Does Health Insurance Coverage Fall when Nonprofit Insurers Become For-Profits?

Ethan M.J. Lieber*
University of Notre Dame

May 16, 2017

Abstract

In exchange for tax exemptions, Blue Cross and Blue Shield (BCBS) health insurers were expected to provide health insurance to the "bad risks," those for whom coverage was unavailable from other insurers. I present evidence that five years after a BCBS plan converted to for-profit status, the probability of having insurance was 1.4 percentage points higher, a 9% reduction in the uninsured. The increase in coverage does not mask reductions among populations often targeted by public policies. However, there is evidence of increased risk selection which suggests that the bad risks might have been worse off after a conversion.

Keywords: Nonprofit; Health Insurance; Conversion; Risk Selection
JEL Codes: L33, H25, I13, I18, L50
Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

*This work has benefited greatly from helpful comments and suggestions by Kasey Buckles, Dan Hungerman, the referees, and the editor. Any errors are my own. Lieber: 915 Flanner Hall, University of Notre Dame, Notre Dame, Indiana 46556.

1 Introduction

Health insurance coverage has been shown to increase consumers' health care use (Manning et al., 1987; Card et al., 2007; Finkelstein et al., 2012), to protect against the financial risks associated with sickness (Engelhardt and Gruber, 2011; Gross and Notowidigdo, 2011), and to increase the adoption of medical technologies (Finkelstein, 2007; Freedman et al., 2015) among other important effects. In addition, it has been the focus of many major public policies in recent years such as the Affordable Care Act (ACA), the Medicare Modernization Act, and Medicaid expansions for children and parents. Generally, these policies have been aimed at increasing health insurance coverage and have been shown to have had some success (e.g. Currie and Gruber, 1996; Antwi et al., 2013).

The private market for health insurance is one of the few markets in which nonprofit and for-profit firms compete with each other while neither has a dominant market share. In 2013, approximately 30% of the market was controlled by nonprofits.[1] Blue Cross and Blue Shield (BCBS) plans, which account for nearly 29% of the market today, have traditionally been the primary nonprofit health insurers. In the 1930s and 1940s as health insurance markets were forming, states passed laws that let BCBS plans operate as nonprofits; in exchange for tax breaks and exemptions from some insurance regulations, BCBS plans were to act as the insurers of last resort. They were supposed to provide coverage to the bad risks, those for whom coverage was unavailable at reasonable rates from other health insurers (Eilers, 1962). This role is still important today. In August of 2014, the California Franchise Tax Board stripped Blue Shield of California's state tax exemptions because the insurer had failed to offer affordable coverage or other public benefits (Terhune, 2015).[2]

For more than forty years, BCBS plans operated as nonprofits. But in the 1990s and 2000s, BCBS plans in 16 states converted to for-profit status. Models of nonprofit behavior

[1] Author's calculation based on insurers' data submitted to the Centers for Medicare and Medicaid Services as part of the Medical Loss Ratio reporting requirements. Only fully insured plans were included in this calculation.

[2] BCBS plans lost their federal tax-exempt status on January 1, 1987, but many plans retain their exemptions from state taxes.

suggest that when a firm values the quantity of output, it will tend to produce more than a similar firm that is maximizing only profits (Lakdawalla and Philipson, 2006). In the case of health insurers, this suggests a nonprofit firm will fill the role of insurer of last resort or offer coverage at lower rates than for-profit insurers. Opponents of the conversions were concerned that if BCBS plans were to become for-profits, consumers seen as bad risks would no longer be able to obtain coverage. On the other hand, proponents of conversion argued that it would help BCBS plans raise capital to invest in new technologies, merge with other plans across state lines to spread risk, and take other actions that would lower costs and enable plans to provide coverage to more consumers (Schaeffer, 1996).

In this paper, I estimate the impact of BCBS conversions on health insurance coverage. I implement a difference-in-differences regression approach that compares health insurance coverage between states with and states without BCBS conversions, before and after those conversions. To capture the long run impacts, I allow for changes in both the level and the trend of coverage after a conversion. The identifying assumption is that absent the conversion, the states that had a conversion would have continued on the same trend relative to the states that did not experience a conversion. This is a slight variant of the usual assumption because I am identifying breaks in trends.

I find that, if anything, conversions to for-profit status actually increased the probability of being insured. The estimates suggest that five years after conversion, the fraction insured in the private market was 2.4 percentage points higher than it would have been absent the conversion. If these were all newly insured consumers, this would be a 16% reduction in the uninsured rate and translate to an extra 1.7 million people with health insurance in the 16 states that converted.[3] Moreover, subgroups of the population that have lower insurance coverage rates, e.g. those with lower incomes, minorities, and young adults, tend to have the largest increases in coverage following a conversion.

Sensitivity analysis shows that the results are not simply capturing the impact of mergers,

[3]In 1990, just under 15% of the non-elderly were uninsured (authors' calculation from Current Population Survey data).

changes in Medicaid eligibility or community rating laws, or other unobservable trends. However, there is still a concern that the conversion to for-profit status was not causing the market level changes, but instead reflecting some other process that led to both the conversion and the increase in insurance coverage—firms chose to convert and may have done so because of anticipated changes in the market that would lead to increased coverage rates. To address this concern, I take advantage of 9 states in which BCBS plans attempted to convert but were not allowed to do so. The reasons that conversion bids were rejected (or accepted) do not appear to be related to underlying trends in insurance coverage. For example, two common reasons that conversions were rejected were disagreements over how much of the nonprofit's assets were to be transferred to another public benefit organization and objections to the bonuses that BCBS executives would reap from the conversion. If plans chose to convert in states that would experience an increase in coverage for other reasons, then states with failed conversions should experience the same increase in coverage rates as states with successful conversions. I do not find evidence that states with failed conversions had similar increases in coverage. The estimated impact of a failed conversion is both economically and statistically insignificant.

If the increase in private coverage coincides with a similarly sized reduction in other sources of insurance, then the overall rate of health coverage could be unchanged. To address the issue of crowd-out or substitution across other markets, I estimate how a BCBS conversion affects the probability of having any health insurance coverage. Five years after a conversion, insurance coverage is estimated to be 1.4 percentage points higher than it would have been without the conversion. These estimates suggest that the uninsured rate fell by 9% and approximately 1 million consumers gained coverage when the 16 BCBS plans converted to for-profit status.

The estimated increase in coverage after a conversion does not imply that nonprofit BCBS plans had been avoiding the bad risks before their conversions. After a conversion, BCBS plans could have maintained or reduced coverage of the bad risks while increasing coverage for

the less risky by altering their prices, the set of plans offered, denying coverage to particular individuals, or through some other mechanism.[4] I provide evidence on this in two ways. First, I show that the increases in coverage only occurred among consumers who did not have disabilities and who were in good health: Although coverage increased overall, it only did so for those who were relatively good risks. Second, I estimate the impacts of conversions separately for markets with community rating and for markets without community rating. Because it is more difficult for insurers to select particular risks in community rated markets, the impacts of conversions should be smaller in these markets than in non-community rated markets if the BCBS plans are increasing their risk selection. The results indicate that the increases in coverage are coming entirely from markets without community rating. Thus despite the increase in overall coverage rates, the evidence is consistent with BCBS plans having insured higher risk individuals on average before their conversions than they did once they became for-profits.

There is an extensive empirical literature on differences between nonprofit and for-profit hospitals (e.g. Norton and Staiger, 1994; Picone et al., 2002; Silverman and Skinner, 2004)[5], but there is surprisingly little evidence for the health insurance industry. Town et al. (2004) do not find any evidence in the HMO market that premiums, profits, or consumers' care use changes when an HMO switches from nonprofit to for-profit status. Using the Anthem BCBS and Wellpoint BCBS conversions to for-profit status, Conover et al. (2005) and Dafny and Ramanarayanan (2012) do not find strong evidence that insurance coverage changed in response to the conversions.

This paper complements and contributes to this nascent literature in three ways. First, previous works' empirical strategies estimate immediate, level changes in coverage, but this paper's study design allows for identification of medium and longer run changes as well. As seen in Cutler and Reber (1998) and Clemens (2015), changes in risk selection or the

[4] I explore the impact of a conversion on premiums and cost-sharing features of insurance contracts. However, the data used in this analysis are quite limited and consequently, the results are merely suggestive.

[5] Sloan (2000) reviews the empirical evidence for hospitals and concludes that nonprofit and for-profit hospitals behave quite similarly.

composition of the risk pool play out over multiple years. Given that it took three years for an adverse selection death spiral to unravel a single plan (Cutler and Reber, 1998), short run impacts of a conversion are likely quite a bit smaller than the medium and long run impacts that incorporate equilibrium responses by all firms. I find that allowing for these longer run effects is important to uncovering the full impacts of the conversions on health insurance coverage. Second, whereas previous work has largely focused on an overall average effect, this paper also examines impacts on specific subgroups of consumers that have been of independent interest for policymakers. And third, I provide suggestive evidence that nonprofit BCBS plans had been providing coverage to higher risk individuals than they did after a conversion. It is possible then that obtaining coverage in the private market became increasingly difficult for high risk individuals because of the spread of conversions. Although this difficulty has been greatly ameliorated by the Affordable Care Act's community-rating provisions, efforts to repeal the ACA could once again make it challenging for high risk consumers to obtain coverage.

The rest of this paper is organized as follows. Section 2 presents information about BCBS plans and their conversions. Section 3 briefly describes the data before presenting graphical evidence on changes in insurance coverage rates. In Section 4, I present the empirical strategy and estimated impacts of conversions on health insurance coverage. Section 4.1 presents the impacts of conversions on specific population groups as well as impacts on different types of coverage. Section 5 presents the impacts separately for states with community rating laws and those without. Section 6 discusses the results and concludes.

2 Blue Cross and Blue Shield Plans

Health insurance was all but nonexistent in the United States until the late 1920s and early 1930s. At that time, hospital care was thought of as a social service. In a given year, 30% of patients hospitalized for acute conditions received care for free while another 20%

had reduced rates based upon their ability to pay; 70% of hospital beds were in government hospitals and 25% more were in non-profit hospitals (Rorem, 1939). In this context, hospitals created "hospital service plans" which would soon become "Blue Cross" plans. A typical plan included 21 days of hospital care for a monthly premium between $0.50 and $2.00 (Leland, 1933b). These plans were attractive to hospitals because the steady stream of income they generated helped offset the financial stress caused by the Great Depression (Leland, 1933a).

In February, 1933, the American Hospital Association established a set of principles that were to characterize such plans including (1) an emphasis on public welfare and (2) non-profit organization (Norby, 1939). However, at least 28 state departments of insurance viewed hospital prepayment plans as insurance (Leland, 1933a). As a result, these plans could only be issued by stock or mutual insurance companies which met capital stock, reserve, and assessment requirements. To circumvent these regulations, states passed "enabling acts." New York's was the first and it served as a template. Enabling acts allowed hospital service plans to organize as nonprofits and be exempt from federal income taxation so long as they met the requirements for an "organization for social welfare" as laid out in Section 101(8) of the Revenue Act of 1936 (Rorem, 1939).[6] At the same time, analogous enabling acts were passed that allowed a corporation to guarantee medical or surgical services in exchange for a monthly premium. Again, the corporation offering the service plan was not an insurer, but "a charitable and benevolent institution" (Burns, 1939). These medical care plans soon became known as "Blue Shield" plans. In practice, meeting the requirements of promoting social welfare or being a charitable and benevolent institution meant offering coverage to those who would not otherwise be able to pay their hospital and medical bills. Although this might appear to be an easily avoidable obligation, "several Blue Cross and Blue Shield executives have said they would prefer to be treated as insurance companies for regulatory purposes because of what they consider to be impossible expectations and

[6]Section 101(8) of the Revenue Act of 1936 reads, "Civic leagues or organizations not organized for profit but operated exclusively for the promotion of social welfare, or local associations of employees, the membership of which is limited to the employees of a designated person or persons in a particular municipality, and the net earnings of which are devoted exclusively to charitable, educational, or recreational purposes."

stringent regulatory treatment" (Eilers, 1962).

It was not until the 1990s that Blue Cross and Blue Shield plans began converting from nonprofit to for-profit status.[7] As seen in the first two columns of Table 1, 16 states had a BCBS plan successfully convert to for-profit status. The conversions began in 1991 with the midwestern states Iowa and South Dakota, but occurred throughout the United States from California to New Hampshire. Aside from freeing the plans from being the insurers of last resort, becoming a for-profit made it easier for the plan to raise capital and merge with other, out-of-state plans. Expanding geographically enables a BCBS plan to take advantage of economies of scale, serve multistate employers, diversify risk across markets, and compete with other insurers that were actively consolidating (Grossman and Strunk, 2001).

To attempt to become a for-profit, a BCBS plan submits a conversion plan to its state's Insurance Commissioner or analogous body with regulatory power. As seen in the third and fourth columns of Table 1, there were eight states that made unsuccessful conversion bids. One of the main hurdles to conversion is disagreement over the value of the nonprofit's assets and what should be done with them. Because of plans' nonprofit status, regulators have often treated plans' assets as public property that must be transferred to another public benefit entity. For example, when Blue Cross of California converted, it gave all $3.2 billion of its assets to create the California Endowment and the California HealthCare Foundation. Disagreement over what to do with the plan's assets played a key role in the rejection of conversions in North Carolina, Washington, and Alaska. Conversion plans have also been rejected because of large bonuses that would be paid to BCBS officials: In the CareFirst conversion proposal–including BCBS plans in Delaware, Washington D.C., and Maryland–executives would have received $120 million in payments. With these reasons for rejection, it is unlikely that the decision to accept or reject a conversion is related to trends in

[7] I denote a plan as converting to for-profit status if it successfully converts or if it transfers the majority of its assets to a for-profit subsidiary. The results are not sensitive to not including the latter type of conversion. I do not treat conversion from non-profit to mutual companies as conversions to for-profit status because mutual companies are owned by their policy holders. Information in Conover et al. (2005) and Consumers Union (2007) was used to determine when plans converted. If a plan converted in the second half of a year, it was considered to have converted the following year.

Table 1: States with BCBS Plans that Attempted to Convert

Succesful Conversions		Unsuccessful conversions	
(1)	(2)	(3)	(4)
State	Year	State	Year
California	1996	Alaska	2007
Colorado	2002	Delaware	2004
Connecticut	2002	District of Columbia	2004
Georgia	1998	Kansas	2004
Iowa	1991	Maryland	2004
Indiana	2002	New Jersey	2005
Kentucky	2002	North Carolina	2004
Maine	2002	Washington	2007
Missouri	2001		
Nevada	2002		
New Hampshire	2002		
New York	2003		
Ohio	2002		
South Dakota	1991		
Virginia	1996		
Wisconsin	2001		

Dates are either the date the conversion was finalized (successful conversions) or the date the conversion was rejected by the state regulatory agency (unsuccessful conversions).

premiums, medical spending, or health care coverage. This will motivate some specifications that restrict the sample to states that attempted to convert.

From a theoretical perspective, it is not clear what will happen to coverage rates when a BCBS plan converts and increases the amount of risk selection in which it engages. There are at least three dimensions on which their behavior could change and affect coverage rates: insurance premiums (prices), contract features, and simple denial of coverage. Coverage could fall if, ceteris paribus, premiums for the (observably) bad risks rise, other features of the insurance contracts are altered to make the policies less appealing to people with high expected medical costs, or those considered bad risks are simply denied coverage.[8] On the

[8]Along these lines, Finkelstein and Poterba (2004) showed that there was adverse selection on various aspects of annuity contracts. For example, they found that those who are likely to live longer selected into annuities that provided a greater share of payments in later years. If firms know this, they can tailor their set of contracts to attract certain risk types. Evidence for this type of screening has been found in Medicare Part D plans (Carey, 2017) and plans on the Affordable Care Act's health insurance exchanges (Geruso et al., 2016).

other hand, conversion and increased risk selection could lead to greater levels of coverage. If a BCBS insurer were to reduce its exposure to the bad risks, it could reduce premiums. That should in turn induce some good risks on the margin of purchasing insurance to enter the market and gain coverage. Lowered premiums, or an increase their policies' attractiveness more generally, could engender competition which would likely amplify the increases in coverage. If these types of effects are large enough, they could more than outweigh any direct reductions in coverage for the bad risks and cause overall coverage levels to rise. As such, it is an empirical question whether health insurance coverage rates will increase or decrease after the conversion of BCBS plans to for-profit status.

3 Data

The data used in this article are drawn from the March Supplements to the Current Population Survey (CPS) as distributed by IPUMS (Flood et al., 2015). Data files from 1988 through 2009 are used; years 2010 and later are excluded because the Affordable Care Act has had direct impacts on health insurance markets (e.g. Antwi et al., 2013; Dickstein et al., 2015; Cicala et al., 2017). Because the CPS asks about coverage in the past year, the sample contains information on insurance choices from 1987-2008. The sample is also limited to 22-64 year olds. This avoids near universal coverage of those 65 or older by Medicare as well as the large changes to public programs that provide health insurance to children during the sample period.[9]

I focus initially on private health insurance coverage, rather than any health coverage, because a BCBS conversion will affect Medicaid or other public insurance rates primarily through general equilibrium effects. I primarily use the Census Bureau's recoded health insurance variables, though the main analyses have been run using State Health Access Data Assistance Center (SHADAC) health insurance variables and the results are extremely

[9]Some individuals younger than 65 qualify for Medicare coverage (e.g. because of a disability). I exclude consumers younger than 65 who report having Medicare coverage from the analysis.

similar. The latter measures are meant to account for the various changes to the health insurance questions asked in the CPS over time.[10] To ease exposition, I will often omit the qualifier "private" from private health insurance coverage with the understanding that this represents coverage in the private market for health insurance only.

Table 2: Summary Statistics

	(1) Converter	(2) Non-converter	(3) p-value of difference
Health insurance coverage:			
Any coverage	0.86	0.85	0.91
Private	0.78	0.78	0.88
Private, group	0.69	0.69	0.98
Private, non-group	0.09	0.09	0.33
Medicaid	0.05	0.04	0.21
Demographics:			
Household income	62,199	58,538	0.14
Age	39.43	39.70	0.33
Female	0.51	0.51	0.68
White	0.86	0.85	0.78
Married	0.68	0.70	0.14
High school education	0.59	0.61	0.37
College education	0.24	0.22	0.26

Data from 1987-1990, before any conversions. Column (1) is for individuals in states that will have a Blue Cross or Blue Shield plan convert. Column (2) is for individuals in states that will not have a Blue Cross or Blue Shield plan convert. Column (3) displays the p-value on a test of whether the two means are different from each other.

Summary statistics for 1987-1990, before any of the conversions were announced, are presented separately for states that will convert (converters hereafter) and those that will not convert (non-converters hereafter) in Table 2. Between 85% and 86% of this population had had some form of health insurance in the past year. The vast majority, 78%, had coverage

[10]See State Health Access Data Assistance Center (2009) for a listing of changes to the CPS health insurance questions as well SHADAC's adjustments to account for them. For example, in 2000, the CPS added a verification question. If respondents had said they did not have insurance from any of the named sources, they were asked to verify that they were uninsured. These types of changes to the health insurance questions are likely to affect comparisons of coverage across years, but the impact is likely to result in an immediate, once and for all shift up or down. As will be detailed below, the empirical strategy pursued in this paper will primarily make use of changes in trends. Thus, even if year fixed effects do not fully remove the influence of the changes to the CPS health insurance questions, these changes should have minimal impact on my estimates.

through the private market rather than a government source. Generally, private health insurance is obtained through either a group (usually through employment) or individually. As seen in Table 2, most people with private coverage secure it through a group. Just about half of the sample is female, the average age is 40 years old, median income is near \$60,000 per year, approximately 60% of the sample's highest educational attainment is high school, and just under one-quarter of the sample has a college degree. For each variable, the differences across people in states that will convert and states that will not have a conversion are not statistically distinguishable from zero.

To help visualize the data, while accounting for national trends over time and differences across states, I estimate the following equation via OLS:

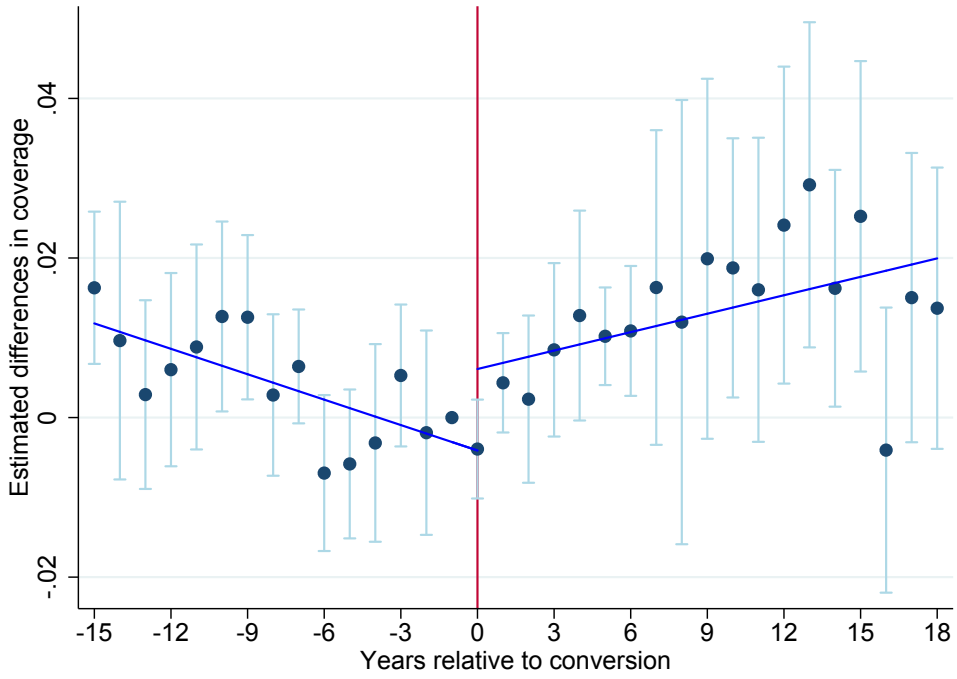
$$insured_{ist} = \sum_{j=-15}^{18} \left(\mathbf{1}\left[j\ years\ from\ conversion_{st}\right] * \mathbf{1}\left[converter_s\right]\right) \alpha_j + X_{ist}\Gamma + \lambda_t + \lambda_s + \varepsilon_{ist}. \tag{1}$$

$insured_{ist}$ indicates whether person i had health insurance in state s in year t, $\mathbf{1}[\cdot]$ is an indicator function, X_{ist} includes categorical variables for education levels, income, gender, race, marital status, age, and family structure, λ_t is a set of year fixed effects, and λ_s is a set of state fixed effects.[11] The α_js, subscripted by years relative to a conversion, trace out the relative probability of being insured in a state that will have a conversion versus a state that will not.[12] For example, α_{-5} reports the difference in private coverage rates between converters and non-converters five years before the states actually convert. If all states had experienced a conversion in the same year, then α_{-5} would simply be the difference between converters and non-converters five calendar years prior to the conversions taking place. However, states that will eventually have a conversion did not all do so in the same

[11]The control variables include dummies for having a high school education, a college education, single years of age, whether the individual is white, married, female, whether she lives alone, lives with one child and no other adults, lives with multiple children and no other adults, lives with other adults and no children, and whether income in real 2000 dollars is between \$25k and \$50k, between \$50k and \$75k, between \$75k and \$100k, or is greater than \$100k.

[12]The α_js are regression-adjusted for state and year fixed effects as well as the covariates previously mentioned. This regression adjustment is implicit in the discussion of the α_js.

Figure 1: Fraction with Private Health Insurance Relative to Conversion



Differences in fraction with private health insurance between converters and non-converters. α_js and 95% confidence intervals reported from equation (1). Controls in regression include indicators for having a high school education, a college education, single years of age, whether the individual is white, married, female, whether she lives alone, lives with one child and no other adults, lives with multiple children and no other adults, lives with other adults and no children, whether income in real 2000 dollars is between \$25k and \$50k, between \$50k and \$75k, between \$75k and \$100k, or is greater than \$100k, state fixed effects, and year fixed effects.

year. As a result, α_{-5} is estimated from data in different calendar years. Intuitively, for each state that converts in year k, we can estimate the difference in coverage rates in year $k-5$ between converters and non-converters. The regression aggregates those differences across k to form an estimate of α_{-5}. The regression estimates each of the α_j in this manner. The year immediately preceding the conversion, α_{-1}, is the omitted category. The point estimates and 95% confidence intervals are presented in Figure 1.

Relative to states that do not have a conversion, consumers in states that do convert were losing health coverage, approximately 1.5 - 2 percentage points in the fifteen years leading up to the announcement of a conversion. However, within a few years after conversion, that downward trend is stopped and even reversed. Ten years after the announcement, converters

had health insurance coverage rise by 2 percentage points.

In the figure and following analysis, I use the date the plan legally converts to for-profit status as the treatment rather than the date the plan announces its bid to convert because not all conversion attempts are successful. Even for plans that successfully convert, there can be significant delays between when the conversion is first announced and when it is completed. California Blue Cross's conversion began in January of 1993, but was not finished until May, 1996; Wisconsin's BCBS plan began the conversion process in June of 1999, but it was not finished until March, 2001. Although the conversion process could take multiple years to complete, industry experts indicate that BCBS plans adopted changes to their business practices before the conversions were finalized (Hall and Conover, 2003).

4 Impacts of Conversions on Health Coverage

Other studies have found that insurers respond to changes over a number of years (Cutler and Reber, 1998; Clemens, 2015) and Figure 1 suggests that the impacts of the conversions were manifested somewhat slowly over time. A standard difference-in-differences specification would not pick up the change in trend seen in Figure 1 because it models the impact of a conversion as an immediate, level shift that goes into effect at the time of the conversion.[13] The empirical specification that follows is able to accommodate the observed change in trend.

To test for an impact of BCBS conversions on health insurance coverage, I estimate

$$insured_{ist} = converted_{st}\beta_1 + post\ trend_{st}\beta_2 + trend_{st}\beta_3 + X_{ist}\Gamma + \lambda_t + \lambda_s + \varepsilon_{ist} \quad (2)$$

where $converted_{st}$ is an indicator for whether or not state s has had a conversion by year t, $post\ trend_{st}$ is the number of years since the state has had a conversion (set to zero in the years before and the year of the conversion), $trend_{st}$ is the difference between the current

[13] This is the case regardless of whether adjustments, e.g. state-specific trends or synthetic control methods, are made to account for the differential pretrend.

year and the year the state will have a conversion, and X_{ist}, λ_t, and λ_s are as described previously. Both *post trend*$_{st}$ and *trend*$_{st}$ are set to zero for states that do not ever experience a conversion. This specification is very similar to equation (1), but improves the precision of the estimates by imposing a linear functional form on the relative differences (α_js) between converters and non-converters.[14] Although this might seem restrictive, the majority of the year-by-year differences in Figure 1 are well-described by a line (the clear exception being α_{16}). In addition, this equation is more flexible than a standard difference-in-differences model which is a special case of the approach taken here.[15] Standard errors are clustered at the state level.

The impacts of the conversion are given by the combination of β_1 and β_2. β_1 captures any immediate jump in the level of coverage for converters relative to non-converters that is associated with a conversion. β_2 picks up any changes in the difference in trends between converters and non-converters that are associated with the conversion. Graphically, β_2 is estimated by comparing the trend of the α_js with $j < 0$ (negative in Figure 1) to the trend of the α_js with $j \geq 0$ (positive in the figure). I report the estimated impact of conversion five years after the conversion takes place; this is calculated as $\beta_1 + 5 * \beta_2$.[16]

With a standard difference-in-differences regression, the identifying assumption is that the trends over time for the treated and untreated groups would have been the same absent the intervention. Because β_2 is identified off of a break in trend, I require that the difference in trends across states would have remained constant. Thus, the downward trend before conversion in Figure 1 does not imply the results are biased or spurious. The identifying

[14] To prevent the handful of states that converted very early or very late in the sample from having disproportionately large impacts on the results, I censor *post trend*$_{st}$ at 10 and *trend*$_{st}$ at -10 and 10. In Appendix A, I show that the choice of censoring date has minimal impact on the results.

[15] The estimating equation collapses down to a standard difference-in-differences specification when $\beta_2 = \beta_3 = 0$. Letting $\mathbf{1}$ be the indicator function, note that the variables in equation (2) can be written as $converted_{st} = \mathbf{1}(state\ will\ convert_s) * \mathbf{1}(post\ conversion_{st})$, $trend_{st} = \mathbf{1}(state\ will\ convert_s) * years\ relative\ to\ conversion_{st}$, $post\ trend_{st} = \mathbf{1}(state\ will\ convert_s) * (years\ relative\ to\ conversion_{st}) * \mathbf{1}(post\ conversion_{st})$.

[16] Appendix B shows estimated impacts over alternative time horizons. Standard errors for the estimated five-year impacts are based on the clustered standard errors from the regression and are calculated via the delta method.

assumption requires only that the downward trend would have continued in the absence of a conversion. This identifying assumption has been used in a number of empirical applications in health economics such as Finkelstein (2007) and Jayachandran et al. (2010).

Table 3: Private Health Insurance and Blue Cross Blue Shield Conversions

	(1) Minimal Controls	(2) Main Controls	(3) Mergers	(4) Community Rating	(5) Medicaid Eligibility	(6) Only Men
5-year impact	0.025**	0.024***	0.023***	0.021***	0.020***	0.023***
	(0.011)	(0.007)	(0.008)	(0.006)	(0.006)	(0.007)
Coefficients:						
converted	0.006	0.009	0.010	0.008	0.007	0.010*
	(0.009)	(0.006)	(0.006)	(0.005)	(0.005)	(0.005)
post trend	0.004***	0.003***	0.003***	0.003**	0.003**	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
trend	-0.002	-0.001**	-0.001	-0.001**	-0.001**	-0.001*
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)
Mean	0.751	0.751	0.751	0.751	0.751	0.746
R-squared	0.02	0.25	0.25	0.25	0.25	0.25
Observations	2,024,041	2,024,041	2,024,041	2,024,041	2,024,041	971,103

Dependent variable indicator for having private market health insurance coverage. Column (1) only includes state and year fixed effects as controls. Column (2) includes the main set of controls: indicators for having a high school education, a college education, single years of age, whether the individual is white, married, female, whether she lives alone, lives with one child and no other adults, lives with multiple children and no other adults, lives with other adults and no children, whether income in real 2000 dollars is between $25k and $50k, between $50k and $75k, between $75k and $100k, or is greater than $100k, state fixed effects, and year fixed effects. Column (3) adds controls for whether the converting firm merged with another insurer in the years surrounding the conversion. Column (4) includes controls for whether the state had community rating in place. Column (5) controls for Medicaid eligibility rules in the state and year by including the income threshold for a family of three to be eligible. Column (6) restricts the sample to men. Standard errors clustered by state. * p<0.10, ** p<0.05, *** p<0.01

Column (1) of Table 3 presents results from estimating equation (2) without the demographic controls X_{ist}. If anything, health insurance coverage appears to have risen after the BCBS plan converted to for-profit status. When the main demographic controls are included in the regression, the estimated impacts of the conversion are almost unchanged. Column (2) shows that five years after conversion, coverage rates were 2.4 percentage points higher than they had been. This estimate is highly statistically significant and allows me to reject that health coverage fell following conversion. With just under 15% of this population uninsured

betwen 1987 and 1990, the estimated increase in coverage would be a 16% reduction in the uninsurance rate.[17] Another way to get a sense of the magnitude is to estimate how many additional people would have had health insurance in converting states five years after the conversions. By the end of the sample, almost 41 percent of the 166 million 22-64 year olds were in a state with a conversion. If interpreted causally and assuming no crowd-out, the estimated impact five years after conversion suggests that an additional 1.7 million people in those sixteen states would have had health coverage.

In a number of cases, BCBS plans that would eventually convert were merging with or being acquired by other BCBS plans. It could be that the estimated impact of conversion is actually reflecting changes due to the merger and not the conversion itself. To explore this possibility, I create variables analogous to $converted_{st}$, $post\ trend_{st}$, and $trend_{st}$ but for a merger involving a BCBS plan in the state. These variables are added to the regression specification and the results are reported in column (3) of Table 3. The estimated impact of conversion is nearly unchanged. This suggests that the results were not simply being driven by mergers.

Between the late 1980s and 2000s, there were large, state-level changes to insurance markets that could be related to conversions and so confounding the results. First, states passed community rating laws that restricted health insurers' abilities to price discriminate in the small group and individual insurance markets.[18] To assess whether the estimated impact of a BCBS conversion is being biased by the community rating laws, I add indicators to the regression for whether the state has a community rating law in effect in the small group or individual market in that year. As seen in column (4), the estimated impact of a

[17]This calculation assumes that the estimated increase in coverage is not crowding out other forms of insurance. This possibility is explored below.

[18]There is a long literature in economics on the impacts of community rating laws (Buchmeuller and DiNardo, 2002; Monheit and Schone, 2004; Simon, 2005; LoSasso and Lurie, 2009). I code Kentucky, Maine, Massachusetts, New Hampshire, New Jersey, New York, Vermont, and Washington as having community rating regimes in the individual market; I code those same states and Colorado, Connecticut, Maryland, and North Carolina as having community rating in the small group markets. See Clemens (2015) for a recent discussion of community rating laws and the years in which these laws were in effect. I do not code Oregon as having had community rating because it did not have strict guaranteed issue and thus insurers had much more leeway to deny coverage to individuals based upon pre-existing conditions.

BCBS conversion remains large and statistically significant.

A second important change in this time period was the expansion of Medicaid for adults with children, pregnant women, and children. To test whether these changes are driving my results, I create a variable that contains the dollar threshold (in year 2000 dollars) that determines parents' eligibility for Medicaid.[19] Both the community rating laws and Medicaid eligibility thresholds are included as covariates in all remaining analyses unless indicated otherwise. The estimated impact of conversion remains near a 2 percentage point increase. This suggests that changes to Medicaid programs were not themselves causing the estimated impact of BCBS conversions.

Because the Medicaid expansions focused primarily on pregnant women and children, a rough way to rule out changes to Medicaid as an omitted confounder is to restrict the sample to men.[20] As seen in column (6), restricting the sample to men does not substantively change the estimated impact of a BCBS conversion. This again suggests that changes to Medicaid are not causing a spurious correlation between BCBS conversions and health insurance coverage in the private market.

Although the downward trends observed in Figure 1 would not lead to a spurious positive impact of BCBS conversions, BCBS plans might have chosen to convert based on changes they anticipated happening within the next few years. If those anticipated changes would have lead to increases in coverage rates, then the estimated increases could be spurious correlations instead of causal effects. To address this concern, I use the 9 BCBS plans whose conversions were rejected to determine whether conversion had an impact or was simply proxying for anticipated changes in coverage rates. If it is just correlation, then we would expect the states with failed conversions to exhibit similar changes in coverage to states with successful conversions.

[19]This threshold is not for the expansions of children's coverage studied in Currie and Gruber (1996) and others. Because my sample is all adults, I use the thresholds that determine their eligibility for Medicaid. I combine the measure constructed in Hamersma and Kim (2013) with information from the National Governors' Association MCH Updates on Medicaid state coverage to create this threshold variable.

[20]The Medicaid threshold variable has been omitted from this regression, though its inclusion does not qualitatively impact the results.

Table 4: Private Health Insurance and Blue Cross Blue Shield Conversions, Sensitivity

	(1) Attempted Conversion States	(2) Failed Conversions	(3) Unweighted	(4) Linear and Quadratic State Trends
5-year impact	0.020***	0.019***	0.015**	0.019**
	(0.005)	(0.006)	(0.007)	(0.007)
5-year impact, failed		-0.003		
		(0.007)		
Mean	0.751	0.751	0.751	0.751
R-squared	0.25	0.25	0.25	0.25
Observations	1,034,863	2,024,041	2,024,067	2,024,041

Dependent variable indicator for having private market health insurance coverage. Controls include indicators for having a high school education, a college education, single years of age, whether the individual is white, married, female, whether she lives alone, lives with one child and no other adults, lives with multiple children and no other adults, lives with other adults and no children, whether income in real 2000 dollars is between $25k and $50k, between $50k and $75k, between $75k and $100k, or is greater than $100k, community rating regulations, Medicaid eligibility thresholds, state fixed effects, and year fixed effects. Column (1) restricts sample to states where a Blue Cross and Blue Shield plan began the conversion process. Column (2) estimates impacts of successful and failed conversions. Column (3) does not use sample weights. Column (4) includes state-specific linear and quadratic time trends. Standard errors clustered by state. * $p<0.10$, ** $p<0.05$, *** $p<0.01$

I take advantage of these failed conversions in two ways. First, I restrict the sample to states that had an attempted conversion. As seen in column (1) of Table 4, this restriction has almost no effect on the estimated impact. The 5-year impact is a 2 percentage point increase in health coverage, nearly identical to the estimate obtained by using the entire sample. Second, I use the full set of states and separately estimate the 5-year impacts of successful and failed conversions. The estimated impacts of the successful conversions (5-year impact) and unsuccessful conversions (5-year impact, failed) are presented in column (2) of Table 4. After separating out the failed conversions, the estimated impact of a conversion is still a statistically significant 1.9 percentage point increase in coverage after five years. However, the failed conversions do not show any economically or statistically significant impact on coverage. This suggests that the estimated impacts for successful conversions are causal impacts and not spurious correlations.

Thus far, I have used sample weights to account for the fact that the CPS is not a simple

random sample. In column (3) of Table 4, I report results in which these weights are not used. Although the estimated impact is slightly smaller in magnitude, it does not suggest that the results are overly sensitive to the use of the sample weights.

Because I am identifying off of changes in trends, the estimated impact could be a spurious correlation if states that converted were on differential quadratic trends from states that did not convert. To test this hypothesis, I add linear and quadratic state trends to the specification and re-estimate the impact of conversion. Column (4) presents these results. Adding in the state trends has almost no impact and thereby rules out the possibility that the results were simply being driven by a violation of the identifying assumption.

There are only twenty-two years and sixteen conversions used to estimate the impacts of conversions. As a result, a particular year or state might be driving the results. Appendix C shows that this is not the case. In particular, I re-estimate the main regression, but omit one year or one state. I do this for every year and every state. Because the sample includes twenty-two years (1988-2009) and fifty-one "states" (including Washington D.C.), this leads to a total of seventy-three separate regressions. Figure C.1 shows that dropping any particular year has almost no effect on the estimated 5-year impacts. Figure C.2 shows that the same is true for the states; although the estimated impact falls slightly when California or New York is omitted, it still remains positive and statistically distinguishable from zero at conventional levels.

And lastly, I have tested whether the length of time between the announcement of a conversion attempt and the date of the successful conversion led to any difference in the estimated changes in coverage. As mentioned previously, anecdotal evidence suggests that insurers began to make changes to their business before their conversions were complete. In that case, we might think that the increases in coverage observed after conversions is larger in states where there was a greater lag between announcement and formal conversion. To test this, I have interacted the conversion variables with the lag in years between announcement and conversion and re-estimated the model. The point estimates suggest small positive effects

of longer lag times, but the estimates were not statistically distinguishable from zero. Taken together, the results in Tables 3 and 4 indicate that BCBS conversions actually increased health insurance coverage.

It is important to note that the external validity of these results is unclear. Because states with attempted conversions were on a different trend from those without, it is unlikely that non-converters would experience the same increase in health coverage if forced to convert. However, the robustness of the results and the similarity of the estimates when the sample is restricted to only those states that attempted to convert suggest a causal impact of conversion for the states with attempted conversions.

4.1 Impacts on Subgroups and Crowd-out

Aggregate categories of insurance might mask changes in coverage to specific groups that tend to have lower insurance rates and are the focus of much of the concern about a lack of insurance coverage (e.g. those with lower incomes). In Table 5, I present estimates for the impact of BCBS conversions for subsets of the population. The first panel presents the results for different income groups. As seen in column (1), five years after a BCBS conversion, health insurance coverage is 2.8 percentage points higher among those in households with incomes below $25,000; column (2) reports that it is 2.6 percentage points higher in households with incomes between $25,000 and $50,000. If anything, it appears that lower income individuals are the most likely to see an increase in their probability of being covered. The estimated impact is not only largest in magnitude among the poor, but it is even larger in percentage terms because these consumers are less likely to be insured.

The next panel in Table 5 reports the impacts broken down by race and by age. The first two columns show that the effects are concentrated in the non-white population and suggest quite large gains in private coverage. The next three columns show that the conversions are having larger impacts on younger individuals. Coverage rose by 2.4 percentage points for those younger than 40, by 2.2 percentage points for those between 40 and 50, and by 1.1

Table 5: Private Health Insurance and Blue Cross Blue Shield Conversions, Subgroups

	(1) Income < $25k	(2) Income in $25k-$50k	(3) Income in $50k-$75k	(4) Income in $75k-$100k	(5) Income at least $100k
5-year impact	0.028*	0.026**	0.012**	0.002	0.016*
	(0.016)	(0.010)	(0.006)	(0.006)	(0.009)
Mean	0.400	0.732	0.855	0.894	0.911
Observations	371,575	573,885	470,985	279,271	328,325
	Not White	White	Age < 40	Age in 40-50	Age ≥ 50
5-year impact	0.047***	0.011*	0.024***	0.022***	0.011*
	(0.010)	(0.006)	(0.006)	(0.008)	(0.006)
Mean	0.633	0.775	0.705	0.795	0.803
Observations	333,698	1,690,343	924,391	549,140	504,238
	Not disabled	Disabled	Excellent or very good health	Good health	Fair or poor health
5-year impact	0.020***	0.007	0.017**	0.022	0.001
	(0.006)	(0.011)	(0.007)	(0.017)	(0.024)
Mean	0.769	0.472	0.798	0.688	0.516
Observations	1,905,337	118,704	902,514	335,749	126,118

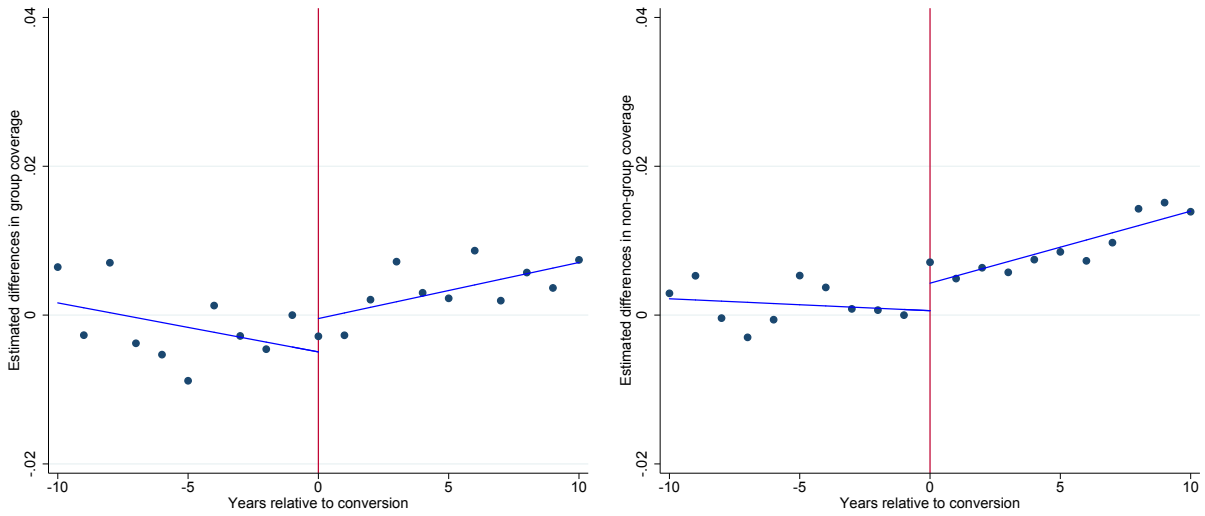
Dependent variable indicator for having private market health insurance coverage. Controls include indicators for having a high school education, a college education, single years of age, whether the individual is white, married, female, whether she lives alone, lives with one child and no other adults, lives with multiple children and no other adults, lives with other adults and no children, whether income in real 2000 dollars is between $25k and $50k, between $50k and $75k, between $75k and $100k, or is greater than $100k, community rating regulations, Medicaid eligibility thresholds, state fixed effects, and year fixed effects. Column headings refer to sample restrictions. Standard errors clustered by state. * p<0.10, ** p<0.05, *** p<0.01

percentage points for those between 50 and 64 after a BCBS conversion.

The final panel of the table presents results for subsets of the population by whether the person has a disability that prevents her from working and by a measure of her self-rated health. The first two columns indicate that the increase in coverage is happening primarily for those who are not disabled. Their coverage rose by 2 percentage points. For those with a disability, there appears to have been very little change in coverage, but the estimate is imprecise. I can only rule out reductions in coverage greater than 1.5 percentage points.

The next three columns suggest that the gains in coverage were concentrated among

Figure 2: Fraction with Group or Non-group Insurance Relative to Conversion



Differences in fraction with specified type of health insurance between converters and non-converters. α_js reported from equation (1). Controls in regression include indicators for having a high school education, a college education, single years of age, whether the individual is white, married, female, whether she lives alone, lives with one child and no other adults, lives with multiple children and no other adults, lives with other adults and no children, whether income in real 2000 dollars is between \$25k and \$50k, between \$50k and \$75k, between \$75k and \$100k, or is greater than \$100k, community rating regulations, medicaid eligibility thresholds, state fixed effects, and year fixed effects.

those who did not rate their health as fair or poor. Coverage rates rose by 1.7 percentage points and 2.2 percentage points for those in excellent or very good health and for those in good health respectively, though only the former is statistically distinguishable from zero. Those in fair or poor health are estimated to have had virtually no change in their coverage, but again, I can not rule out sizable negative effects.

The first two panels of Table 5 show that those who are less likely to have health insurance—those lower on the socio-economic status scale, non-whites, and younger people—are actually gaining insurance coverage when BCBS plans convert to for-profit status. The final panel shows that these gains in coverage are concentrated among those that are less disabled or healthier. This is suggestive that insurers increased their risk-selection to enroll healthier individuals from groups that historically had had low levels of coverage.

If risk selection is changing, then consumers who purchase insurance through the non-

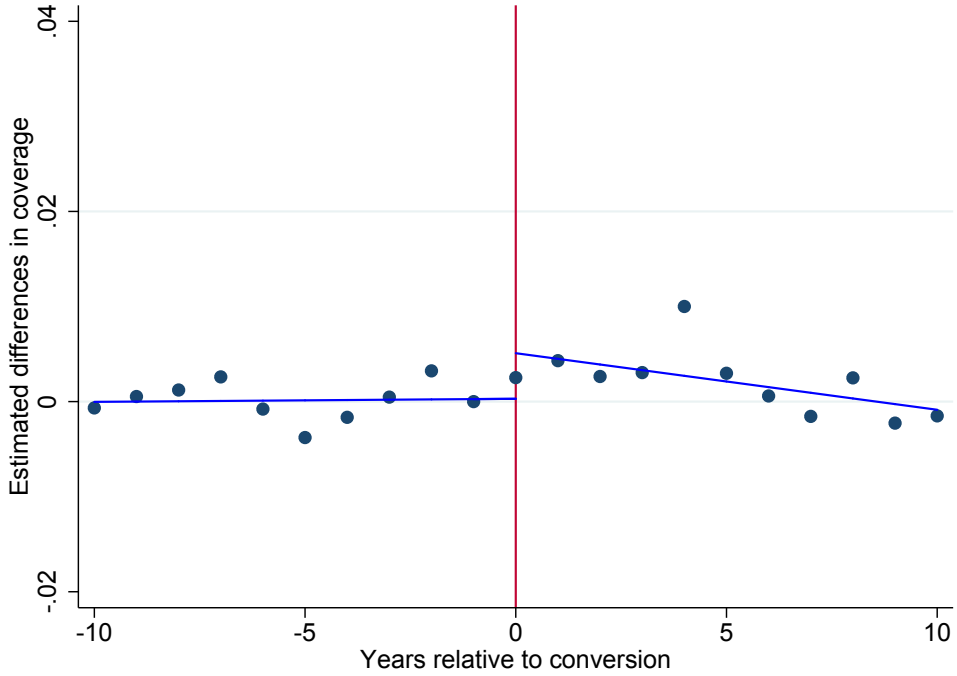
group market could be disproportionately affected because individuals are not pooled together with others when signing up for insurance in this market. To explore this possibility, I estimate the impact of BCBS conversions on the purchase of group health insurance and on non-group coverage separately. The results are represented graphically in Figure 2. This figure presents the estimated coefficients from equation (1) with two modifications. First, the dependent variable is either coverage through the group or non-group markets. Second, the controls for community rating laws and Medicaid eligibility thresholds have been included in the specification. The group market on the left shows the same pattern that was observed for private coverage more generally in Figure 1: Coverage rates appear to be declining slightly prior to conversion but then reverse and increase after the conversion. The non-group market on the right shows a similar pattern, though there does not appear to be a decline in coverage prior to the conversion.

Table 6 presents the corresponding regression results. In column (1), I reproduce the five-year impact of a conversion on having private health insurance coverage for comparison. Columns (2) and (3) show the estimated 5-year impacts for group and non-group coverage respectively. A conversion leads to a statistically significant 1.1 percentage point increase in group coverage rates. For the non-group market, the apparent increase in coverage seen in Figure 2 is reflected in the positive estimated impact, but the standard error is too large to reject the null.

Although private coverage increased after the conversion of BCBS plans, this might not represent increases in overall health insurance rates if individuals switch from some other source of coverage to the private market. In column (4), I present the estimated impact of a conversion on having any health insurance coverage. The estimates indicate that having any health insurance coverage increases by 1.4 percentage points five years after a BCBS plan converts.[21]

[21]There are fewer observations in this column because the indicator for any type of health insurance coverage requires the use of a different weighting variable. This alternative variable assigns a weight of zero to almost 10% of the sample. Using the same weighting variable as the rest of the analysis produces results that are extremely similar to those presented.

Figure 3: Fraction with Medicaid Coverage Relative to Conversion



Differences in fraction with Medicaid between converters and non-converters. α_js reported from equation (1). Controls in regression include indicators for having a high school education, a college education, single years of age, whether the individual is white, married, female, whether she lives alone, lives with one child and no other adults, lives with multiple children and no other adults, lives with other adults and no children, whether income in real 2000 dollars is between \$25k and \$50k, between \$50k and \$75k, between \$75k and \$100k, or is greater than \$100k, community rating regulations, state fixed effects, and year fixed effects.

Table 6: Sources of Coverage and Crowd-Out

	(1) Private Coverage	(2) Group Coverage	(3) Non-group Coverage	(4) Any Coverage	(5) Medicaid
5-year impact	0.020***	0.011**	0.008	0.014**	0.001
	(0.006)	(0.005)	(0.006)	(0.007)	(0.007)
Mean	0.751	0.682	0.068	0.832	0.059
R-squared	0.25	0.24	0.02	0.17	0.14
Observations	2,024,041	2,024,041	2,024,041	1,829,632	2,024,041

Estimated 5-year impacts of BCBS conversion presented. Controls include indicators for having a high school education, a college education, single years of age, whether the individual is white, married, female, whether she lives alone, lives with one child and no other adults, lives with multiple children and no other adults, lives with other adults and no children, whether income in real 2000 dollars is between $25k and $50k, between $50k and $75k, between $75k and $100k, or is greater than $100k, community rating regulations, Medicaid eligibility thresholds, state fixed effects and year fixed effects. Column (1) repeats result from main analysis. Dependent variable in column (2) is having private coverage through group market. In column (3), it is having private coverage through non-group market. In column (4) is is having any health insurance. In column (5), it is being covered through Medicaid. See text for reason that observations lower in column (4). Standard errors clustered by state. * p<0.10, ** p<0.05, *** p<0.01

Medicaid has been shown to interact with the private market for health insurance through crowd-out (Cutler and Gruber, 1996; Card and Shore-Sheppard, 2004; Wagner, 2015) and crowd-in (Clemens, 2015). If BCBS plans stop insuring high-risk individuals, some of them could join Medicaid. In the final column of Table 6, I present results that show the impact of a BCBS conversion on Medicaid coverage rates. Five years after a conversion, the increased probability of having Medicaid is an economically and statistically insignificant 0.13 percentage points. The lack of an impact is confirmed in Figure 3. It graphs the estimates from equation (1) where Medicaid coverage is the dependent variable and the specification has been augmented with the community rating laws and Medicaid eligibility thresholds.[22] It does not appear that consumers were simply switching away from Medicaid to private health insurance plans.

[22]The results are not sensitive to including or excluding the Medicaid eligibility thresholds.

5 Risk Selection After Conversion

In this section, I provide additional evidence on whether BCBS plans that converted to for-profit status were engaging in risk selection. If so, this potentially represents a departure from their roles as insurers of last resort. Specifically, I test whether BCBS conversions in states with community rating had the same impacts as conversions in states without community rating. Because community rating makes it more difficult to select particular classes of risks, conversions in community rating states should have little impact on insurance rates if risk selection is a mechanism through which coverage is rising.

Table 7 shows results where the impact of a conversion is estimated separately for states with community rating and those without community rating. The table is broken into separate sections for the small group market (columns (1) and (2)) and for the individual market (columns (3) and (4)). In the first two columns, the sample is restricted to households with at least one full time employee at a small firm and no full time employees at large firms.[23] Because the vast majority of working aged adults obtain health coverage through employment, this is the relevant set of individuals who could potentially purchase insurance in the small group market. In columns (3) and (4), I restrict the sample to households without a full time employee or to the households included in columns (1) and (2). The latter group is included because a substantial portion of small firms do not offer their employees insurance (almost 40% in 2002 (Stanton and Rutherford, 2004)).

As seen in column (1), among those likely considering insurance from the small group market, coverage rates are 2 percentage points higher in states that had a BCBS plan convert. When the impact of a conversion is allowed to vary by whether the state had community rating in the small group market, we see that the estimated impact is coming entirely from states without community rating. The impact rises to a 3.1 percentage point increase in

[23]States have different cutoffs for what constitutes a small firm (Simon, 2005). The demarcations between a small firm and a large firm range from 25 to 50 full time equivalent employees. In some years, the CPS data use 50 employees as a cutoff for one of the size categories; for others, there is a single category for 26-100 employees. For consistency over time, I count firms as small if they have 25 or fewer full time employees.

Table 7: Differential Impacts of Conversions in Community Rating States

	Small Group Market		Individual Market	
	(1)	(2)	(3)	(4)
	Group Coverage	Group Coverage	Non-group Coverage	Non-group Coverage
5-year impact	0.020*		0.013	
	(0.012)		(0.014)	
5-year impact, no community rating		0.031*		0.009
		(0.016)		(0.016)
5-year impact, community rating		-0.001		0.003
		(0.027)		(0.013)
Mean	0.616	0.453	0.154	0.154
R-squared	0.15	0.15	0.04	0.04
Observations	347,366	347,366	544,268	544,268

Dependent variable indicator for having group health insurance coverage in columns (1) and (2) and for having non-group coverage in columns (3) and (4). In column (2), impact of conversion varies with whether state has community rating in the small group market; in column (4), it varies with whether state has community rating in the non-group market. Sample limited to households with no full time employees at a large firm and at least one full time employee at a small firm in columns (1) and (2); columns (3) and (4) add households with no full time workers. Controls include indicators for having a high school education, a college education, single years of age, whether the individual is white, married, female, whether she lives alone, lives with one child and no other adults, lives with multiple children and no other adults, lives with other adults and no children, whether income in real 2000 dollars is between $25k and $50k, between $50k and $75k, between $75k and $100k, or is greater than $100k, state fixed effects, and year fixed effects. Standard errors clustered by state. * p<0.10, ** p<0.05, *** p<0.01

coverage in states without community rating, but is a statistically and economically insignificant 0.1 percentage point reduction in states with community rating. These results suggest that there was risk selection by BCBS plans after they converted. It is difficult to draw too strong of a conclusion from the estimated impact on states with community rating. While the point estimate itself suggests little loss of coverage for higher risk individuals, I can only rule out losses in coverage of 5.4 percentage points or greater.

Similar analyses are presented for the individual market in columns (3) and (4). Although these estimates are considerably less precise, if the point estimates were true, they would again be consistent with claim that BCBS plans increased risk selection after conversion to for-profit status.

Some of the mechanisms through which risk selection could occur are changes to insurance premiums and cost-sharing features of the health plans. Unfortunately, data on these

objects are only available for a limited number of states or a limited set of years. Appendix D estimates the impacts of conversions on these mechanisms, but it is difficult to draw conclusions from those analyses because of the lack of suitable data and the resulting imprecision of the estimates.

6 Conclusion

It is difficult to overstate the policy relevance and impacts on consumer behavior of health insurance. A top aim of the 2010 Affordable Care Act was to increase the number of Americans with health insurance; a central feature of the 2003 Medicare Modernization Act was aimed at increasing prescription drug coverage for the elderly. Blue Cross and Blue Shield plans are an integral part of the health insurance market, insuring approximately one-third of the market when the conversions were happening. In this paper, I investigate whether Blue Cross and Blue Shield insurance plans' conversions from nonprofit to for-profit status affected health insurance coverage.

I find that instead of lowering coverage as consumer advocates feared, conversion actually increased coverage. The estimates suggest that five years after the conversion, private health insurance rates had risen by 2.4 percentage points and that coverage by any type of insurance had increased by 1.4 percentage points. The latter estimate translates to a 9% reduction in the uninsured rate or an additional 1 million people with health insurance in the states that converted.

I do not find any direct evidence that the overall increases in coverage were masking declines in particular demographic subgroups that have been the focus of policy efforts to expand coverage (e.g. people with lower incomes near the Medicaid thresholds). The impacts of conversions appear to be strongest among those with smaller incomes, those who are not white, and the young, suggesting that the conversion actually helped these groups obtain coverage.

However, I do find evidence that risk selection increased after a conversion. Private health insurance coverage only increased for those without a disability or those in good health. In addition, increases in coverage were confined to markets without community rating. Although I do not find negative estimated effects on coverage for those with disabilities or for those in poor health, I can only reject reductions greater than 1.5 to 4 percentage points. Thus, if there are negative impacts on the higher risk individuals, there might have been a trade-off between insuring them and insuring larger numbers of people; reductions in costs due to dropping coverage for higher-risk individuals could have helped finance the costs of increased risk selection. Generally, I do not find evidence that the gains achieved by those who obtained coverage after a conversion were shared by the high risk consumers as well.

Despite the overall increase in coverage, the welfare implications of these findings are unclear. Those who gained coverage are likely to be better off than before, yet increased risk selection could have led some consumers to lose coverage and so be worse off. In addition, any changes to the existing set of contracts alters the welfare of those who were insured and remained so in an ambiguous way. If premiums fell due to a reduction in the average risk of the pool of insured individuals, then welfare for this group likely increased. On the other hand, if cost-sharing provisions became less generous and premiums did not fall to compensate, then those with insurance were likely worse off. Without having estimates of changes in premiums, cost-sharing features of the insurance contracts, alterations to insurer-provider bargaining power, and a number of other facets of the health insurance market, it is difficult to determine whether the welfare of any particular group increased or decreased. The picture becomes even less clear once the social planner has to weigh the gains and losses experienced by different groups. Thus, overall, the conversion of BCBS plans to for-profit status actually increased health insurance coverage, but it is not at all clear whether this led to welfare gains.

References

Antwi, Y. A., A. S. Moriya, and K. Simon (2013). Effects of federal policy to insure young adults: Evidence from the 2010 affordable care act's dependent-coverage mandate. *American Economic Journal: Economic Policy 5*(4), 1–28.

Buchmeuller, T. and J. DiNardo (2002). Did community rating induce an adverse selection death spiral? evidence from new york, pennsylvania, and connecticut. *The American Economic Review 92*(1), 280–294.

Burns, W. J. (1939). The michigan enabling act for non-profit medical care plans. *Law and Contemporary Problems 6*(4), 559–564.

Card, D., C. Dobkin, and N. Maestas (2007). The impact of nearly universal insurance coverage on health care: Evidence from medicare. *American Economic Review 98*(5), 2242–2258.

Card, D. and L. D. Shore-Sheppard (2004). Using discontinuous eligibility rules to identify the effects of the federal medicaid expansions on low-income children. *Review of Economics and Statistics 86*(3), 752–766.

Carey, C. (2017). Technological change and risk adjustment: Benefit design incentives in medicare part d. *American Economic Journal: Economic Policy 9*(1), 38–73.

Cicala, S., E. M. Lieber, and V. Marone (2017, April). Cost of service regulation in u.s. health care: Minimum medical loss ratios. *NBER Working Paper 23353*.

Clemens, J. (2015). Regulatory redistribution in the market for health insurance. *American Economic Journal: Applied Economics 7*(2), 109–134.

Conover, C. J., M. A. Hall, and J. Ostermann (2005). The impact of blue cross conversions on health spending and the uninsured. *Health Affairs 24*(2), 473–482.

Consumers Union (2007). Blue cross and blue shield: A historical compilation.

Currie, J. and J. Gruber (1996, December). Saving babies: The efficacy and cost of recent changes in medicaid eligibility of pregnant women. *Journal of Political Economy 104*(6), 1263–1296.

Cutler, D. M. and J. Gruber (1996). Does public insurance crowd out private insurance? *The Quarterly Journal of Economics 111*(2), 391–430.

Cutler, D. M. and S. J. Reber (1998). Paying for health insurance: The trade-off between competition and adverse selection. *The Quarterly Journal of Economics 113*(2), 433–466.

Dafny, L. and S. Ramanarayanan (2012). Does it matter if your health insurer is for-profit? effects of ownership on premium, insurance coverage, and medical spending. *NBER Working Paper No. 18286*, 1–53.

Dickstein, M. J., M. Duggan, J. Orsini, and P. Tebaldi (2015). The impact of market size and composition on health insurance ppremium: Evidence from the first year of the aca. *NBER Working Paper No. 20907*.

Eilers, R. D. (1962). The fundamental nature of blue cross and blue shield. *The Journal of Insurance 29*(3), 385–402.

Engelhardt, G. V. and J. Gruber (2011). Medicare part d and the financial protection of the elderly. *American Economic Journal: Economic Policy 3*(4), 77–102.

Finkelstein, A. (2007). The aggregate effects of health insurance: Evidence from the introduction of medicare. *Quarterly Journal of Economics 122*(1), 1–37.

Finkelstein, A. and J. Poterba (2004). Adverse selection in insurance markets: Policyholder evidence from the uk annuity market. *Journal of Political Economy 112*(1), 183–208.

Finkelstein, A., S. Taubman, B. Wright, M. Bernstein, J. Gruber, J. P. Newhouse, H. Allen, K. Baicker, et al. (2012). The oregon health insurance experiment: Evidence from the first year. *The Quarterly Journal of Economics 127*(3), 1057–106.

Flood, S., M. King, S. Ruggles, and J. R. Warren (2015). Integrated public use microdata series, current population survey: Version 4.0. http://doi.org/10.18128/D030.V4.0.

Freedman, S., H. Lin, and K. Simon (2015). Public health insurance expansions and hospital technology adoption. *Journal of Public Economics 121*, 117–131.

Geruso, M., T. J. Layton, and D. Prinz (2016, November). Screening in contract design: Evidence from the aca health insurance exchanges. *NBER Working Paper 22832*.

Gross, T. and M. J. Notowidigdo (2011). Health insurance and the consumer bankruptcy decision: Evidence from expansions of medicaid. *Journal of Public Economics 95*(7), 767–778.

Grossman, J. M. and B. C. Strunk (2001). Blue plans: playing the blues no more. *Understanding Health System Change: Local Markets, National Trends*, 37–60.

Hall, M. A. and C. J. Conover (2003). The impact of blue cross conversions on accessibility, affordability, and the public interest. *Milbank Quarterly 81*(4), 509–542.

Hamersma, S. and M. Kim (2013). Participation and crowd out: Assessing the effects of parental medicaid expansions. *Journal of Health Economics 32*(1), 160–171.

Jayachandran, S., A. Lleras-Muney, and K. V. Smith (2010). Modern medicine and the twentieth century decline in mortality: Evidence on the impact of sulfa drugs. *American Economic Journal: Applied Economics 2*(2), 118–146.

Lakdawalla, D. and T. Philipson (2006). The nonprofit sector and industry performance. *Journal of Public Economics 90*(8), 1681–1698.

Leland, R. G. (1933a). Group hospitalization contracts are insurance contracts. *American Medical Association Bulletin 28*(7), 113–116.

Leland, R. G. (1933b). Prepayment plans for hospital care. *Journal of the American Medical Association 100*(12), 870–873.

LoSasso, A. T. and I. Z. Lurie (2009). Community rating and the market for private non-group health insurance. *Journal of Public Economics 93*(1), 264–279.

Manning, W. G., J. P. Newhouse, N. Duan, E. B. Keeler, and A. Leibowitz (1987, June). Health insurance and the demand for medical care: Evidence from a randomized experiment. *American Economic Review 77*(3), 251–277.

Monheit, A. C. and B. S. Schone (2004). How has small group market reform affected employee health insurance coverage? *Journal of Public Economics 88*(1), 237–254.

Norby, M. J. (1939). Hospital service plans: Their contract pprovision and administrative procedures. *Law and Contemporary Problems 6*(4), 545–558.

Norton, E. C. and D. O. Staiger (1994). How hospital ownership affects access to care for the uninsured. *The RAND Journal of Economics 25*(1), 171–185.

Picone, G., S.-Y. Chou, and F. Sloan (2002). Are for-profit hospital conversions harmful to patients and to medicare? *RAND Journal of Economics 33*(3), 507–523.

Rorem, C. R. (1939). Enabling legislation for non-profit hospital service plans. *Law and Contemporary Problems 6*(4), 528–544.

Schaeffer, L. D. (1996). Health plan conversions: the view from blue cross of california. *Health Affairs 15*(4), 183–187.

Silverman, E. and J. Skinner (2004). Medicare upcoding and hospital ownership. *Journal of Health Economics 23*(2), 369–389.

Simon, K. I. (2005). Adverse selection in health insurance markets? evidence from state small-group health insurance reforms. *Journal of Public Economics 89*(9), 1865–1877.

Sloan, F. A. (2000). Not-for-profit ownership and hospital behavior. *Handbook of Health Economics 1*, 1141–1174.

Stanton, M. W. and M. Rutherford (2004). Employer-sponsored health insurace: trends in cost and access. Technical report, Agency for Healthcare Research and Quality.

State Health Access Data Assistance Center (2009, November). Shadac-enhanced current population survey health insurance coverage estimates: A summary of historical adjustments. University of Minnesota.

Terhune, C. (2015, July). California tax officials blast blue shield in audit. Los Angeles Times.

Town, R., R. Feldman, and D. Wholey (2004). The impact of ownership conversions on hmo performance. *International Journal of Health Care Finance and Economics 4*(4), 327–342.

Wagner, K. L. (2015). Medicaid expansions for the working age disabled: revisiting the crowd-out of private health insurance. *Journal of Health Economics 40*, 69–82.

Appendices

A Sensitivity of Results to Censoring

In the main regression specification, equation (2), the *post* $trend_{st}$ and $trend_{st}$ variables were censored at ten years.[24] Thus, even though some states have observations in the sample that are more than ten years after their conversions, their values for *post* $trend_{st}$ and $trend_{st}$ were set to ten in these cases. Appendix Table A.1 provides results from this main specification which censor the data at different time intervals. The estimated impacts do not vary significantly, ranging from 0.244 (censored at five years) to 0.216 (censored at fourteen years).

Table A.1: Private Health Insurance and Blue Cross Blue Shield Conversions, Sensitivity to Censoring

	(1) Five Years	(2) Six Years	(3) Seven Years	(4) Eight Years	(5) Nine Years
5-year impact	0.0244**	0.0228***	0.0229***	0.0237***	0.0236***
	(0.0096)	(0.0081)	(0.0074)	(0.0071)	(0.0071)
	Ten Years	Eleven Years	Twelve Years	Thirteen Years	Fourteen Years
5-year impact	0.0237***	0.0233***	0.0226***	0.0221***	0.0216***
	(0.0072)	(0.0075)	(0.0076)	(0.0077)	(0.0077)

Dependent variable indicator for having private market health insurance coverage. Columns censor linear trend and treatment variables at the given number of years from the conversion. In specifications in text, variables capped at 10 years from the conversion. Standard errors clustered by state. * p<0.10, ** p<0.05, *** p<0.01

[24] $trend_{st}$ was censored symmetrically so that it never took values below -10. Throughout this appendix, censoring at x years implies censoring on the right at x and at $-x$ on the left.

B Estimated Impacts Over Different Time Horizons

In this appendix, I discuss the impacts of a conversion over different time horizons. In the main text, 5-year impacts were presented. These impacts were estimated as

$$\hat{\beta}_{5-year} = \hat{\beta}_{converted} + 5 * \hat{\beta}_{post\ trend}. \tag{3}$$

Although this constrains the impacts to be linear in the time since the conversion, this specification does not appear to be overly restrictive; the year-by-year, regression-adjusted differences between conversion and non-conversion states grew at a fairly linear rate until fifteen years after the conversion (see Figure 1 from the main text). Calculating the impacts over different time horizons can be done in the same manner except that $\hat{\beta}_{slope}$ should be multiplied by the desired number of years after the conversion has occurred. These estimates are presented below in Appendix Table B.1.

Table B.1: Estimated Impact of Conversion Over Different Time Horizons

	(1) Two Years	(2) Four Years	(3) Six Years	(4) Eight Years	(5) Ten Years
Estimated impact	0.0151	0.0209	0.0268	0.0326	0.0385
	(0.0128)	(0.0158)	(0.0190)	(0.0223)	(0.0257)
Number of states	16	16	15	5	5

Estimated impact of Blue Cross and Blue Shield conversions on private health coverage. Columns provide estimated impacts for varying numbers of years after the conversion. Level and slope effects from primary regression specification were used to estimate impacts over different time horizons. Number of states reports the number of states with conversions at least as many years in the past as specified in the column heading. Standard errors were derived via the delta-method from the regression standard errors which were clustered by state. * p<0.10, ** p<0.05, *** p<0.01

When interpreting the estimates in Appendix Table B.1, some caution should exercised when we move beyond six years after a conversion. Because states experienced conversions in different years and the data span a fixed time period, not all states contribute to the individual estimates in each time period after the conversion. As a result, the estimate is moving closer and closer to an out-of-sample prediction. The row labeled "Number of states"

presents the number of states that had had a conversion at least x years before the end of the sample, where x is the number of years post conversion

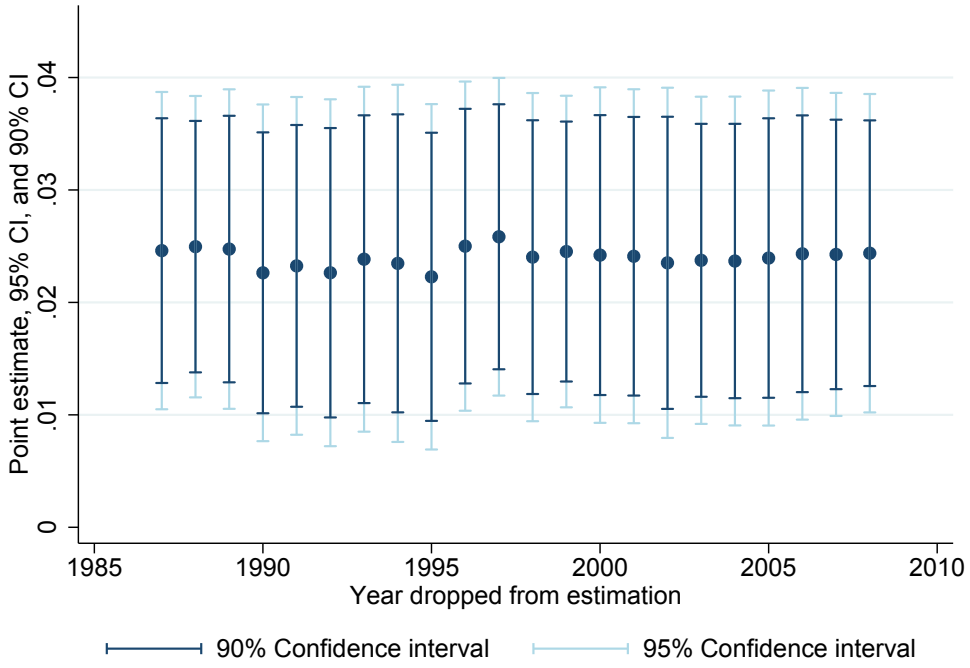
C Omitting Individual Years or States from Analysis

In this appendix, I present results which suggest that the estimated impacts in the main text are not being driven by any particular year or state. The appendix shows results in which the main regression specification has been run on a sample that omits one year or state. This process is repeated for every year and for every state.

Figure C.1 displays the estimated 5-year impacts estimated on a sample of data that excludes one year from the sample. The left-most point and confidence intervals are the result of estimating the main regression specification on a sample that only includes data from 1989 through 2009 CPS years (which includes data on insurance choices from 1988-2008). The estimated impact for that sample is approximately a 2.4 percentage point increase and the 95% confidence interval ranges from just over 0.01 to nearly 0.04.

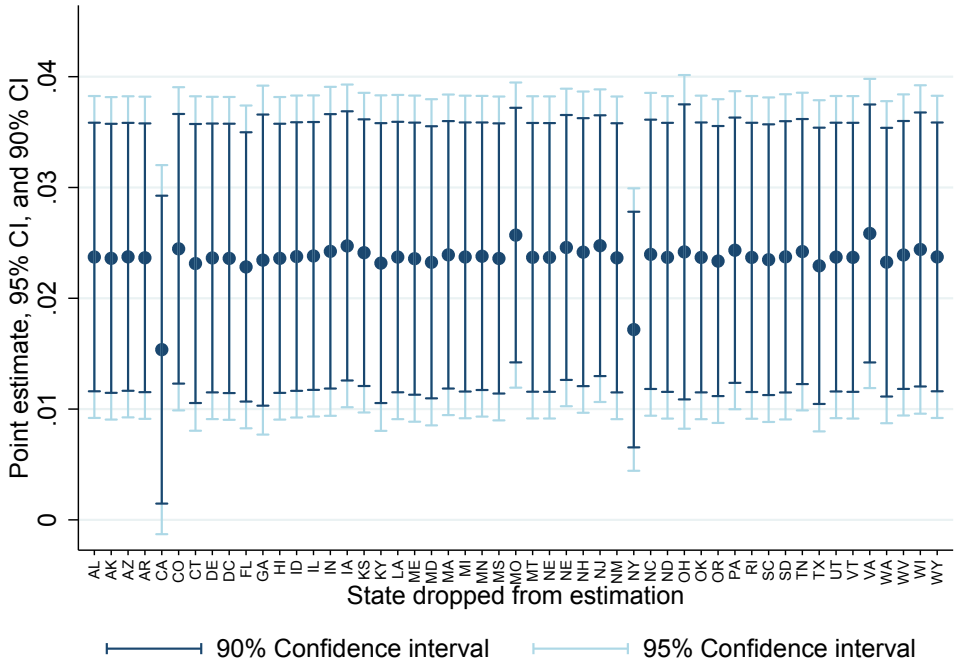
Figure C.2 presents the same information for an analysis in which a state is omitted from the estimation sample. The left-most point and confidence intervals are the result of estimating the main regression specification on a sample that omits any data from the state of Alabama. Each separate point represents the result from omitting a different state; the omitted state is given on the x-axis.

Figure C.1: 5-Year Impacts with Particular Years Omitted from Sample



Estimated 5-year impacts from regressions in which the year specified by the column has been omitted from the sample. Controls in regression include indicators for having a high school education, a college education, single years of age, whether the individual is white, married, female, whether she lives alone, lives with one child and no other adults, lives with multiple children and no other adults, lives with other adults and no children, whether income in real 2000 dollars is between $25k and $50k, between $50k and $75k, between $75k and $100k, or is greater than $100k, state fixed effects, and year fixed effects.

Figure C.2: 5-Year Impacts with Particular States Omitted from Sample



Estimated 5-year impacts from regressions in which the state specified by the column has been omitted from the sample. Controls in regression include indicators for having a high school education, a college education, single years of age, whether the individual is white, married, female, whether she lives alone, lives with one child and no other adults, lives with multiple children and no other adults, lives with other adults and no children, whether income in real 2000 dollars is between $25k and $50k, between $50k and $75k, between $75k and $100k, or is greater than $100k, state fixed effects, and year fixed effects.

D Prices and Cost-Sharing Features of Health Plans

Although there are many dimensions that insurers can manipulate to select particular types of risks, two of the more common dimensions are the insurance premium and the presence of cost-sharing features such as deductibles and coinsurance rates. In this appendix, I test whether these dimensions changed after a BCBS plan in the state converts to for-profit status.

Unfortunately, microdata on premiums and cost-sharing features are not widely available. Instead, I use data on state level averages from the Medical Expenditures Panel Survey's Insurance Component. The measures include insurance premiums for a family plan and a plan for an individual, the average coinsurance rate for an office visit to a physician in plans with positive coinsurance rates, and the fraction of private-sector employees enrolled in plans with deductibles. These data are not available for all states and all years in which the main analyses were conducted (1987-2008). Data on insurance premiums are available from 1996-2006 and 2008 for a limited set of states (between 40 and 43 states from 1996-2002; all states available thereafter). Data on cost-sharing features are only available from 2002-2006 and in 2008. Because of these data limitations, there is significantly less variation available to estimate the impacts of the conversions. As a result, the following analyses should be considered suggestive at best.

Because the premiums and cost-sharing features data are state level averages, I aggregate the CPS microdata to the state-by-year unit of observation and weight regressions by the relevant population figures (based upon the CPS weights). The estimating equation is

$$y_{st} = converted_{st}\beta_1 + post\ trend_{st}\beta_2 + trend_{st}\beta_3 + \overline{X}_{st}\Gamma + \lambda_t + \lambda_s + \varepsilon_{st} \qquad (4)$$

where y_{st} is the outcome of interest, $converted_{st}$ is an indicator for whether or not the state has had a conversion, $post\ trend_{st}$ is the number of years since the state has had a conversion (set to zero in the years before a conversion and the year of the conversion), $trend_{st}$ is the

difference between the current year and the year the state will have a conversion, $\overline{X}_{st}$ are state averages for the individual demographic characteristics discussed in the main text as well as the community rating variables and Medicaid thresholds, λ_t are year fixed effects, and λ_s are state fixed effects. Standard errors are clustered at the state level.

Table D.1 shows the estimated five-year impacts on insurance premiums for a family policy and for an individual policy. For a family policy, the point estimates suggest relatively small impacts that range from a 0.39 percent reduction in premiums to a 0.15 percent increase in premiums. For an individual policy, the point estimates are somewhat more consistent. They suggest that premiums for these policies were approximately 3 percent higher five years after a conversion. Although the point estimates are somewhat larger, the standard errors are still of equal or greater magnitude and do not allow us to reject the null of no effect.

Table D.1: Impacts of Conversions on Health Insurance Contracts

	Ln(Family Premium)			Ln(Individual Premium)		
	(1)	(2)	(3)	(4)	(5)	(6)
	All firms	Small firms	Large firms	All firms	Small firms	Large firms
5-year impact	-0.0039	-0.0001	0.0015	0.0311	0.0370	0.0211
	(0.0380)	(0.0385)	(0.0531)	(0.0373)	(0.0537)	(0.0364)
R-squared	0.99	0.99	0.98	0.99	0.97	0.98
Observations	540	540	540	540	540	540

Dependent variable is natural log of insurance premium for market and firm type specified in column headings. Data aggregated to state by year level. Data available for 1996-2006 and 2008. Standard errors clustered by state. * p<0.10, ** p<0.05, *** p<0.01

Note that for the cost-sharing features, only one conversion (New York) occurs after the first year included in the sample. Thus the level effect of a conversion (β_1) is identified only off of a single observation from New York. Because of this, I calculate the five-year impact of a conversion for the cost-sharing features as $5\beta_2$ instead of the usual $\beta_1 + 5\beta_2$.

The first three columns of Table D.2 suggest that employees were more likely to be in plans with deductibles after a BCBS plan converted. The fraction with a deductible is estimated to have risen by 3.3 percent five years after a conversion. Although this impact is only marginally significant at the 10 percent level, the point estimates are consistent across

Table D.2: Impacts of Conversions on Health Insurance Contracts

	Deductible			Coinsurance		
	(1) All firms	(2) Small firms	(3) Large firms	(4) All firms	(5) Small firms	(6) Large firms
5-year impact	0.0327*	0.0336	0.0319	0.0103	0.0021	0.0139
	(0.0187)	(0.0333)	(0.0215)	(0.0073)	(0.0110)	(0.0083)
Mean	0.605	0.651	0.595	0.183	0.202	0.180
R-squared	0.96	0.96	0.95	0.70	0.57	0.67
Observations	298	298	298	298	298	298

Dependent variable is fraction of plans with a deductible in columns (1)-(3) and average coinsurance rate in columns (4)-(6). Data aggregated to state by year level. Data available for 2002-2006 and 2008. Standard errors clustered by state. * p<0.10, ** p<0.05, *** p<0.01

all firms (column (1)), small firms (column (2)), and large firms (column (3)). There is less evidence that coinsurance rates, the fraction of the bill that the patient has to pay out-of-pocket, increased. The estimated impact in column (4) implies a 1 percent increase in the coinsurance rate five years after a conversion, but it is not statistically distinguishable from zero at conventional levels. Similarly small findings are found for small firms and for large firms in the remaining columns of Table D.2.

If the point estimates are true, they would suggest that cost-sharing rose and if anything, premiums did not change or rose as well. Taken together, these results would indicate that the per-unit price of coverage increased. This is consistent with a change to the set of policies that insurers offer to attempt to differentially attract healthier individuals. However, because of the limited data and imprecise results, it is difficult to conclude much from these estimates.