as a result of reform.

II. Evidence from Massachusetts

We are aware of only one previous study of the impact of Massachusetts health care reform on insurance premiums: a study by Cogan, Hubbard, and Kessler (2010) that focuses on ESI premiums. In that study, the authors use the only consistent state-level time series on ESI premiums, data from the Medical Expenditure Panel Study Insurance Component (MEPS-IC). The MEPS-IC surveys roughly 40,000 establishments each year and gathers information on premiums, yielding a large enough sample to allow for state-specific premium estimates. Using these data, Cogan et al. argue that premiums grew more rapidly in Massachusetts between 2006 and 2008 than the nation as a whole. Gruber (2011) argues that the results in Cogan et al. are not meaningful given the underlying noise in the MEPS-IC data. In this section we extend and formalize those earlier results.

We begin by replicating the original Cogan et al. findings using more recent data and incorporating standard errors to evaluate whether there is statistical evidence of changes in ESI premiums after the Massachusetts reform. Like Cogan et al., our ESI premium data were drawn from the MEPS-IC. The standard errors that serve as the basis for our uncertainty estimates were calculated using the online MEPSNet query tool.

Since MEPSNet only reports average premiums and standard errors for each state in each year, uncertainty estimates for other quantities are calculated using a simulation exercise (e.g., Tanner 1996). Specifically, for a given average premium μ_{pst} for plan type p in state s and in year t , we simulate 100,000 draws from the sampling distribution of $\hat{\mu}_{pst}$, which, according to the

TABLE 1—PERCENTAGE GROWTH IN ESI PREMIUMS, 2002–2010

	2006–2008 (1)	2006–2010 (2)	2002–2006 (3)	Difference (2)–(3)
Family plans				
Massachusetts	12.20 (2.94)	18.90 (3.51)	40.00 (2.73)	–21.10 (5.37)
United States	8.06 (0.78)	21.90 (0.74)	34.40 (1.04)	–12.50 (1.38)
Difference	4.14 (3.04)	–3.00 (3.67)	5.60 (2.83)	–8.60 (5.55)
Single plans				
Massachusetts	8.77 (3.94)	21.70 (3.55)	32.70 (2.96)	–11.00 (5.86)
United States	6.52 (0.75)	20.00 (0.91)	29.10 (1.14)	–9.10 (1.81)
Difference	2.25 (4.01)	1.70 (3.73)	3.60 (3.10)	–1.90 (6.13)

Note: Estimated standard errors in parentheses.

Source: 2002–2010 Medical Expenditure Panel Survey—Insurance Component.

central limit theorem, is normally distributed with mean μ_{pst} and variance σ_{pst}^2 . For each state-year estimate, we randomly draw 100,000 values using a normal distribution centered $\hat{\mu}_{pst}$ and with standard deviation $\hat{\sigma}_{pst}$. We then use these simulated values to estimate other quantities of interest (e.g., percentage growth rates over time or differences in growth rates between states) separately for each draw. The point estimates in Table 1 are derived from the mean value of the 100,000 simulations, while standard errors are estimated using the standard deviation of the estimates. This exercise yields uncertainty estimates that are nearly identical to what we would observe if we had unrestricted access to the MEPS-IC data.¹

The first column of Table 1 replicates the basic Cogan et al. results for single and family plans. They show that over this period single-group premiums rose by 8.7 percent in Massachusetts,

but by only 6.5 percent nationally, for a 2.3 percent excess growth rate in Massachusetts; for families, premiums grew by 12.2 percent in Massachusetts but by only 8.1 percent nationally, for a 4.1 percent excess growth rate.

Table 1 also augments these findings with standard error estimates from the simulation exercise. We find that in fact neither of these “excess growth” rates is at all distinguishable from zero. That is, there is no statistical evidence that Massachusetts had differential premium growth over this period. We then extend the results, in the second column, through the most recent available data for 2010. Doing so, we find similar excess growth for single plans, but we now find that family plans premiums actually fell in Massachusetts relative to national trends. But the key point is that, once again, the effects are not statistically distinguishable from zero.

In the third column, we consider the role of preexisting trends by adding data from 2002–2006. We find that over this earlier period, Massachusetts group premiums were growing faster than the national average for both single and family premiums—although, once again, not statistically so. Combining these last two sets of estimates, we can measure the relative shift in premium growth after reform (2006–2010)

¹ The MEPSNet query tool does allow for significance testing for changes across time. For example, the joint standard error for the difference in single ESI premiums in Massachusetts between 2006 (\$4,448; standard error = \$88.7) and 2008 (\$4,836, standard error = \$146.9) is 171.63. By contrast, by simulating 100,000 draws from the sampling distributions and taking differences, we estimate a joint standard error of 170.9, a difference of –0.4 percent.

TABLE 2—PERCENTAGE GROWTH IN NONGROUP PREMIUMS, 2006–2009

	2006-2009 (1)
Family plans	
Massachusetts	-39.80
United States	12.50
Difference	-52.30
Single plans	
Massachusetts	-21.30
United States	14.00
Difference	-35.30

Source: Association for Health Insurance Plans.

compared to preexisting trends (2002–2006): both estimates show much slower relative growth in Massachusetts than in the nation as a whole. That is, after reform, premiums grew between 1.8 percent slower (for singles) and 8.7 percent slower (for families) than before reform. Once again, neither of these estimates is statistically distinguishable from 0, although the negative estimate for family premiums approaches the 10 percent significance level.

In summary, Table 1 shows that Massachusetts group premiums may have risen or fallen due to reform, depending on the empirical approach. But the overwhelming conclusion is that none of these changes are significant. The bottom line is that reform had no statistically measurable impact on group premiums.

Contrast that with the impacts on nongroup premiums, shown in Table 2. The data on nongroup premiums come from state-level averages collected by the Association for Health Insurance Plans (AHIP) for the years 2006 (before reform) and 2009 (after). Unfortunately, these data do not come with standard errors so we are unable to assess whether the growth estimates are statistically meaningful relative to a null hypothesis of no change. But the estimates show enormous reductions in Massachusetts over this period relative to the national average.

An alternative way to assess the meaningless change in group premiums and the meaningful change in nongroup is to compare premium growth in Massachusetts to the “empirical null” distribution of changes in nonreform states over the same period. That is, we might ask whether observed changes in Massachusetts were atypical

relative to what other states experienced. The plots in Figure 1 provide such a comparison. Each panel graphs the distribution of percentage changes in ESI premiums for a given plan type between 2006 and 2010. The solid vertical lines denote the value for Massachusetts, while the dotted lines mark the US average.

Figure 1 shows that premium growth in Massachusetts was by no means an outlier relative to changes observed in other states. For example, the value for Massachusetts family plans is in the center of the distribution and is only three percentage points below the US average. Similarly, the value for single plans is 1.8 percentage points above the US average. In each case, the difference is much less than a standard deviation (values at ± 1 standard deviation are indicated by the shaded region).

By comparison, we find that when we consider growth in nongroup premiums, Massachusetts was a clear outlier relative to the rest of the United States. In Figure 2 we plot the distribution of percentage changes in nongroup premiums between 2006 and 2008. In contrast to ESI premiums (Figure 1), the values for single and family plans in Massachusetts are in the far left tail of the distribution. In other words, relative to other states, nongroup premiums grew at much lower rates in Massachusetts after reform. In fact, the value for single plans in Massachusetts (−40 percent) is 2.2 standard deviations below the US average, and for family plans (−21 percent) it is 1.2 standard deviations below. And unlike the group premium results, the results for nongroup are substantially lower than for other states—no other state had single nongroup premium growth fall by more than in Massachusetts, and only one state (North Carolina) did so for family plans.

Of course, as noted above, we are unable to observe standard errors for nongroup premiums, so we cannot say definitively that the change over time is statistically different than zero. And another limitation is that the experience of other states, and in particular the United States as a whole, as in Tables 1 and 2, may not be representative of the counterfactual case of what Massachusetts would have experienced in the absence of reform. Nevertheless, we show here that there is no evidence to support the conclusion that premiums rose as a response to the Massachusetts reform. For ESI premiums, there was no consistent change in

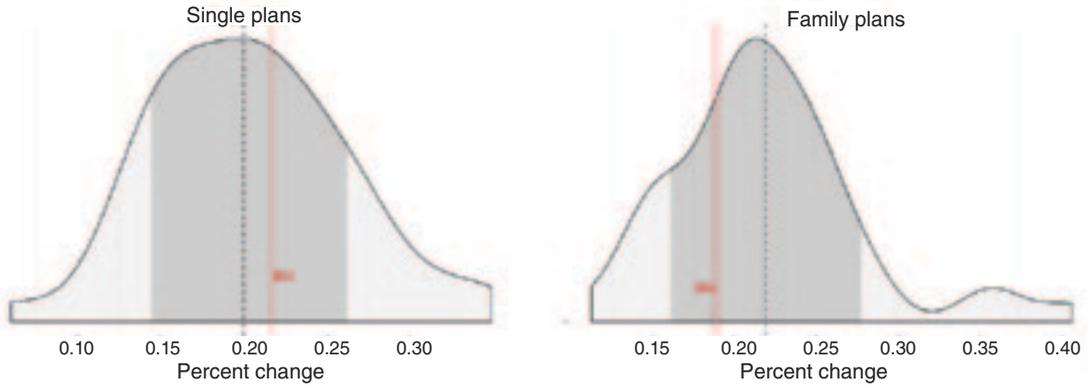


FIGURE 1. DISTRIBUTION OF STATE CHANGES IN ESI PREMIUMS, 2006–2010, SINGLE AND FAMILY PLANS

Note: ± 1 standard deviation shown in shaded region.

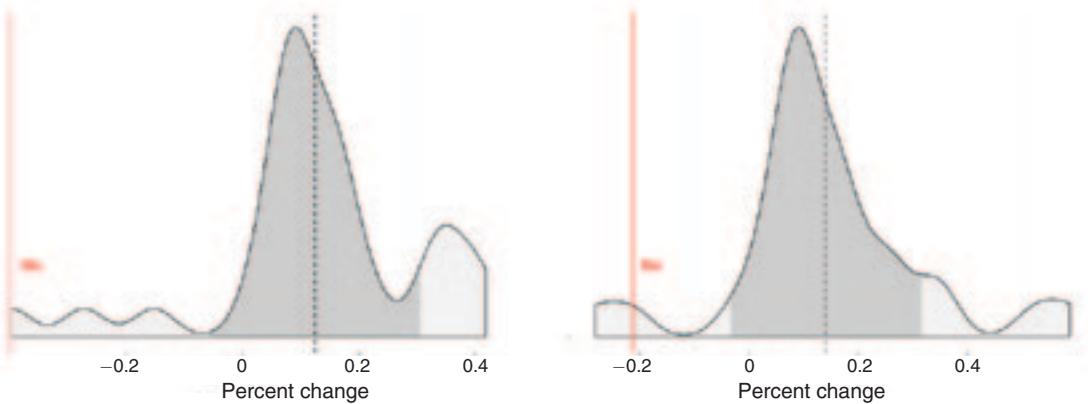


FIGURE 2. DISTRIBUTION OF STATE CHANGES IN NONGROUP PREMIUMS, 2006–2009, SINGLE AND FAMILY PLANS

Note: ± 1 standard deviation shown in shaded region.

premiums, and for nongroup premiums, there was a clear reduction.

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