Polarization, Participation, and Premiums: How Political Behavior Helps Explain Where the ACA Works, and Where It Doesn't

Samuel Trachtman
University of California, Berkeley

Abstract

Context: Political partisanship can influence whether individuals enroll in government programs. In particular, Republicans, ceteris paribus, are less likely to enroll in Affordable Care Act (ACA) individual marketplace insurance than Democrats. The logic of adverse selection suggests low uptake among Republicans would generally put upward pressure on marketplace premiums, especially in geographic areas with more Republican partisans.

Methods: Using data from Healthcare.gov at the rating area level, this article examines the association between Republican vote share and growth in ACA marketplace premiums, being careful to account for potential confounding variables.

Findings: Insurers have increased marketplace premiums at higher rates in areas with more Republican voters. In the preferred model specification, a 10-percentage-point difference in Republican vote share is associated with a 3.2-percentage-point increase in average premium growth for a standard plan. A variety of robustness and placebo checks suggest the relationship is driven by partisanship.

Conclusions: Partisan polarization can threaten the successful implementation of policies that rely on high levels of citizen participation.

Keywords Affordable Care Act, polarization, marketplaces, premiums, political geography

When the Affordable Care Act (ACA) was signed into law in 2010, one prominent designer of the law envisioned that its marketplaces would revolutionize the way Americans procure health insurance (Advisory Board 2014). In practice, ACA individual marketplaces have not lived up to these lofty expectations. As of 2016, marketplaces drew just 10.4

Journal of Health Politics, Policy and Law, Vol. 44, No. 6, December 2019
DOI 10.1215/03616878-7785787

million enrollees, a far cry from the 22 million projected by the Congressional Budget Office (CBO) (Kliff 2016).

Recent work in political science (Lerman, Sadin, and Trachtman 2017) helps to explain some of the gap between expectations and reality. Due to the extremely polarized nature of the law (Smith 2015), Republicans are less likely to enroll in ACA marketplace insurance than Democrats, choosing instead to go uninsured or purchase "off-marketplace" plans. Beyond their effects on coverage rates, these decisions have consequences for the broader affordability of marketplace plans. Due to the logic of adverse selection, lower rates of enrollment would lead to greater health risk among enrollees, and higher premiums (Cutler and Reber 1998). While it is well known that resistance to the ACA by Republican lawmakers and conservative groups have weakened the law (Hertel-Fernandez, Skocpol, and Lynch 2016; Oberlander 2016), the partisanship-motivated uptake behavior of *individuals* might also be an important factor in explaining the marketplaces' woes.

One way to investigate this dynamic is to look at geographic variation in premiums. In particular, premiums would be expected to be higher in areas with more Republican partisans. Figure 1 demonstrates that in 2017, there was a strong positive relationship between county-level Republican voting and individual marketplace premiums, while this relationship was slightly *negative* in 2014. This suggests that insurers systematically underestimated health spending in Republican-leaning areas relative to Democratic-leaning areas, a pattern that could be attributable to the interaction between partisanship-motivated enrollment and adverse selection. There are other reasons one might expect greater premium growth in Republican areas, but in this article I provide evidence using a variety of empirical specifications and robustness checks that a meaningful portion of the variation is attributable to political partisanship.

This finding has important practical and theoretical implications. Practically, millions of people receive their health insurance coverage through ACA marketplaces (KFF 2018). The price of marketplace plans is of clear significance for these individuals. Even if many are insulated from premium growth by federal subsidies, marketplace prices affect the level of those subsidies and so contribute to federal spending. In addition, premium growth on the marketplaces played a significant role in debates during the 2016 election (Rovner 2016), and some recent evidence suggests this growth contributed to the 2016 presidential election outcome (Kogan and Wood 2019).

Results suggest designers of public policy should consider how the rise of negative partisanship—whereby individuals increasingly harbor

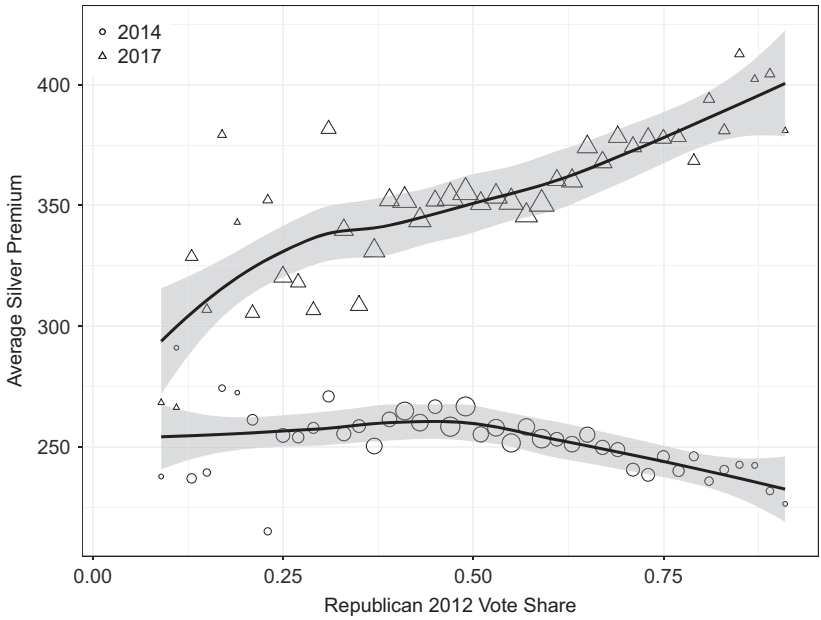


Figure 1 Average ACA individual-market premiums by Republican 2012 vote share. Circles represent the average price in 2014 for a silver-level plan in counties binned in 2% bandwidths by Republican vote share in 2012, while triangles represent the same measure in 2017. The size of the circles and triangles corresponds to the size of the population in the counties falling in each bin.

Source: Healthcare.gov and Dave Leip's Atlas of US Presidential Elections.

negative attitudes toward the opposing party (Abramowitz and Webster 2016; Iyengar and Westwood 2015)—threatens successful policy implementation. In a polarized environment, policies that rely on high levels of active citizen participation may function poorly, especially in geographic areas where they are unpopular.

This work also has theoretical implications for the study of policy feedback. It is well known that policies can influence politics by mobilizing individuals and shifting attitudes at the individual level (Campbell 2002; Mettler 2005; Pierson 1993). But, in a polarized environment, policy opponents may make uptake decisions that reduce their exposure to the policy (Lerman, Sadin, and Trachtman 2017). Moreover, the scope of policy feedback effects may be limited due to a self-fulfilling prophecy dynamic whereby policies perform worse where they lack political support.

Partisanship-Motivated Uptake and Adverse Selection

Under the ACA, individuals who do not receive health insurance coverage from an alternative government program (Medicare, Medicaid, etc.) or from their employer have three options. First, they can opt to refrain from purchasing ACA-compliant insurance.[1] Second, they can purchase an ACA-compliant policy directly from an insurance company or broker, without using a government-established marketplace. Finally, they can purchase insurance plans through one of the federally facilitated (FFM), state-based (SBM), or partnership marketplaces established under the ACA.

Recent scholarship indicates that the uptake decisions that individuals make with respect to the ACA are driven in part by their political partisanship. Using individual-level survey data from Kaiser Health Tracking polls, Lerman, Sadin, and Trachtman (2017) estimate that, ceteris paribus, Republicans are 6 percentage points more likely to forgo coverage than Democrats, 12 percentage points less likely to use the ACA marketplaces, and 7 percentage points more likely than Democrats to purchase plans off-marketplace. Analysis of Cooperative Congressional Election Study (CCES) data yields similar conclusions (Tesler 2015).

Moreover, individual-level differences in enrollment rates aggregate up to geographic differences. Holding other factors constant, Lerman, Sadin, and Trachtman (2017) estimate a 10-point difference in party vote share is associated with a 2-percentage-point increase in the share of the marketplace-eligible population in a given Public Use Microdata Area (PUMA) enrolling as of 2015.

Due to adverse selection, partisanship-motivated uptake has implications for the cost of plans for fellow beneficiaries. In insurance markets, adverse selection refers to the greater demand for insurance among individuals with greater risk of an accident (Rothschild and Stiglitz 1976). Adverse selection has been shown to influence individuals' choices of health insurance, with less healthy individuals tending to choose more generous health insurance policies (Cutler and Reber 1998). Before the ACA, medical underwriting reduced the role of adverse selection in the health insurance marketplace, as insurers estimated the risk of individual enrollees and tailored premiums accordingly. With underwriting eliminated, the ACA sought to reduce adverse selection by using tax penalties, the so-called *individual mandate*, to push individuals across the health spectrum to enroll. However, with the uninsured rate remaining at around 11% of the nonelderly population (Auter

1. In 2017, the penalty for noninsurance was the higher of 2.5% of household income or $695 per adult and $347.50 per child. The penalty has been eliminated as of 2019.

2017), there was likely still a large degree of adverse selection (Antos and Capretta 2016), even before the elimination of the individual mandate.[2]

The relationship between enrollment and health spending in a guaranteed issue environment that allows for adverse selection is well understood by actuaries. As the American Academy of Actuaries' (AAA 2016) issue brief on 2017 marketplace premiums states: "Higher individual market participation rates will tend to be associated with lower average costs, and lower participation rates with higher average costs. This is because those previously uninsured individuals with greater health care needs are more likely to enroll and to enroll sooner than those with lesser needs." Therefore, Republican under-enrollment would generally put upward pressure on premiums. But, this logic also suggests differential enrollee health by partisanship.

Consider a group of individuals composed of Democrats and Republicans, each with some underlying "risk," or propensity to use health care. Each individual has a threshold of risk at which they would prefer to buy insurance than go uninsured. The research on partisanship-motivated uptake suggests that the threshold of risk required to induce enrollment is higher, on average, for Republicans than for Democrats. If the threshold of risk required to induce enrollment is higher for Republicans, then we can expect the average Republican enrollee—all else equal—to have greater health risk (poorer health) than the average Democratic enrollee.

This logic is demonstrated in figure 2 below. The figure plots average probability of enrollment by projected health cost for a hypothetical pool of Democrats and Republicans. Due to adverse selection, probability of enrollment is increasing in projected health costs for both groups. Probability of enrollment asymptotes to one as health risk rises for both groups. However, due to partisan uptake, healthy Republicans (those with lower projected health cost) are more likely to forgo coverage than healthy Democrats. As a result, more of the mass of Republican enrollment is skewed to the less healthy. Therefore, holding other factors constant, the average projected health cost among Republican enrollees would be expected to be higher than the averaged projected health cost among Democratic enrollees.

2. When they do enroll in ACA-compliant insurance, a substantial portion of Republicans remain outside of the pool of ACA marketplace enrollees by purchasing insurance plans directly from insurers ("off-marketplace") (Lerman, Sadin, and Trachtman 2017). This dynamic would be expected to enhance the disparity in health of Democratic-identified and Republican-identified marketplace enrollees since off-marketplace enrollees are not eligible for subsidies and tend to be higher income (Levitt et al. 2016), which is associated with health status (Woolf et al. 2015).

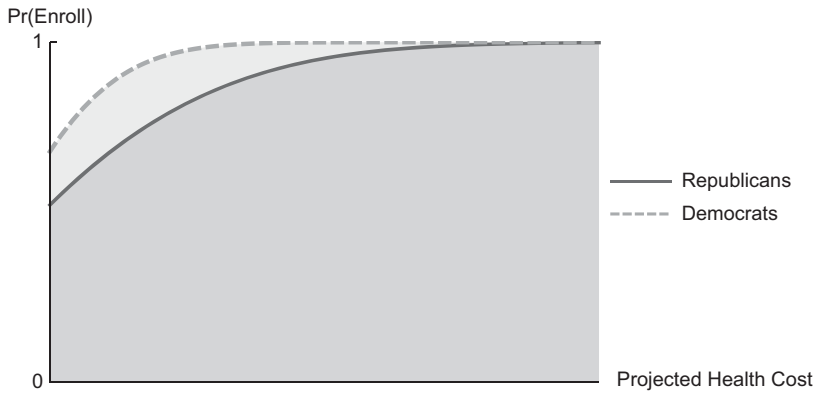


Figure 2 Theoretical model.

With geographic areas increasingly politically homogeneous (Cho, Gimpel, and Hui 2013), ceteris paribus, differential enrollment by partisanship would lead to systematic differences in average health of enrollees between Democratic- and Republican-voting areas. Since insurers must set premiums in the long run that cover the costs of their enrollees, this dynamic would lead to higher premiums in Republican-voting regions.[3] It is unlikely insurers anticipated the effects of partisanship-motivated enrollment in setting 2014 (first year of marketplaces) premiums, so I hypothesize that, holding other factors constant, premiums have increased at a higher rate in Republican-leaning regions relative to Democratic-leaning regions.

Matching ACA Marketplace and Voting Data

Testing the proposed hypothesis requires merging ACA marketplace data to political data. For marketplace data, I use the marketplace plan information publicly available for the 33 states that used Healthcare.gov to manage ACA marketplaces from 2014 to 2017. While more recent marketplace data is now available, Trump administration policies like nonpayment of cost-sharing subsidies brought about a large amount of upheaval in the marketplaces, and a large amount of noise in the data. Moreover,

3. While the ACA includes mechanisms to compensate insurers for high-risk enrollees, the empirical analysis will demonstrate an increase in the association between partisanship and premiums the year that two of the three supply-side programs (reinsurance and risk corridors) that protect insurers from downward risk associated with unhealthy enrollees expired (Blumenthal 2014). Moreover, risk adjustment, the remaining program, has been shown to inadequately compensate insurers for enrolling unhealthy individuals (CMS 2016).

changes from 2014 to 2017 are relevant for considering the role of marketplace dynamics in 2016 elections.[4] For each plan, public use files detail the specific counties and rating areas in which the plan is offered, in addition to a number of plan attributes.[5]

I use 2012 Republican presidential vote share as a proxy for partisanship.[6] While the previous findings on partisanship-motivated enrollment used party identification, I would expect 2012 vote share to adequately measure the broader political affiliation with the ACA that drives the mechanisms hypothesized. Summary statistics for the variables in the main analysis can be found in appendix A.

Votes and ACA Marketplace Premium Growth

I now turn to testing the key empirical implication of the proposed theory: that Republican vote share is associated with greater premium growth on the ACA individual marketplaces between 2014 and 2017. The dependent variable is average cost growth of silver-level plans at the rating area level, calculated as the population-weighted average premium across all silver-level plans sold in a rating area.[7] I focus on silver-level plans since these are by a large margin the most popular plans for consumers.[8]

The treatment of interest is Republican 2012 vote share at the *rating area* level. The treatment is at the rating area level since insurers are required to price plans at the same rate within a rating area, so would consider the health spending of potential enrollees in a rating area in setting premiums.[9]

I estimate the treatment effect using a series of linear regression models with varying specifications. Estimates are presented in the top row of table 1. Column (1) displays a large bivariate association between Republican voting and premium growth. The coefficient in the first row of 0.70 indicates that a 10-point difference in Republican voting is associated with a 7-percentage-point increase in premium growth from 2014 to

4. General results hold using 2018 as opposed to 2017 data.

5. Rating areas are defined by the ACA as geographic areas within which insurers cannot vary premiums for particular plans outside of the established age and smoking bands. Most states constructed rating areas as collections of counties, while some used the MSA+1 template recommended by the Centers for Medicare and Medicaid Services (CMS), and some others used collections of zip codes. See https://www.cms.gov/cciio/programs-and-initiatives/health-insurance-market-reforms/state-gra.html for more details.

6. I exclude Alaska due to lack of county-level voting data.

7. Weights are determined by the populations of the counties (in rating areas) in which plans are available.

8. Seventy percent of enrollees chose silver-level plans as of 2016.

9. Republican vote share is aggregated up from the county-level, which introduces some measurement error for states that did not use county-based rating area formulations. The measurement error would be expected to bias estimates toward zero.

Table 1 Republican Vote Share and ACA Individual Marketplace Premium Growth

	OLS			WLS	
	1	2	3	4	5
Republican 2012 vote share	0.7***	0.28***	0.32***	0.24***	0.3***
	(–0.11)	(–0.07)	(–0.12)	(–0.08)	(–0.1)
Average silver deductible growth		–0.49**	0.58***	0.04	–0.18
		(–0.23)	(–0.22)	(–0.22)	(–0.24)
Number of carriers		0.03***	–0.02**	0.04***	–0.02**
		(–0.01)	(–0.01)	(–0.01)	(–0.01)
Hospital price index			0.01		0.05
			(–0.03)		(–0.03)
Medicare cost index			–0.09		–0.13
			(–0.09)		(–0.1)
Percent obese			0.47		0.23
			(–0.28)		(–0.29)
Health score (Blue Cross Blue Shield)			1.78*		0.97
			(–0.95)		(–0.84)
Opioid prescription rate			0.02		0.05
			(–0.03)		(–0.03)
Median income			0.17*		0.13
			(–0.09)		(–0.08)
Percent uninsured (pre-ACA)			0.21		0
			(–0.35)		(–0.34)
Population (logged)			–0.02**		–0.01
			(–0.01)		(–0.01)
Unemployment rate			0.42		0.78***
			(–0.57)		(–0.32)
State fixed effects		Y	Y	Y	Y
Rural-urban fixed effects			Y		Y
Age brackets			Y		Y
Education controls			Y		Y
Race controls			Y		Y
Observations	391	391	391	391	391
R-squared	0.07	0.87	0.89	0.94	0.95

Note: *p < 0.1 **p < 0.05 ***p < 0.01. Unit of analysis is the rating area. Column 1 displays bivariate association between Republican 2012 vote share and premium growth from 2014 to 2017 on ACA individual marketplaces. Columns 2 and 3 present covariate-adjusted model specifications. Columns 4 and 5 present specifications with CBPS weights for continuous matching. Robust standard errors are used.

Sources: Healthcare.gov, Kaiser Family Foundation, US Census Bureau, County Health Rankings, US Department of Agriculture, Blue Cross Blue Shield, Dave Leip's Atlas of US Presidential Elections.

2017. For context, average rating area level premium growth over the period was 38.3%. Of course, there are a number of reasons to expect greater premium growth in areas with more Republican voters. The remaining columns in the table 1 present covariate-adjusted and matched estimates to account for a variety of other differences between Democratic- and Republican-voting regions.

Column (2) presents estimates from a model that includes Republican 2012 vote share, growth in the average silver-level plan deductible from 2014 to 2017, the number of carriers offering plans in a rating area in 2014, and state fixed effects. State fixed effects account for any differences in state policy, like Medicaid expansion (Sen and DeLeire 2016), that influence ACA marketplaces. Adjusting for deductible growth accounts for differential changes to plan benefits over time. Adjusting for 2014 insurer participation accounts for differential initial levels of insurer competition, which would be expected to lead to variation in premium growth (Dafny, Gruber, and Ody 2015). Including state fixed effects and basic covariate adjustment reduces the estimated magnitude of the relationship between Republican vote share and premium growth from 0.65 to 0.28, but the relationship remains statistically and substantively significant.

The steep drop in estimated treatment effect between column (1) and column (2) is mainly explained by state fixed effects. I would expect Republican-voting states to feature greater premium growth due to partisan-motivated enrollment, but also due to policy choices (Sen and DeLeire 2016). Lack of sample size at the state level makes these effects difficult to parse. For this reason, treatment effects within states are generally presented, although these are likely underestimates of true effect sizes since they do not account for across-state variation.

Column (3) presents estimates from a model adjusting for a variety of additional covariates.[10] Perhaps most importantly, I estimate fixed effects for each level on the USDA's rural-urban 9-point continuum.[11] Democrats tend to be clustered in urban areas, while Republicans are more likely to live in rural areas (Gamio 2016). Given the differences in health systems across urban and rural areas (Morrisey et al. 2016), this is an important potential confounder.

I also adjust for a number of variables measuring differences in underlying health costs of populations across rating areas. These are measures

10. Appendix E presents a model adding growth in median income from 2013 to 2016 as a covariate. Robustness to this specification suggests the main results are not driven by higher cost-of-living increases in Republican areas. I do not include median income growth as a covariate in the main analysis due to the problem of post-treatment bias (Montgomery, Nyhan, and Torres 2018).

11. See www.ers.usda.gov/data-products/rural-urban-continuum-codes/ for more details.

pertaining to the broader population, since I would expect based on the proposed theory to find differences for the ACA enrollee population.[12] I include a measure of hospital prices (Dafny, Gruber, and Ody 2015), average Medicare spending from CMS, a measure of health produced by Blue Cross Blue Shield (BCBS n.d.) that is derived from actual health spending, the obesity rate, and the opioid prescription rate. Finally, I adjust for a number of general demographic variables from the census, including unemployment, population, percent uninsured (pre-ACA), income, percentage of the population in various age brackets, percentage of the population of different races, and percentage of the population of various education levels.[13] These variables are measured prior to or concurrent with opening of marketplaces in 2014. As demonstrated in column (3), including the variety of covariates and fixed effects does not influence the estimated relationship between Republican vote share and premium growth, with a 10-point difference in Republican vote share associated with a 3.2-percentage-point difference in premium growth from 2014 to 2017.

One concern with using regression adjustment to account for potential confounding variables is that there may be a nonlinear component to the relationship between confounders and premium growth that is correlated with Republican vote share, which would lead to biased estimates. Matching methods are commonly used to improve covariate balance for treatment effect estimation in the observational setting (Diamond and Sekhon 2013; Rubin 1973). If covariates are balanced across treatment groups, the assumption of linearity between covariates and outcomes is not needed for unbiased estimation.

Since the treatment of interest in this case (Republican 2012 vote share) is continuous, I apply a recently developed method for matching on a continuous treatment—the covariate balancing propensity score (CBPS) (Imai and Ratkovic 2013). In the continuous case, CBPS estimates a predictive association between covariates and treatment variables, and calculates propensity scores for each observation based on that estimated relationship. The algorithm then assigns an inverse propensity score weight to each observation to minimize the association between treatment and covariates. In this case, I use the CBPS algorithm to assign weights to units such that the association between the covariates used in the regression specification presented in column (3) and Republican vote share is minimized.

12. Unfortunately, there are no good data available at the county or rating area level on variation in the health of ACA enrollees.

13. These variables are generally measured at the county level. They are aggregated to the rating area level through a population-weighted average.

I then estimate a weighted regression with only Republican vote share, number of insurers in 2014, average deductible growth, and state fixed effects on the right-hand side. Model coefficients, presented in column (4), show robustness of treatment effect estimates to matching. Finally, column (5) presents estimates from a weighted regression with inverse propensity score weights generated from the CBPS algorithm in addition to the set of covariates in the full model presented in column (3). Results are robust to CBPS matching combined with covariate adjustment.

The validity of matching estimates depends on there being sufficient overlap in covariates. While Democratic- and Republican-voting regions certainly differ systematically, scatterplots presented in appendix B indicate sufficient overlap for matching.

Using SHOP Marketplace as a Placebo

Small Business Health Options Program (SHOP) marketplaces provide an opportunity for placebo analysis. Established alongside individual marketplaces in 2014, SHOP marketplace plans are available to employers with 50 or fewer full-time-equivalent employees. There are two reasons to think that the relationship between partisanship and premium growth observed in the individual marketplace would not be observed in the case of SHOP marketplaces. First, since SHOP enrollment is decided by employers for groups of people, there is less likely to be strong adverse selection—a key component of the proposed model. Second, the businesses making enrollment decisions on SHOP marketplaces might be driven more by economics in their decision-making than individuals, which would reduce the effect of partisanship.

However, to the degree that broader health spending of individual marketplace enrollees is correlated with the health spending of SHOP marketplace enrollees, similar patterns of premium growth would be observed in both marketplaces *but for* the proposed mechanisms. Investigating the relationship between partisanship and premium growth on SHOP marketplaces can therefore help ascertain whether the observed relationship between partisanship and individual marketplace premium growth is attributable to the proposed theory or confounding factors.[14]

The first three columns of table 2 present analogous estimates—for SHOP marketplaces—to those in the first three columns of table 1, with column

14. SHOP marketplace premiums increased over the period, though not as fast as individual marketplace premiums. Average silver-level premiums grew from a monthly rate of $303 in 2014 to a monthly rate of $341 in 2017. As detailed in appendix A, individual-level premiums grew from an average of $262 in 2014 to $353 in 2017.

Table 2 SHOP Placebo Analysis

	SHOP			Individual
	(1)	(2)	(3)	(4)
Republican 2012 vote share	–0.09	–0.06	0.06	0.28***
	(–0.07)	(–0.05)	(–0.1)	(–0.11)
Average silver deductible growth		0.53***	0.49***	–0.5**
		(–0.19)	(–0.19)	(–0.23)
Number of carriers		0.00	0.00	–0.01
		(0.00)	(–0.01)	(–0.01)
Hospital price index			0.05***	0.01
			(–0.02)	(–0.03)
Medicare cost index			0.00	–0.09
			(–0.08)	(–0.09)
Percent obese			0.35	0.38
			(–0.29)	(–0.28)
Health score (Blue Cross Blue Shield)			0.88	1.4
			(–0.77)	(–0.94)
Opioid prescription rate			0.01	0.01
			(–0.03)	(–0.03)
Median income			0.07	0.19**
			(–0.06)	(–0.09)
Percent uninsured (pre-ACA)			0.28	0.16
			(–0.3)	(–0.36)
Population (logged)			0.00	–0.02**
			(–0.01)	(–0.01)
Unemployment rate			0.14	0.62
			(–0.37)	(–0.58)
State fixed effects		Y	Y	Y
Rural-urban fixed effects			Y	Y
Age brackets			Y	Y
Education controls			Y	Y
Race controls			Y	Y
Observations	360	360	360	360
R-squared	0.01	0.69	0.72	0.9

Note: *p < 0.1 **p < 0.05 ***p < 0.01. Unit of analysis is the rating area. Column 1 displays bivariate association between Republican 2012 vote share and premium growth from 2014 to 2017 on SHOP marketplaces. Columns 2 and 3 present covariate-adjusted model specifications. Column 4 presents covariate-adjusted estimate for individual marketplace restricting to rating areas where SHOP plans were offered. Robust standard errors are used.

Sources: Healthcare.gov, Kaiser Family Foundation, US Census Bureau, County Health Rankings, US Department of Agriculture, Blue Cross Blue Shield, Dave Leip's Atlas of US Presidential Elections.

(1) demonstrating the bivariate association, column (2) including state fixed effects, insurer competition, and deductible controls, and column (3) including a wider array of covariates. Estimates are null across each of these specifications. To be sure that differences in sample are not driving the differences in estimates, I estimate the fully covariate-adjusted model for individual marketplaces, but restrict to the sample of rating areas included in the placebo analysis.[15] Estimates presented in column (4) of table 2 show that individual marketplace results are robust to this sample restriction.

This is an imperfect placebo test due to differences in composition of enrollees in the individual versus SHOP marketplaces. Thus, the comparison relies on the untestable assumption that a hypothesized confounder applies to people in both the individual and SHOP marketplaces. Despite this caveat, the comparison contributes to the evidence indicating the association between partisanship (proxied with vote share) and premium growth is driven by the proposed mechanism.

Effect Timing

The timing of the emergence of associations between Republican vote share and ACA marketplace premiums is also consistent with the proposed mechanism. Using the fully covariate-adjusted specification reported in column (3) of table 1, figure 3 charts the association between Republican vote share and average silver-level marketplace premiums in each year of marketplace operation between 2014 and 2017. The figure demonstrates no association between Republican vote share and premiums in 2014, and a marginal association in 2015 and 2016. In 2017, the estimate jumps sharply, with a 10-point difference in Republican vote share associated with an approximately $12 difference in the average monthly silver-level premium.

This pattern is attributable to a combination of the timing of availability of enrollee information for insurers and the expiration of regulations that resulted in greater insurer financial exposure to the health spending of their enrollees. At the time of rate-setting in 2015, insurers did not have the claims information for their 2014 enrollees, and could only make adjustments to premiums based on the age and gender composition of 2014 enrollees (AAA 2014). The small effect in 2015 likely reflects adjustments insurers made based on levels of enrollment.

15. The sample difference is due to the fact that SHOP plans were only offered in 360 rating areas in each year from 2014 to 2017.

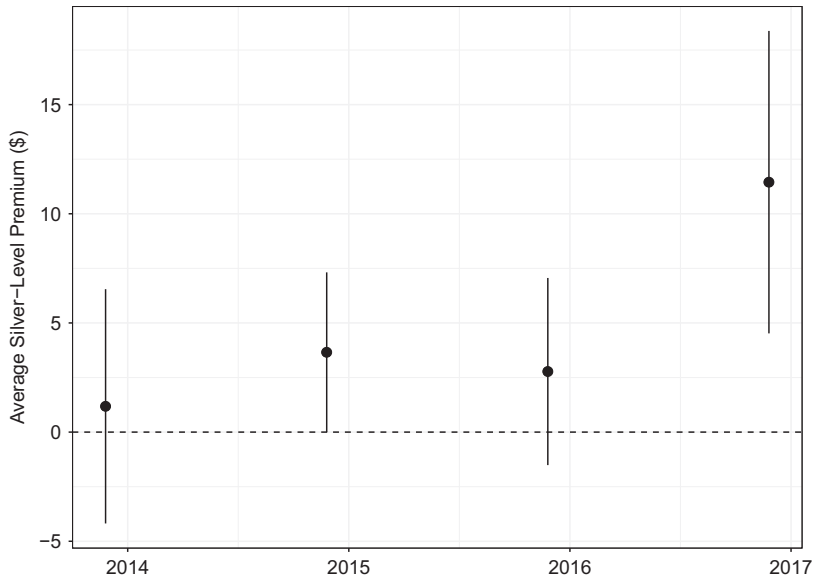


Figure 3 Association between Republican vote share and premiums: 2014–17. Estimated effect of a 10-point difference in Republican vote share on average monthly silver-level premiums in the first four years of the ACA marketplaces. Estimates derived from covariate-adjusted model analogous to column 3 of Table 1. Unit of analysis is the rating area. Confidence intervals were calculated with robust standard errors.

In setting 2016 premiums, insurers did have information regarding the risk profiles of their 2014 enrollees. However, the American Academy of Actuaries, in their issue brief on 2016 premiums, cautioned that there remained considerable uncertainty in applying 2014 claims data. For one, many 2014 enrollees were only enrolled for part of the year, and these enrollees may have had systematically different risk profiles than full-year enrollees. In addition, due to pent-up demand, 2014 enrollees were expected to be systematically more expensive than future enrollees. In the 2017 rate setting, beyond receiving 2015 claims data, insurers received aggregate market-wide claims data that allowed them to compare their risk relative to the broader marketplace. Given high levels of turnover in the individual market (AAA 2016), receiving broader marketplace risk profile data from 2015 likely gave insurers a more reliable estimate of their own 2017 risk profiles.

In addition to changes in the information environment, changes in the regulatory environment from 2016 to 2017 interacted with enrollee risk profiles and the availability of claims information. Until 2017, insurers

were compensated for high-risk enrollees through three programs: risk adjustment, reinsurance, and risk corridors (Cox et al. 2016). In the 2017 marketplace, the only remaining program transferring funds from low-risk profile to high-risk profile insurers was risk adjustment. However, the formulas used to compensate high-risk insurers have been shown to only explain a small portion of the variation in health spending (CMS 2016). The expiration of reinsurance, in particular, was predicted to have a large effect on insurer exposure to enrollee health spending (Blase, Badger, and Haislmaier 2016). The combination of more accurate information on enrollee health spending and increased exposure to enrollee health spending led insurers to increase premiums from 2016 to 2017 to be more in line with actual risk.

Accounting for Alternative Explanations

In observational empirical work there is always the possibility that associations between variables are driven by unobserved factors. In this section, I outline some alternative explanations that could drive the observed results, and discuss why the evidence suggests they are unlikely.

First, there are potential issues with the measurement of both treatment and outcome variables. With respect to the outcome variable, it is possible that the differences in average premium growth observed across Democratic- and Republican-voting rating areas could reflect over-time changes in the characteristics of plans sold in these areas (although estimates are adjusted by growth in average deductibles in rating-area-level models). To account for this potential problem, I investigate the relationship between partisanship and premium growth to specific plans sold in multiple years on the marketplaces.[16] As demonstrated in appendix C, within-plan analysis produces similar results as the main rating-area-level analysis.

With respect to treatment, it is possible that there are particular idiosyncrasies in the 2012 election returns that might influence results. As a robustness check, I run the main analysis using average county-level Republican vote share across the 2004, 2008, and 2012 presidential elections. As demonstrated in appendix D, estimated treatment effects are larger using this measure of county-level partisanship, perhaps because averaging across elections provides a more precise measure of county-level partisanship.

Second, results could be biased by omitted variables. A set of omitted variables capable of driving the documented findings would have to have

16. Since in this formulation the treatment and outcomes are at different levels—rating area versus plan—I use a multilevel model to estimate the treatment effect of interest.

elements highly correlated with both underlying health spending and Republican voting, but be largely uncorrelated with premiums insurers set in 2014 and the array of included covariates. In addition, based on the placebo analysis, this set of omitted variables would have to apply only to ACA marketplace enrollees and not SHOP enrollees. While this is possible, it seems unlikely given the strong theoretical reasons to expect to observe the documented effects based on geographic variation in *enrollment* by voting (Lerman, Sadin, and Trachtman 2017).

A third potential source of bias is nonlinearity in the relationship between the treatment variable (Republican vote share) and premium growth. To investigate the functional form of this relationship, I model a flexible relationship between premium growth and Republican vote share and covariates using a generalized additive model (Hastie and Tibshirani 2004). Appendix F indicates, even after relaxing the linear constraint on the relationship between Republican vote share and premium growth, the estimated relationship appears highly linear.

A fourth potential source of bias is that the statistical models used to adjust for differences in Republican and Democratic areas were selected in a biased manner from the set of plausible models. To demonstrate that the results are robust to a variety of model specifications, I use Bayesian model averaging (BMA), a technique that deals with model selection uncertainty by averaging over a set of possible models (Montgomery and Nyhan 2010). The BMA algorithm employed constructs a weighted average of parameter estimates across possible model specifications, where the weights are a function of the estimated likelihood of each model generating the observed data. Using this algorithm, I generate credible intervals for the parameter of interest, the association between Republican vote share and premium growth. Plots of the estimated distribution of the treatment effect, presented in appendix G, indicate a robust relationship consistent with the main results.

Generalizability

There are three main scope conditions for the particular effects documented here. First is the extremely polarized nature of the ACA. Indeed, the ACA has remained highly polarized since its passage along party lines in 2010.[17] Were the ACA broadly popular, we would be unlikely to

17. See www.kff.org/interactive/kaiser-health-tracking-poll-the-publics-views-on-the-aca/#?response=Favorable&aRange=all&group=Party%2520ID::Democrat::Independent::Republican.

see the Republican under-enrollment that drives the theoretical mechanism explored here.

Second is the voluntary, market-based structure of the ACA's individual health insurance reforms. The relationship between regional partisanship and premium growth is driven by adverse selection in insurance markets. If individuals had less choice with respect to their coverage options, or were the ACA marketplaces more highly regulated, we would be less likely to observe the documented effects.

Third is the variable generosity of benefits under the ACA. One important feature of the structure of the ACA is that, for many potential beneficiaries, the benefits of marketplace insurance might not be dramatically greater than the costs. Higher-income and healthier potential beneficiaries might prefer paying the relatively low penalty to purchasing marketplace insurance, especially if they oppose the policy.[18] Indeed, Sances and Clinton (2019) find that while Republicans were less likely to enroll in ACA marketplace insurance, they were just as likely as Democrats to take advantage of Medicaid expansion—a more generous benefit than the marketplaces.

While the particular interaction between partisan enrollment and adverse selection documented here is likely not generalizable to most other policies, there is reason to believe some policies could be subject to similar effects. Political polarization shows no signs of abating (Pew Research Center 2014), so any major policies enacted in the near future are likely to be highly polarized. In addition, market-based policies that expand the scope of government while maintaining a prominent role for private companies can be an attractive alternative to direct government service expansion for the moderates in Congress that often cast pivotal votes (Mettler 2011).

Moreover, while the particular market-distorting mechanisms highlighted here would only apply to highly polarized, market-based policies, we might expect partisan uptake to pose different types of problems for other policy designs featuring voluntary participation. For instance, partisan uptake could reduce the effectiveness of policies that feature increasing returns to scale. We might imagine a potential government-sponsored training program suffering from lower participation and higher per-individual costs.

Finally, it may be that these results hold only for the 33 states that used Healthcare.gov from 2014 through 2017, and are not generalizable to

18. In 2017, the penalty for noninsurance was the higher of 2.5% of household income or $695 per adult and $347.50 per child. The penalty has been eliminated as of 2019.

SBMs. One reason to think this may be the case is that Republicans are more likely to be confident in the successful implementation of an SBM than an FFM (Dropp, Jackman, and Jackman 2013). Republicans who are more confident in the successful implementation of marketplaces might be more likely to enroll, which would potentially mute the effects observed for FFMs. More data collection and research is required to explore the degree to which the effects documented here are generalizable to states with SBMs.

Discussion

In this article, I propose that partisan uptake in ACA individual marketplaces has important consequences for the broader affordability of marketplace plans due to the logic of adverse selection. To the degree it was unanticipated by insurers, this dynamic would lead to, holding other factors constant, greater premium growth in areas with more Republican voters. I demonstrate a robust empirical association between Republican 2012 vote share and individual marketplace premium growth, and use a variety of statistical methods and placebo analysis to provide evidence against confounding.

The effects documented are, in addition to being statistically significant, substantively meaningful. In the preferred model specification, a 10-percentage-point difference in rating area level Republican vote share is associated with a $144 yearly difference in average silver-level premiums. At first glance, these costs appear relatively minor, especially since they would only be borne by the 1.5 million (as of 2017) unsubsidized marketplace enrollees.[19] There are reasons to believe, however, that they are actually quite consequential.

First, there is evidence that "sticker" prices influence both subsidized and unsubsidized consumers' attitudes toward the marketplaces—and their voting behavior (Kogan and Wood 2019). To the extent this is true, we must pay attention to the political effects of price increases for both subsidized and unsubsidized consumers. Second, even if most consumers are not affected by premium increases due to subsidies, premium growth on the marketplaces increases the federal government's budgetary obligation to pay those subsidies.

Third, and most importantly, it is likely that the analyses presented here underestimate the broader negative effect of partisan uptake on the ACA

19. See www.kff.org/health-reform/issue-brief/data-note-changes-in-enrollment-in-the-individual-health-insurance-market/.

marketplaces. Findings demonstrate disproportionate premium growth in areas with more Republican voters driven by partisan uptake. Yet, partisan animosity toward the ACA, corresponding to lower rates of Republican enrollment, likely worsened risk pools and pushed premiums up in both Democratic- and Republican-leaning areas. Parsing out the full effects of partisan uptake on the marketplaces would require comparing Republican under-enrollment to potential Democratic over-enrollment, which is not feasible with the publicly available data used here. More comprehensive economic analysis of individual level data will be required to estimate the broader effect of partisan uptake on the marketplaces.

In addition to its substantive significance, this work also has theoretical implications for the study of policy feedback. To the extent that policy experience affects political attitudes (Pierson 1993), the findings suggest a type of self-fulfilling prophecy. Individuals living in areas with large numbers of Republican voters experience a less affordable ACA due to the uptake behavior of the Republicans around them. The equilibrium effect is that Republicans, who are already disinclined to favor the ACA, experience a less affordable ACA than Democrats. But more broadly, this suggests a limitation to policy feedback effects in a polarized environment. Polarized policies, depending on their design, may perform poorly, and fail to produce gains for their political champions (Galvin and Thurston 2017). Moreover, in cases where policy success depends on participation, strategic opposition politicians would have an incentive to stoke negative policy attitudes and blame political rivals for policy failures.

There are a number of promising avenues for future research. Most basically, future work might investigate the effects of variation in policy experience like differential growth in premiums on aspects of political behavior. In addition, future scholarship might explore other mechanisms besides participation through which negative partisanship conditions policy feedback effects. For one, even those citizens who do take up public policies may be resistant to updating their policy attitudes. Second, in a polarized environment, state governments controlled by the opposition might be generally disinclined to cooperate with the federal government on policy implementation (Jones, Bradley, and Oberlander 2014). Lack of cooperation from state governments could mute policy feedback effects to the degree that it worsens policy performance (Zhu, Polsky, and Zhang 2018).

This work also has practical implications for policy makers. Policy makers should consider how policy could be designed to be more robust to the effects of negative partisanship. With respect to the ACA, insurers could be prohibited from selling individual plans off-marketplace, a

regulation already in place in Vermont and Washington, DC. Prohibiting off-marketplace sales would push wealthier Republicans from off-marketplace to on-marketplace plan choices, balancing out the risk pool in more Republican areas. In addition, a steep penalty for not purchasing insurance could be used to strongly deter people from failing to take up coverage on ideological grounds.

More generally, policymakers might consider design choices that prevent a policy from remaining highly polarized years after its enactment. By delegating authority to the state level, the architects of the ACA provided opponents of the policy an institutional venue to challenge the law (Oberlander 2016), which likely increased the endurance of the ACA's salience and polarization. Policy makers might also consider design choices that would be less subject to partisan uptake. As Sances and Clinton (2019) show, the ACA's Medicaid expansion did not feature partisan uptake, perhaps due to the generosity of benefits. Moreover, even if there were partisan uptake, it would not have affected the broader performance of the policy due to the lack of market mechanisms.

■ ■ ■

Samuel Trachtman is a PhD candidate in the Charles and Louise Travers Department of Political Science at UC Berkeley. He studies the politics of public policy in the United States, with a focus on state politics and policy in the areas of health care and climate. His articles have appeared in the *American Political Science Review, Health Affairs,* and *JHPPL*.
sam.trachtman@berkeley.edu

Acknowledgments

I thank Paul Pierson, Gabriel Lenz, Laura Stoker, Hannah Trachtman, Sarah Gollust, Alexander Sahn, Leo Arriola, Jessica Banthin, Phil Ellis, and Jonathan Holmes for helpful comments, and Chris Ody for sharing materials. I also acknowledge funding from the National Science Foundation under DGE 1752814.

References

AAA (American Academy of Actuaries). 2014. "Drivers of 2015 Health Insurance Premium Changes." *American Academy of Actuaries*, June 4. www.actuary.org/files/2015_Premium_Drivers_Updated_060414.pdf.

AAA (American Academy of Actuaries). 2016. "Drivers of 2017 Health Insurance Premium Changes." *American Academy of Actuaries*, May. www.actuary.org/files/publications/IB.Drivers5.15.pdf.

Abramowitz, Alan I., and Steven Webster. 2016. "The Rise of Negative Partisanship and the Nationalization of US Elections in the Twenty-First Century." *Electoral Studies* 41: 12–22.

Advisory Board. 2014. "Zeke Emanuel: Employer-Based Insurance Will Die Out by 2025." Daily Briefing, April 9. www.advisory.com/daily-briefing/2014/04/09/zeke-emanuel-employer-based-insurance-will-die-out-by-2025.

Antos, Joseph R., and James C. Capretta. 2016. "The Future of the ACA's Exchanges." *Health Affairs* (blog), October 11. www-healthaffairs-org.libproxy.berkeley.edu/do/10.1377/hblog20161011.057024/full/.

Auter, Zac. 2017. "US Uninsured Rate Edges up Slightly." *Gallup*, April. news.gallup.com/poll/208196/uninsured-rate-edges-slightly.aspx.

BCBS (Blue Cross Blue Shield). n.d. "BCBS Health Index." www.bcbs.com/the-health-of-america/health-index (accessed April 16, 2018).

Blase, Brian, Doug Badger, and Edmund Haislmaier. 2016. "The Affordable Care Act in 2014: Significant Insurer Losses Despite Substantial Subsidies." *Mercatus Center*, April 22. www.mercatus.org/publication/affordable-care-act-2014–significant-insurer-losses-despite-substantial-subsidies.

Blumenthal, David. 2014. "The Three R's of Health Insurance." *Commonwealth Fund* (blog), March 5. www.commonwealthfund.org/publications/blog/2014/mar/the-three-rs-of-health-insurance.

Campbell, Andrea Louise. 2002. "Self-Interest, Social Security, and the Distinctive Participation Patterns of Senior Citizens." *American Political Science Review* 96, no. 3: 565–74.

Cho, Wendy K. Tam, James G. Gimpel, and Iris S. Hui. 2013. "Voter Migration and the Geographic Sorting of the American Electorate." *Annals of the Association of American Geographers* 103, no. 4: 856–70.

CMS (Centers for Medicare and Medicaid Services). 2016. "March 31, 2016, HHS-Operated Risk Adjustment Methodology Meeting." Discussion Paper. www.cms.gov/CCIIO/Resources/Forms-Reports-and-Other-Resources/Downloads/RA-March-31-White-Paper-032416.pdf.

Cox, Cynthia, Ashley Semanskee, Gary Claxton, and Larry Levitt. 2016. "Explaining Health Care Reform: Risk Adjustment, Reinsurance, and Risk Corridors." *Kaiser Family Foundation*, August 17. www.kff.org/health-reform/issue-brief/explaining-health-care-reform-risk-adjustment-reinsurance-and-risk-corridors/.

Cutler, David M., and Sarah J. Reber. 1998. "Paying for Health Insurance: The Trade-Off between Competition and Adverse Selection." *Quarterly Journal of Economics* 113, no. 2: 433–66.

Dafny, Leemore S., Jonathan Gruber, and Christopher Ody. 2015. "More Insurers Lower Premiums: Evidence from Initial Pricing in the Health Insurance Marketplaces." *American Journal of Health Economics* 1, no. 1: 53–81.

Diamond, Alexis, and Jasjeet S. Sekhon. 2013. "Genetic Matching for Estimating Causal Effects: A General Multivariate Matching Method for Achieving Balance in Observational Studies." *Review of Economics and Statistics* 95, no. 3: 932–45.

Dropp, Kyle A., Molly C. Jackman, and Saul P. Jackman. 2013. "The Affordable Care Act: An Experiment in Federalism?" *Center for Effective Public Management at Brookings*, October. www.brookings.edu/wp-content/uploads/2016/06/DroppJackman-and-JackmanACA-Experment-in-Federalism102213.pdf.

Galvin, Daniel J., and Chloe N. Thurston. 2017. "The Democrats' Misplaced Faith in Policy Feedback." *Forum* 15, no. 2: 333–43. doi.org/10.1515/for-2017-0020.

Gamio, Lazaro. 2016. "Urban and Rural America Are Becoming Increasingly Polarized." *Washington Post*, November 17. www.washingtonpost.com/graphics/politics/2016-election/urban-rural-vote-swing/.

Hastie, Trevor, and R. Tibshirani. 2004. "Generalized Additive Models." *Encyclopedia of Statistical Sciences*, August 15. doi.org/10.1002/0471667196.ess0297.pub2.

Hertel-Fernandez, Alexander, Theda Skocpol, and Daniel Lynch. 2016. "Business Associations, Conservative Networks, and the Ongoing Republican War over Medicaid Expansion." *Journal of Health Politics, Policy and Law* 41, no. 2: 239–86.

Imai, Kosuke, and Marc Ratkovic. 2013. "Covariate Balancing Propensity Score." *Journal of the Royal Statistical Society: Series B (Statistical Methodology)* 76, no. 1: 243–63.

Iyengar, Shanto, and Sean J. Westwood. 2015. "Fear and Loathing across Party Lines: New Evidence on Group Polarization." *American Journal of Political Science* 59, no. 3: 690–707.

Jones, David K., Katharine W. V. Bradley, and Jonathan Oberlander. 2014. "Pascal's Wager: Health Insurance Exchanges, Obamacare, and the Republican Dilemma." *Journal of Health Politics, Policy and Law* 39, no. 1: 97–137.

KFF (Kaiser Family Foundation). 2018. "Total Marketplace Enrollment." www.kff.org/health-reform/state-indicator/total-marketplace-enrollment/.

Kliff, Sarah. 2016. "Is Obamacare Failing?" *Vox*, August. www.vox.com/2016/8/24/12538934/is-obamacare-failing.

Kogan, Vladimir, and Thomas Wood. 2019. "Did Obamacare Implementation Cost Clinton the 2016 Election?" SSRN Scholarly Paper No. 3075406. Rochester, NY: Social Science Research Network. doi.org/10.2139/ssrn.3075406.

Lerman, Amy E., Meredith L. Sadin, and Samuel Trachtman. 2017. "Policy Uptake as Political Behavior: Evidence from the Affordable Care Act." *American Political Science Review* 111, no. 4: 755–70. doi.org/10.1017/S0003055417000272.

Levitt, Larry, Gary Claxton, Anthony Damico, and Cynthia Cox. 2016. "Assessing ACA Marketplace Enrollment." Kaiser Family Foundation, March 4. www.kff.org/health-reform/issue-brief/assessing-aca-marketplace-enrollment/.

Mettler, Suzanne. 2005. *Soldiers to Citizens: The G.I. Bill and the Making of the Greatest Generation*. New York, Oxford University Press.

Mettler, Suzanne. 2011. *The Submerged State: How Invisible Government Policies Undermine American Democracy*. Chicago: University of Chicago Press.

Montgomery, Jacob M., and Brendan Nyhan. 2010. "Bayesian Model Averaging: Theoretical Developments and Practical Applications." *Political Analysis* 18, no. 2: 245–70.

Montgomery, Jacob M., Brendan Nyhan, and Michelle Torres. 2018. "How Conditioning on Posttreatment Variables Can Ruin Your Experiment and What to Do About It." *American Journal of Political Science* 62, no. 3: 760–75.

Morrisey, Michael A, Richard P. Nathan, Caitlin Brandt, and Alice Rivlin. 2016. "Early Assessment of Competition in the Health Insurance Marketplace." Brookings Institution, January 19. www.brookings.edu/research/early-assessment-of-competition-in-the-health-insurance-marketplace/.

Oberlander, Jonathan. 2016. "Implementing the Affordable Care Act: The Promise and Limits of Health Care Reform." *Journal of Health Politics, Policy and Law* 41, no. 4: 803–26.

Pew Research Center. 2014 "*Political Polarization in the American Public*." Washington, DC: Pew Research Center. www.people-press.org/2014/06/12/political-polarization-in-the-american-public/.

Pierson, Paul. 1993. "When Effect Becomes Cause: Policy Feedback and Political Change." *World Politics* 45, no. 4: 595–628.

Rothschild, Michael, and Joseph Stiglitz. 1976. "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information." *Quarterly Journal of Economics* 90, no. 4: 629–49.

Rovner, Julie. 2016. "Is Trump's Debate Claim about Health Care Costs Rising True?" PBS NewsHour, October 11. www.pbs.org/newshour/health/trumps-debate-claim-health-care-costs-rising-true.

Rubin, Donald B. 1973. "Matching to Remove Bias in Observational Studies." *Biometrics* 29, no. 1: 159–83.

Sances, Michael W., and Joshua D. Clinton. 2019. "Who Participated in the ACA? Gains in Insurance Coverage by Political Partisanship." *Journal of Health Politics, Policy and Law* 44, no. 3: 349–79.

Sen, Aditi P., and Thomas C. DeLeire. 2016. "The Effect of Medicaid Expansion on Marketplace Premiums." ASPE Issue Brief. Washington, DC: Department of Health and Human Services.

Smith, Samantha. 2015. "From the Very Start, Sharp Partisan Divisions over Obamacare." Pew Research Center, June. www.pewresearch.org/fact-tank/2015/06/25/from-the-very-start-sharp-partisan-divisions-over-obamacare/.

Tesler, Michael. 2015. "More Democrats Are Getting Health Insurance, Thanks to Obamacare. Why Are Republicans Staying Away?" *Washington Post*, July 16. www.washingtonpost.com/news/monkey-cage/wp/2015/07/16/more-democrats-are-getting-health-insurance-thanks-to-obamacare-why-are-republicans-staying-away/.

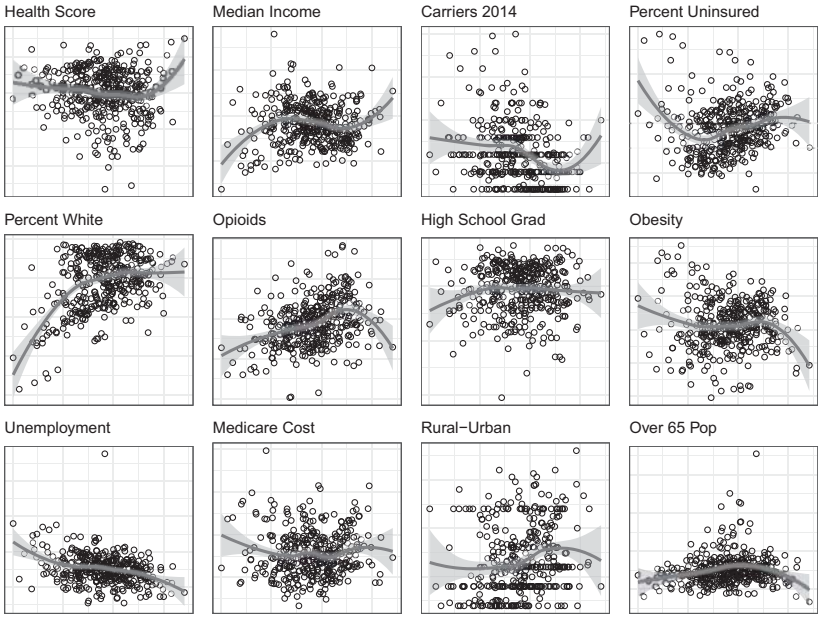
Woolf, Steven H., Laudan Y. Aron, Lisa Dubay, Sarah M. Simon, Emily Zimmerman, and Kim X. Luk. 2015. "How Are Income and Wealth Linked to Health and Longevity?" Urban Institute, April 13. www.urban.org/research/publication/how-are-income-and-wealth-linked-health-and-longevity/view/full_report.

Zhu, Jane M, Daniel Polsky, and Yuehan Zhang. 2018. "State-Based Marketplaces Outperform Federally Facilitated Marketplaces." Leonard Davis Institute of Health Economics, March 21. ldi.upenn.edu/sites/default/files/pdf/LDI%20Issue%20Brief%202018%20No.%201_6.pdf.

Appendix A Summary Statistics

Variable	Mean	Std. Dev.	Source
Average silver premium 2014	262.43	52.95	Healthcare.gov
Average silver premium 2017	352.65	61.01	Healthcare.gov
Average silver deductible 2014	2999.07	827.35	Healthcare.gov
Average silver deductible 2017	3799.47	893.4	Healthcare.gov
Number insurers 2014	3.01	1.68	Kaiser Family Foundation
Number insurers 2017	2.28	1.35	Kaiser Family Foundation
Hospital price index	8.74	0.26	Dafny et al. (2015)
Medicare cost index	9.1	0.11	Dartmouth Atlas of Healthcare
Percent obese	0.31	0.04	County Health Rankings
Health score (Blue Cross Blue Shield)	0.92	0.01	Blue Cross Blue Shield
Opioid prescription rate	94.43	29.18	Centers for Disease Control and Prevention
Median income	10.73	0.18	USDA
Income growth (2013–16)	0.09	0.05	USDA
Percent uninsured (pre-ACA)	0.19	0.05	County Health Rankings
Population (logged)	12.41	1.27	US Census
Unemployment rate	0.08	0.02	USDA
Percent age 20–24	0.07	0.02	US Census
Percent age 25–34	0.12	0.02	US Census
Percent age 35–44	0.12	0.01	US Census
Percent age 45–64	0.27	0.03	US Census
Urban-rural continuum code	3.36	1.8	USDA
Percent high school graduate	0.79	0.09	County Health Rankings
Percent some college	0.55	0.1	County Health Rankings
Percent African American	0.14	0.14	County Health Rankings
Percent Hispanic	0.09	0.13	County Health Rankings
Percent White	0.73	0.18	County Health Rankings

Appendix B Covariate Overlap



Note: Scatterplots at the rating area level for key covariates, with Republican 2012 vote share on the X-axis, and the covariate of interest on the Y-axis.

Appendix C Plan-Level Estimates

	Individual Marketplace (1)	SHOP Marketplace (2)
Republican 2012 vote share	0.41***	0.11
	(0.17)	(0.08)
Average silver deductible growth	0.92	–0.12
	(4.82)	(1.65)
Number of carriers	–0.02	0
	(0.04)	(0)
Hospital price index	–0.2	–0.15*
	(0.15)	(0.08)
Medicare cost index	0.71	–0.03
	(0.49)	(0.26)
Percent obese	2.57	0.15
	(1.45)	(0.75)
Health score (Blue Cross Blue Shield)	0.14	0.12
	(0.45)	(0.23)
Opioid prescription rate	–0.05	–0.06
	(0.12)	(0.06)
Median income	–1.49***	–0.12
	(0.6)	(0.28)
Percent uninsured (pre-ACA)	0.01	0
	(0.01)	(0.01)
Population (logged)	–0.78	0.69
	(1.09)	(0.41)
Unemployment rate	2.11	–0.01
	(2.24)	(1.15)
State fixed effects	Y	Y
Rural-urban fixed effects	Y	Y
Age brackets	Y	Y
Education	Y	Y
Race	Y	Y
Observations	2933	2529
Number of rating areas	261	263

Note: *p < 0.1 **p < 0.05 ***p < 0.01. Unit of analysis is the health insurance plan. Column 1 displays results from multilevel model estimating association between Republican 2012 vote share at rating area level and plan-level premium growth for individual marketplaces. Column 2 presents analogous estimates for SHOP marketplaces. County and rating area level random intercepts are estimated.

Appendix D Election Average Robustness Check

	OLS			WLS	
	(1)	(2)	(3)	(4)	(5)
Republican vote share	0.71***	0.3***	0.35***	0.35***	0.41***
(2004–12)	(0.12)	(0.07)	(0.12)	–0.1	–0.11
Average silver deductible		–0.5**	–0.58***	0.13	–0.04
growth		(0.23)	(0.22)	(0.25)	(0.26)
Number of carriers		–0.03***	–0.02**	–0.04***	–0.02**
		(0.01)	(0.01)	(0.01)	(0.01)
Hospital price index			0.01		0.06
			(0.03)		(0.04)
Medicare cost index			–0.08		–0.05
			(0.09)		(0.11)
Percent obese			0.47		0.17
			(0.28)		(0.32)
Health score (Blue Cross			1.85*		1.52
Blue Shield)			(0.95)		(0.99)
Opioid prescription rate			0.02		0.05
			(0.03)		(0.03)
Median income			0.18**		0.2**
			(0.09)		(0.1)
Percent uninsured			0.25		0
(pre-ACA)			(0.35)		(0.38)
Population (logged)			–0.02**		–0.01
			(0.01)		(0.01)
Unemployment rate			0.46		0.87**
			(0.57)		(0.41)
State fixed effects		Y	Y	Y	Y
Rural-urban fixed effects			Y		Y
Age brackets			Y		Y
Education controls			Y		Y
Race controls			Y		Y
Observations	391	391	391	391	391
R-squared	0.06	0.87	0.89	0.92	0.94

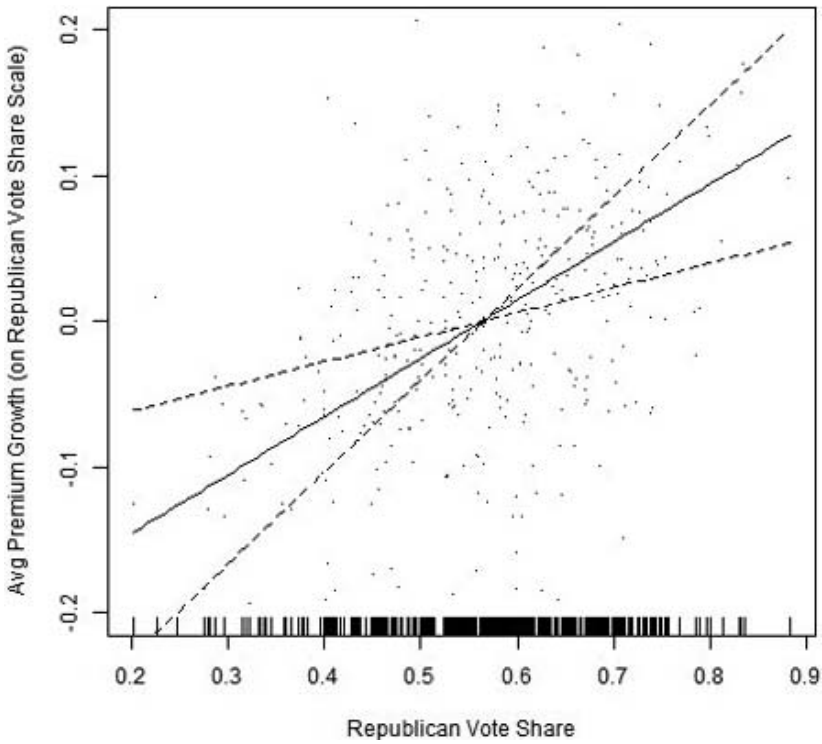
Note: *p < 0.1 **p < 0.05 ***p < 0.01. Unit of analysis is the rating area. Column 1 displays bivariate association between Republican 2012 vote share and premium growth from 2014 to 2017 on ACA individual marketplaces. Columns 2 and 3 present covariate-adjusted model specifications. Columns 4 and 5 present specifications with CBPS weights for continuous matching. Robust standard errors are used.

Appendix E Income Growth Robustness Check

	OLS			WLS	
	(1)	(2)	(3)	(4)	(5)
Republican 2012 vote share	0.7***	0.28***	0.32***	0.26***	0.31***
	(0.11)	(0.07)	(0.12)	(0.08)	(0.11)
Average silver deductible growth		–0.49**	–0.57***	0.07	–0.12
		(0.23)	(0.22)	(0.24)	(0.25)
Number of carriers		–0.03***	–0.02**	–0.04***	–0.02**
		(0.01)	(0.01)	(0.01)	(0.01)
Hospital price index			0.01		0.06**
			(0.03)		(0.03)
Medicare cost index			–0.09		–0.09
			(0.09)		(0.1)
Percent obese			0.43		0.16
			(0.29)		(0.3)
Health score (Blue Cross Blue Shield)			1.8*		1.39
			(0.95)		(0.94)
Opioid prescription rate			0.02		0.05
			(0.03)		(0.03)
Median income			0.17*		0.18**
			(0.09)		(0.09)
Income growth (2013–16)			–0.09		0
			(0.11)		(0.1)
Percent uninsured (pre-ACA)			0.23		–0.17
			(0.35)		(0.36)
Population (logged)			–0.02**		–0.02**
			(0.01)		(0.01)
Unemployment rate			0.43		0.75**
			(0.56)		(0.35)
State fixed effects		Y	Y	Y	Y
Rural-urban fixed effects			Y		Y
Age brackets			Y		Y
Education controls			Y		Y
Race controls			Y		Y
Observations	391	391	391	391	391
R-squared	0.07	0.87	0.89	0.92	0.94

Note: *p < 0.1 **p < 0.05 ***p < 0.01. Unit of analysis is the rating area. Column 1 displays bivariate association between Republican vote share, averaged across the 2004, 2008, and 2012 elections, and premium growth from 2014 to 2017 on ACA individual marketplaces. Columns 2 and 3 present covariate-adjusted model specifications. Columns 4 and 5 present specifications with CBPS weights for continuous matching. Robust standard errors are used.

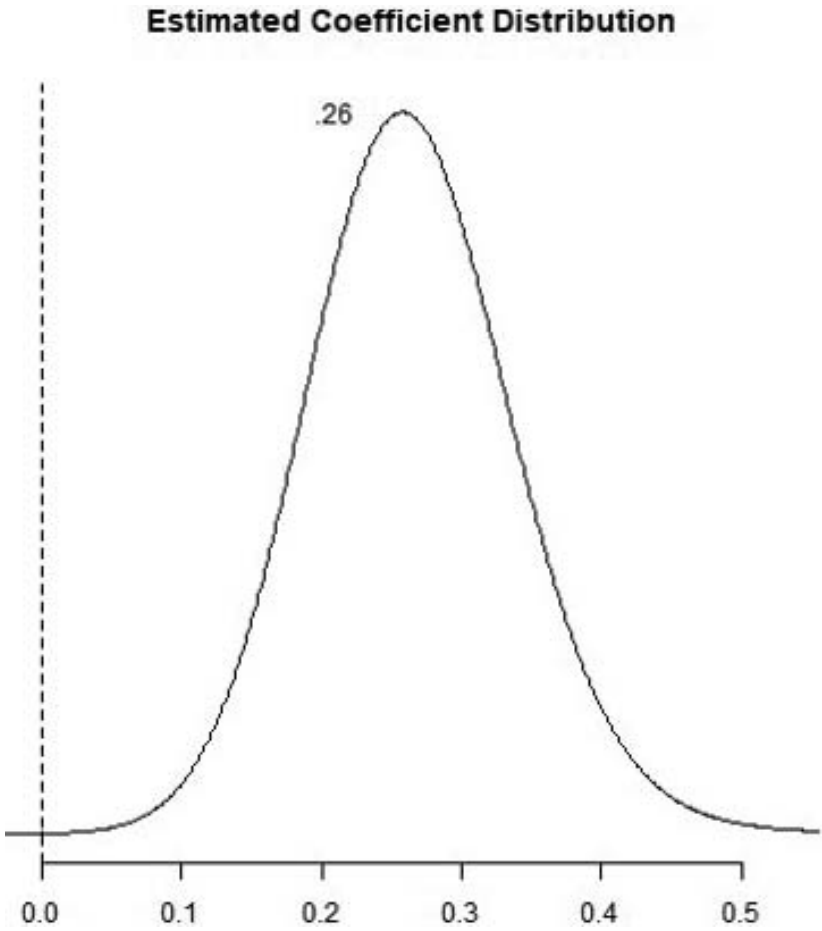
Appendix F GAM Plot



Note: Figure plots the predicted relationship from GAM model between Republican vote share and premium growth for the average silver plan at the rating area level, where the y-axis is scaled to have mean 0 and standard deviation equal to the standard deviation of Republican vote share.

Source: Healthcare.gov (n = 391).

Appendix G Bayesian Model Averaging Plot



Note: Figure plots the posterior distribution of the estimated effect of Republican 2012 vote share on the average silver plan at the rating area level. Posterior distributions are derived from Bayesian Model Averaging procedure.

Source: Healthcare.gov (n = 391).