An Examination of the Impact of State Government Implementation on the Affordable Care Act

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A thesis submitted to the faculty of the University of North Carolina in partial fulfillment of the requirements of a degree with Honors in Political Science.

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I. Introduction

For the past few years, the Patient Protection and Affordable Care Act (ACA) has been a constant source of debate among the American public. Whether it has been in the halls of Congress or on the street corners of U.S. cities, everyone seems to have an opinion on this divisive law. Many scholars agree that "Obamacare," as it is known colloquially, is an integral part of the rise in ideological polarization among our lawmakers. Due to this political polarization, implementation of the Affordable Care Act has varied across the United States. Generally, states with liberal legislatures have embraced the act, while states with conservative legislatures have attempted to block it (Obama Care Facts 2013, 1). This ideological divide has very important implications for citizens. Many of the provisions of the law contain health insurance provisions that will affect the daily lives of nearly every citizen. The implementation of these provisions is essential to their success. My thesis seeks to discover the true effects of the ideological divide on the Affordable Care Act by doing a state-by-state analysis. In doing this, I answer the question: "How have state government actions altered the effectiveness of the Affordable Care Act?"

I answer this question because of its importance in current American politics. Because it deeply affects the lives of citizens, it is the duty of researchers like myself to investigate the ACA thoroughly. This thesis provides a guide with which to examine future state implementation actions. In a broader sense, this study is also important because it examines the manner in which truly federal policies work. When I mention the term "truly federal", I mean that the ACA requires both the national and state governments to cooperate on implementation. While the ACA is a national law, states were given a considerable amount of power in its implementation. This thesis serves as a primer on the interaction between the state and federal

governments in implementing federal laws. Because of its current relevance and its broader implications for federal policies, I study ACA implementation.

The next section of this study presents a review of current literature on the Affordable Care Act. By summarizing this literature, I provide a scholastic introduction to the Affordable Care Act for the reader. After providing a summary of this literature, I describe how my thesis fits into the existing research and expands upon it. Next, I provide a theoretical argument for the topic, outlining the manner in which state government actions impact Affordable Care Act implementation. In doing this, I present a causal mechanism, which describes each phase of this process in detail. The causal mechanism leads to my hypothesis, which predicts a link between state government actions and effectiveness of the ACA. I then propose to test the hypothesis by testing the impact of state government actions on two goals of the Affordable Care Act: "better access to care" and "more affordable coverage". Next, I present several regression analyses to test these goals. For goal one, while exchange implementation had some effect, states that expanded Medicaid were most likely to provide "better access to care" for citizens (goal one). The result for goal two is less conclusive. While there is some evidence to support the hypothesis that state government actions impacted the goal of "more affordable coverage", there were conflicting results among my models. Ultimately, I conclude that states that acted on exchange implementation or expansion of Medicaid are more likely to have positive results than those that did not.

II. Literature Review

Pre-First Enrollment Period

The existing literature on the Affordable Care Act covers a broad range of topics and their relationship with the law. As discussed in this review, the current research focuses on individual states and their specific outcomes. It also discusses individual health issues and their relation to the Affordable Care Act. However, while there is a large amount of research on specific states and issues, the current literature lacks a comprehensive analysis that describes the link between state government actions and effectiveness for all 50 states. As I detail later, this is where my research will fit in. By providing a causal mechanism to describe ACA outcomes for all 50 states, I add to the current research base on the topic.

One of the major works that addresses implementation of the ACA is by Haeder and Weimer (2013). Their article provides two methods to analyze state government actions toward implementation of the law: whether a state joined a lawsuit against the ACA, and whether a state created its own insurance exchange. According to this research, 22 states joined a lawsuit, while 28 did not. As for creating their own exchanges, 15 initially created one, while 35 did not. It is important to note that these statistics slightly changed as the law's implementation moved forward. These statistics present a general trend among the states. In states that are under Democratic control (specifically of the legislature), there is much less opposition toward the ACA. Conversely, states that are controlled by Republicans tended to take negative action toward the ACA's implementation. These metrics, as well as the context behind them, are vital in analyzing state government actions toward the law.

The authors also describe several different themes of exchange implementation. Divided into five categories, these themes describe one end of the spectrum as "a variety of Democrat-

leaning states moved quickly after enactment of the ACA and established exchanges between December 2010 and July 2011" (Haeder and Weimer 2013, 38). The other end features "Republicans outside Washington, D.C. [that] found themselves confronted with an interesting dilemma: either support the implementation of the ACA and develop local, conservative solutions or come out vocally against it and refuse to cooperate at all costs" (Haeder and Weimer 2013, 38). It is extremely important to consider each state's individual dilemmas when analyzing implementation of the Affordable Care Act. Once again, this article illustrates the general trend in state government actions on the ACA among party lines. While the metrics at the beginning of the paper provide important data on the nation as a whole, it also includes some specific cases that provide important context.

While Haeder and Weimer (2013) briefly mention these important specific cases, Benjamin, Slagle, and Jones (2013) expand on them. This article, which mentions the Haeder and Weimer paper as a starting point, provides an in-depth view of states like "Oregon, [in which] the adoption of a rigorous rate review process resulted in […] lowered premium rates" (Benjamin, Slagle, and Jones 2013, 48). It also discusses "New York, [which had] a radical reduction in premiums (in some cases by nearly 50 percent) and the launch of an all-payer-claims database that is expected to further reduce costs and regularize the health care marketplace" (Benjamin, Slagle, and Jones 2013, 48). Examples like these provide an excellent idea of the success that the law has had in states that took positive actions towards implementing it. While this article presents cases of successful implementation, it lacks examples of states that did not take positive actions on the law. A more complete analysis of ACA implementation would also address states that did not take proactive steps towards implementation.

Along with these specific state cases, Benjamin, Slagle, and Jones (2013) also address national measures that were adopted to ease state implementation as a whole, especially in states that did not accept the ACA right away. One such measure that they address is "postponing the employer mandate [until 2015, which] will potentially benefit the state-based individual insurance exchanges by increasing the number of covered lives in those exchanges" (Benjamin, Slagle, and Jones 2013, 38). The inclusion of this national policy reveals an important trend about ACA implementation. Because many states were vehemently opposed to implementing the law from the outset, the national government had to adjust its policies. This article, combined with Haeder and Weimer's (2013) analysis, provides excellent detail about implementation of the ACA as well as each state's actions toward it.

While the Benjamin article presents a broadened view of health care effectiveness by focusing on the system as a whole, Martin, Strach, and Schackman (2013) focus on a single issue. In narrowing its view to just HIV care, this article provides another way to evaluate the effectiveness of the ACA. The article does this by discussing the link between state government action and success. The authors found that, "States such as California and Maryland that have strong political commitment to implement the ACA (including Medicaid expansion) […] are likely to do better than under current conditions" (Martin, Strach, and Schackman 2013, 95). By accounting for states' actions toward the ACA in the context of HIV care, the authors were able to find a positive link between state government actions and effectiveness. Later in the paper, the authors address states that did not take action on the ACA. According to their findings, "there may be no change or possibly worse HIV health outcomes in states without political commitment and resources" (Martin, Strach, and Schackman 2013, 95). Once again, the authors create a clear

link between state government actions and effectiveness of the ACA. However, a more complete analysis would feature many different health outcomes, not just a single issue.

Post-First Enrollment Period

While there is a plethora of articles on the time before the first enrollment period, the research from after the first enrollment period is much more limited. However, despite these limitations, there are some key studies on this period. One of the major analyses on this period is by Blumenthal and Collins (2014). This study provides a report on the progress of the Affordable Care Act nationwide. In completing this report, Blumenthal and Collins (2014) come to three main conclusions. First, they conclude that, "As the number of individuals benefitting from the law grows, its wholesale repeal will grow less likely, although the law could still be importantly modified in the future" (Blumenthal and Collins 2014, 281). This consideration is important when examining the implementation of the law. If the law were to be repealed in the future, current analyses would be rendered mostly irrelevant. However, because the law will not be repealed, research on its current form is relevant.

The second conclusion that Blumenthal and Collins (2014) draw is that "experience with the ACA will vary enormously among states" (Blumenthal and Collins 2014, 281). While there are many differences between states, the article specifically mentions that, "those deciding not to expand Medicaid will benefit far less from the law" (Blumenthal and Collins 2014, 281). Lastly, the article's third conclusion maintains that, "the sustainability of the coverage expansions will depend to a great extent on the ability to control the overall costs of care in the United States" (Blumenthal and Collins 2014, 281). If the costs are not controlled properly, the premiums will become too expensive for citizens. All three of these conclusions lead the authors to their final

contention that, “Developing and spreading innovative approaches to health care delivery that provide greater quality at lower cost is the next great challenge facing the nation” (Blumenthal and Collins 2014, 281). Blumenthal and Collins (2014) present an excellent focus on health care costs and the future problems that these costs could cause for the Affordable Care Act.

My project is an excellent addition to the current literature on the Affordable Care Act’s implementation and effectiveness. All of the articles mentioned in this review provide specific examples and detailed statistics on the Affordable Care Act. While some focus on implementation/action, others focus on effectiveness. In some cases, the authors even link these variables, as I do in this study. However, the authors of these papers often focus on specific state cases, as in the Benjamin article, or specific issues, as in the Martin article. My thesis contributes to this existing research by aggregating these specific examples and inferring about the system as a whole. There is not much scholarly research about the law’s effectiveness nationwide. This study fills the void left by the previous research.

III. Theory

Causal Mechanism

My thesis tests the impact of state government actions on implementation of the ACA. I hypothesize that the law will have its greatest impact in states that have fully embraced it through their actions. Conversely, it will have the least impact in states that have inhibited its implementation. In this case, I am considering two specific state government actions: the creation of a state exchange, and the expansion of Medicaid. In my analysis, I compare the states that chose to take these actions to the states that opted against these actions. I seek to find whether these actions truly affected the desired outcomes of the law in each state.

My causal mechanism relies on this approach. I argue that the ideological composition of a state determined its initial actions in response to the law's implementation. States that are controlled by Democrats tended to take action on the law, while Republican-controlled states tried to inhibit its implementation. The states that took proactive actions toward implementing the law adapted it to fit their state the best, mostly through the design of their exchange and Medicaid expansion. Instead of spending energy opposing the law, the legislatures and governors of these states have devoted their legislative power to improving it and promoting it to the public. In turn, these state-level improvements and promotions led to more effective outcomes for the law in states that took action before the first enrollment period. This causal mechanism describes the exact elements that link state government actions to effectiveness of the Affordable Care Act. Therefore, my hypothesis can be described as follows.

Hypothesis: In a comparison of states, those that set up Affordable Care Act exchanges and/or expanded Medicaid will be more likely to have positive results than those that did not. Conversely, those that did not set up Affordable Care Act exchanges and/or expanded Medicaid will be more likely to have negative results than those that did.

Other Factors

While the actions of a state have a great impact on the effectiveness of the ACA, other factors are also compelling. As mentioned before, the party composition plays a large role in state government decision-making. Another important factor has to do with the wealth of a state. The income of citizens within a state also may have had an effect on the number of citizens that previously had insurance. If more citizens could initially afford insurance in a state, it follows that the effectiveness of the law in insuring new people may have been lower in these states. I control for these income differences in my theory. I also argue that the racial composition of a state may affect the success of the law. The ability of some racial groups to obtain health care is limited by certain barriers to access, and it is important to account for these barriers in the theory. Lastly, it is important to recognize the importance of structure of care delivery in the theory. While some citizens may receive health care under new plans, the method in which they receive this care within these plans can vary greatly. Generally, managed care systems tend to be more innovative and these systems drive down costs in the insurance market. Pay for service systems tend to cause opposite results. It is important to control for the structure of care delivery offered within a state to account for these differences. While this list just presents the most relevant controls, I detail each control variable in the research design portions of the project.

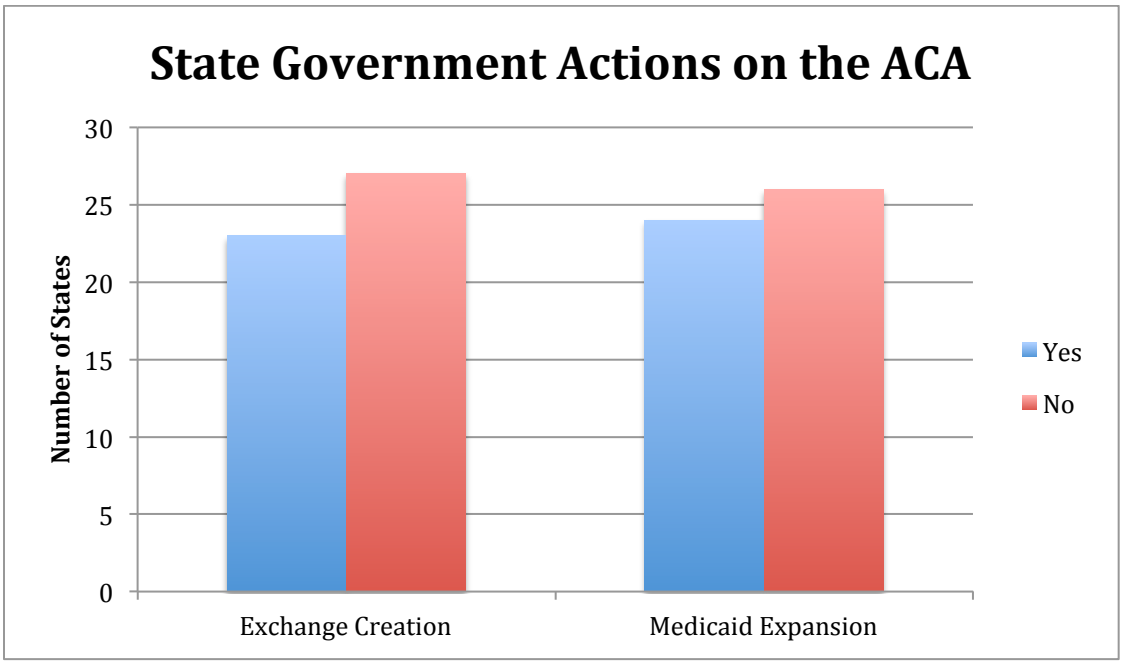
IV. General Research Design

Unit of Analysis: The States

Pristine research design is critical in my analysis. First, I must define the cases to be used in this analysis. For the statistical segment of this analysis, I use data from all 50 states. The data covers the differences in health care before and after the first ACA enrollment period. Therefore, the data that I present on the uninsured population and the differences in cost comes from 2013 and 2014. Every other measure that I use for the independent variables comes from 2013. This is due to the fact that I want to capture the conditions each state was under as it entered the first enrollment period. By collecting data from every state, I am able to successfully determine the impact of state government actions on effectiveness through statistical analysis.

Independent Variable: State Government Actions

Figure 1 *(Source: Kaiser Family Foundation, 2013)*



Next, it is important to define the concepts that shape this research question. The first concept that must be defined is "state government actions." This variable serves as the independent variable of interest in my thesis. While this concept could be defined in many different ways, I operationally define "state government actions" based on two criteria: whether or not a state formed its own Affordable Care Act exchange and whether or not a state decided to expand Medicaid. The data for these criteria come from Kaiser Family Foundation (2013) research on health care reform. The expansion of Medicaid is a relatively simple concept to incorporate into a statistical model due to the fact that there are only two outcomes to this process: either "expansion" or "no expansion." Overall, 24 states expanded Medicaid before the first enrollment period, and 26 chose not to expand (Kaiser Family Foundation 2013, 1). The data is presented in figure one.

However, while this concept is simple, a state's decision to build its own exchange is more complex. In deciding whether or not to build its own exchange, a state could choose one of three options: build it themselves, work with the federal government to build it, or leave it completely for the federal government to build. In this analysis, I classify states into two categories. States that have built their own exchanges or worked with the federal government are grouped in one category. The states that decided to leave their exchange creation completely to the federal government form the other category. This distinction makes sense because my analysis seeks to analyze the difference between states that took action on the Affordable Care Act and states that did not take action. Based on this distinction, 23 states took action in forming their own exchange and 27 did not (Kaiser Family Foundation 2013, 1). The data for this variable is also presented in figure one. It is important to note that exchange creation and Medicaid expansion are highly correlated in a positive direction ($r = .7197$, sig. = 0.000). This

indicates that many of the states that built their own exchange also expanded Medicaid. Both a state's decision to create an exchange and its decision to expand Medicaid are the variables that operationalize "state government actions".

Dependent Variable: Effectiveness

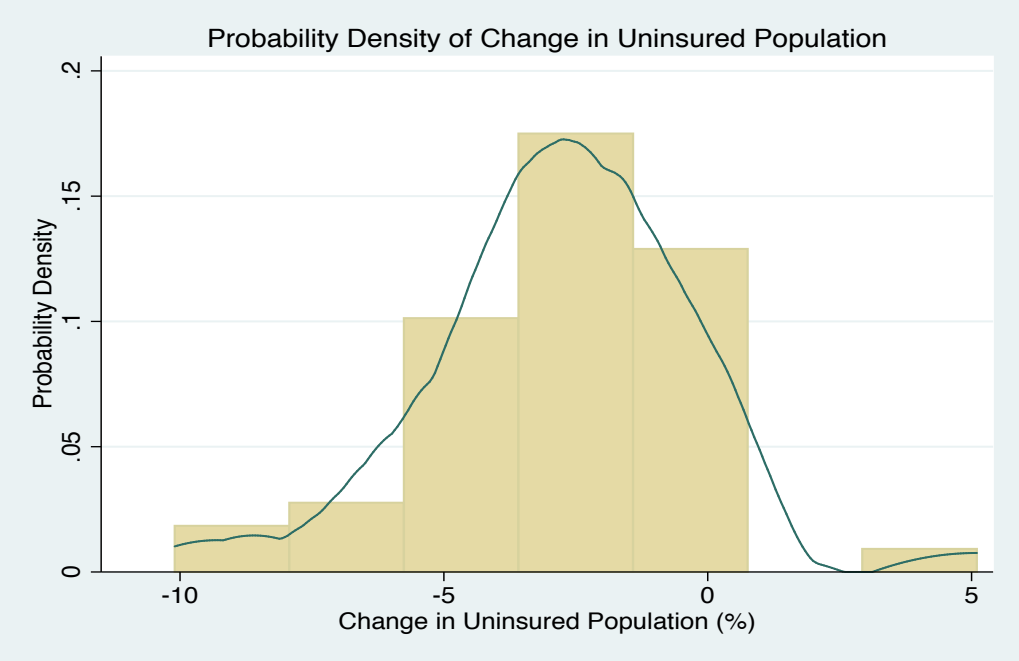
While the variables for state government actions represent the key independent variables in this analysis, effectiveness is the dependent variable. On the surface, effectiveness can be defined in several different ways. For this analysis, the concept of effectiveness of the ACA is defined as the extent to which states exhibit the law's intended effects. The law's intended effects, as described by the White House website, are "better access to care, more affordable coverage, stronger rights and protections, and stronger Medicare." (Obama 2014, 1) The last two mentioned goals, "stronger rights and protections" and "stronger Medicare", are not included in my analysis. These goals deal with insurance rights that are written into federal law, and are not affected by state government actions. Instead, I focus on measuring the first two goals.

V. Goal 1: "Better Access to Care"

i. Specific Research Design

Dependent Variable: Change in Uninsured Population

Figure 2 *(Source: Gallup-Healthways Well-Being Index, 2014)*

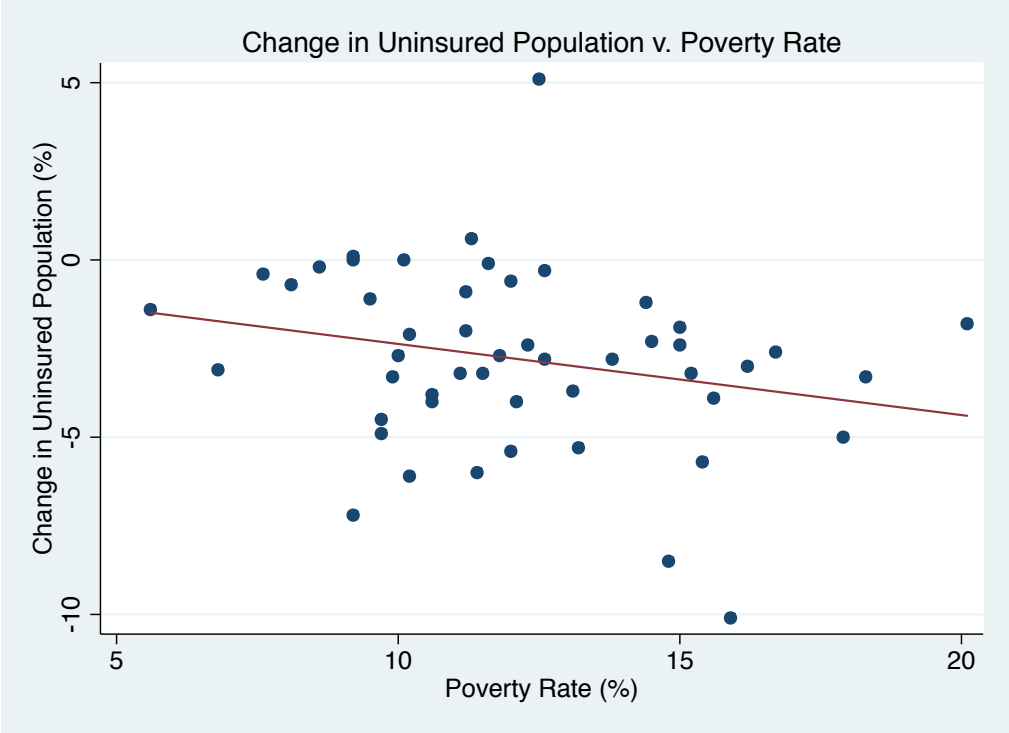


The first of the two goals is "better access to care." This goal basically addresses the number of people that have the ability to obtain health care in each state. In my analysis, this concept is operationalized by the percentage point difference in insured persons in each state before and after the first Affordable Care Act enrollment period. The Gallup-Healthways Well-Being Index (2014) released a report on the percentage of people insured in each state before and after the first enrollment period, along with the difference between the two values. It is important to note that the negative values in this report indicate a drop in the uninsured population, and therefore, a positive impact of the law. The orientation of this variable is important during the analysis section of this thesis. The Gallup-Healthways Well-Being Index (2014) provides a

perfect set of values that I use to measure "better access to care" in each state. The probability density of this variable is presented in figure two.

Control Variables: Poverty, Political Party, Managed Care Penetration, Minority Population

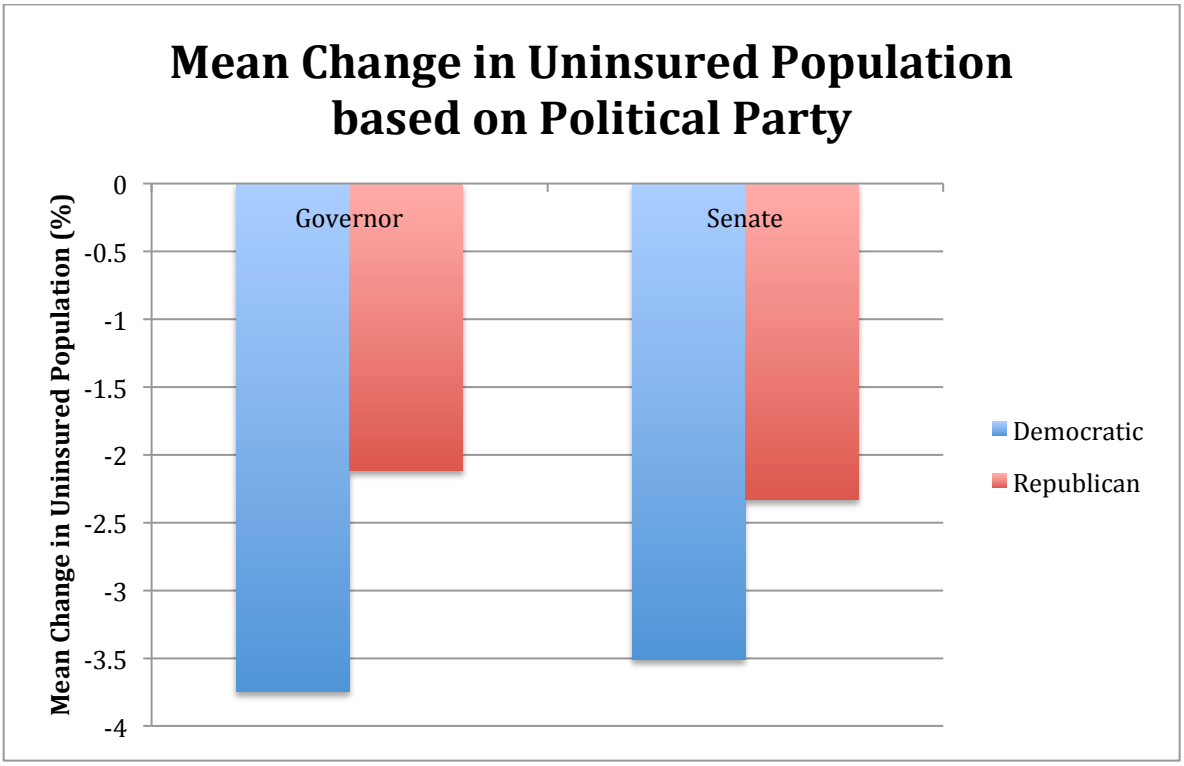
Figure 3 *(Sources: Gallup-Healthways Well-Being Index, 2014 and U.S. Census Bureau, 2010)*



Along with the key dependent and independent variables in this analysis, I include several control variables. These variables are carefully selected due to their perceived impact on access to care. The first variable I have selected is the poverty rate of each state. As I mentioned in the theory section, this variable is important to consider because it affects the number of citizens who originally had access to health care, as well as the number of citizens who could enroll in it after the new subsidies were enacted. The more impoverished citizens that a state has, the more subsidies available for its citizens to enroll in health care. Aside from this dynamic, the

poverty rate may also have an effect on the cost of health care. If the citizens of a state are too poor to afford health insurance, insurers may be incentivized to lower the costs and sell to more people. The data for this variable comes from the United States Census Bureau (2010). The correlation coefficient between poverty rate and change in uninsured population shows a weakly inverse relationship between the two variables (r = -0.2408, sig = 0.0921). As the poverty rate of a state increases, the percent change in uninsured population from 2013 to 2014 tends to decrease. A scatter plot of the data is presented in figure three.

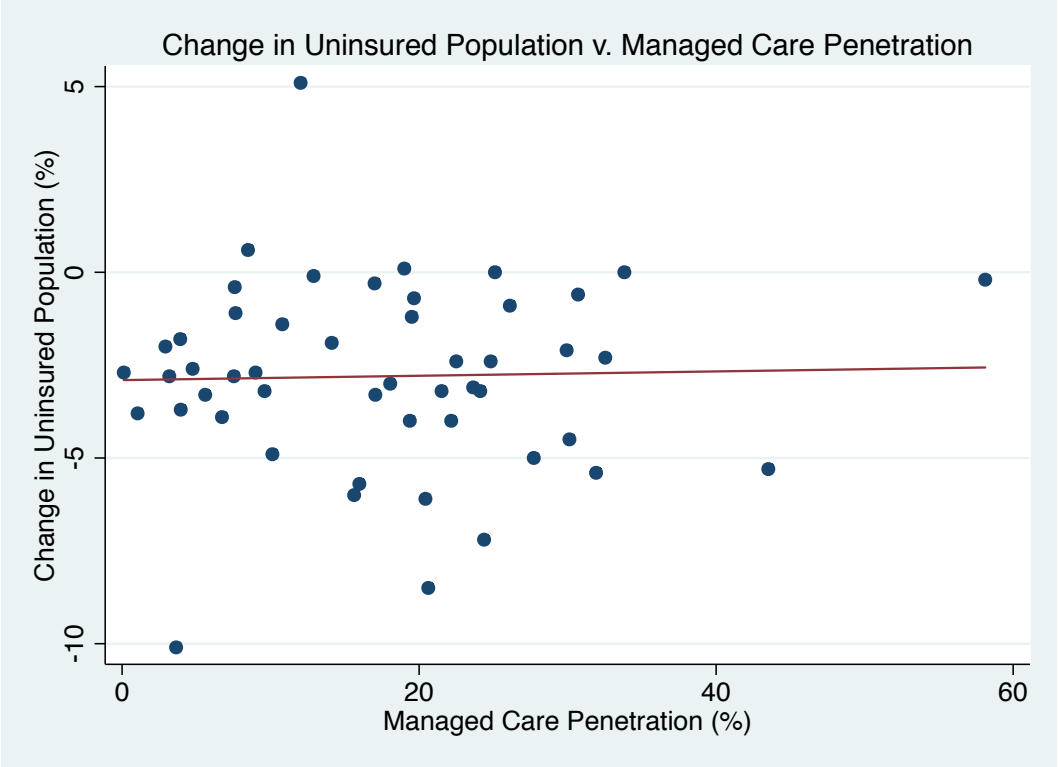
Figure 4 *(Sources: Gallup-Healthways Well-Being Index and Kaiser Family Foundation, 2014)*



As mentioned in the Theory section, it is also important to have control variables for the political party control in each state. In this case, I use dummy variables for the party of the Governor and Senate. The mean changes in uninsured population are presented in the figure four

bar graph. This graph indicates that the uninsured population decreased more in Democratic-controlled states than Republican-controlled states. The data for these variables (as presented in figure four), comes from the Kaiser Family Foundation (2014).

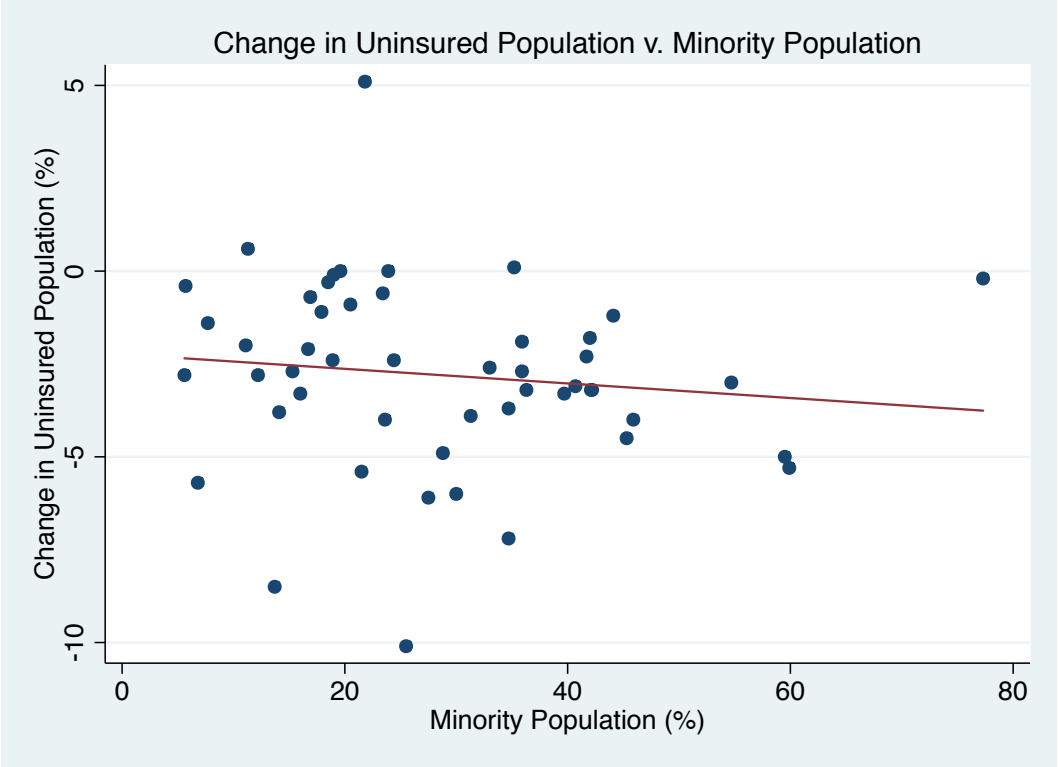
Figure 5 *(Sources: Gallup-Healthways Well-Being Index and Kaiser Family Foundation, 2014)*



As I mentioned in the Theory section, it is also important to control for the structure of care delivery within a state. In order to control for structure of care delivery, I use the managed care penetration of a state. The managed care (HMO) penetration rate is defined as, "the percentage of business that an HMO is able to capture in a particular subscriber group or in the market as a whole" (Patient-Physician Network 2014, 1). The level of access to care, as well as the cost of care, often hinge on the type of insurance provided in the area (with managed care

being cheaper and easier to access typically). The HMO penetration of an area provides a perfect measure to analyze the structure of care delivery. The data for this variable comes from the Kaiser Family Foundation (2014). The correlation coefficient between the managed care penetration rate and the change in uninsured population illustrates a weakly positive relationship between HMO penetration and the change in the uninsured population (r = 0.0269, sig = 0.8529). As the HMO penetration rate of a state increases, the percent change in uninsured population from 2013 to 2014 tends to increase. A scatter plot of the data is presented in figure five.

Figure 6 *(Sources: Gallup-Healthways Well-Being Index, 2014 and U.S. Census Bureau, 2010)*



Lastly, I also include a variable for the racial differences between states in my model. As I mentioned in the Theory section, different racial groups often face barriers to accessing health care. I control for the percentage of racial minorities in a state in order to account for these

barriers. This variable is measured using the percentage of minorities in each state. The data for this variable comes from the United States Census Bureau (2011). The correlation between the percentage of minorities in a state and the percentage change in the uninsured population is weakly negative (r = -0.120, sig = 0.4066). This indicates that states with a greater percentage of minorities tended to experience a greater reduction in their uninsured population. A scatter plot of the data is presented in figure six.

Summary Statistics

Table 1 *(Sources: Gallup-Healthways Well-Being Index, 2014; Kaiser Family Foundation, 2013-14; U.S. Census Bureau, 2010)*

Variable	**Mean**	**Standard Deviation**
Change in Uninsured	-2.800	2.535
Exchange Type	0.460	0.503
Medicaid Expansion	0.480	0.505
Poverty Rate	12.142	3.044
Governor's Party	0.420	0.500
Senate Party Control	0.400	0.495
HMO Penetration	17.613	11.677
Minority Percentage	28.600	15.480

The relevant summary statistics for my choice variables are presented in table one. From these statistics, I notice several important trends in the data. First, the mean values for exchange type and Medicaid expansion are .46 and .48. These values, which represent the percentage of

states that acted on the Affordable Care Act, match up with the values presented in figure one. These numbers appear to correlate well with the values for governor's party and senate party control. At means of .42 and .40, these numbers represent the percentage of governorships and senate chambers held by democrats. The numbers for poverty (12.14), HMO penetration (17.61), and minority percentage (28.60) all represent the average percentage values for these characteristics in each state. The standard deviation values for each of the variables are not incredibly significant. However, it is important to note that the standard deviation in poverty rate (3.04) is much smaller than the standard deviation in HMO penetration (11.68) and minority percentage (15.48). While these statistics do not describe much on their own, they are important to keep in mind throughout the analysis.

ii. Data Analysis: OLS Regression

The analysis of goal one requires the before and after estimates of several different metrics. In order to analyze the ACA's effectiveness in each grouping of states, I use regression analysis. Specifically, I use an ordinary least squares (OLS) regression. For the goal of "better access to care," I regress the change in uninsured population on the model that I outlined in the Research Design section. My null hypothesis is that the type of exchange that a state opted for has no effect on the percentage point change in enrolled population. My alternative hypothesis is that exchange type has a significant effect on enrolled population. In this section, positive coefficients are interpreted as a rise in uninsured population and negative coefficients are interpreted as a decline in uninsured population. This implies that a positive result is represented by a negative regression coefficient. The concept of "better access to care" implies that the law should have caused a significant drop in the uninsured population.

Table 2: "Better Access to Care" OLS Model

OLS Regression (Dependent Variable: Percentage Point Change in Uninsured Population)			
Variable	**Coefficient**	**Standard Error**	**P-Value (*Sig)**
Exchange Type	-1.192	0.873	0.179
Medicaid Expansion	-1.953	0.671	0.006*
Poverty Rate	-0.261	0.102	0.014*
Governor's Party	-0.899	0.847	0.295
Senate Party Control	0.729	1.109	0.515
HMO Penetration	0.056	0.031	0.077
Minority Percentage	-0.023	0.023	0.335
Coefficient	1.610	1.400	0.257
N = 50, Prob > F = 0.003, R-Squared = 0.3815, Adjusted R-Squared = 0.2784			

**Represents .05 significance level; two-tailed test*

First, I analyze the goal of "better access to care" using an OLS regression. The results are presented above. Most notably, the variable for Medicaid expansion is significant at the 95% confidence level. This leads me to reject the null hypothesis that, when controlling for other relevant variables, Medicaid expansion has no effect on the change in uninsured population in each state. This indicates that my findings support the hypothesis that Medicaid expansion has an effect on the change in uninsured population while controlling for all other factors. Specifically, the coefficient on this variable indicates a reduction of approximately 1.19% more of the uninsured population in states that decided to expand Medicaid. Conversely, states that did not elect to expand Medicaid can expect to have approximately 1.19% more uninsured citizens than

states who did expand, controlling for other relevant factors. The complete results of the regression are shown in table two.

It is also important to note that the variable for exchange type is not significant at the 95% confidence level. This finding leads me to fail to reject the hypothesis that, controlling for other factors, the type of exchange that a state opted for has no effect on the change in uninsured population. While the coefficient is negative, indicating that the state's decision to act on exchange creation tended to cause a decrease in the uninsured population, this variable is not significant. Therefore, I do not conclude that the type of exchange has an effect on the uninsured population.

As for the control variables, only poverty rate is significant at the 95% confidence level. This variable is "poverty level", which indicates the percentage of citizens below the poverty line in each state. In this case, I reject the hypothesis that the poverty level of a state has no effect on the percentage change in uninsured citizens, controlling for all other relevant factors. Alternatively, my findings support that the more impoverished citizens that a state has, the greater the reduction in uninsured population that occurred during the first enrollment period. Specifically, the coefficient indicates that a one percent increase in the impoverished population causes a 0.26% reduction in the uninsured population of a state.

Table 3: "Better Access to Care" OLS Hypothesis Test

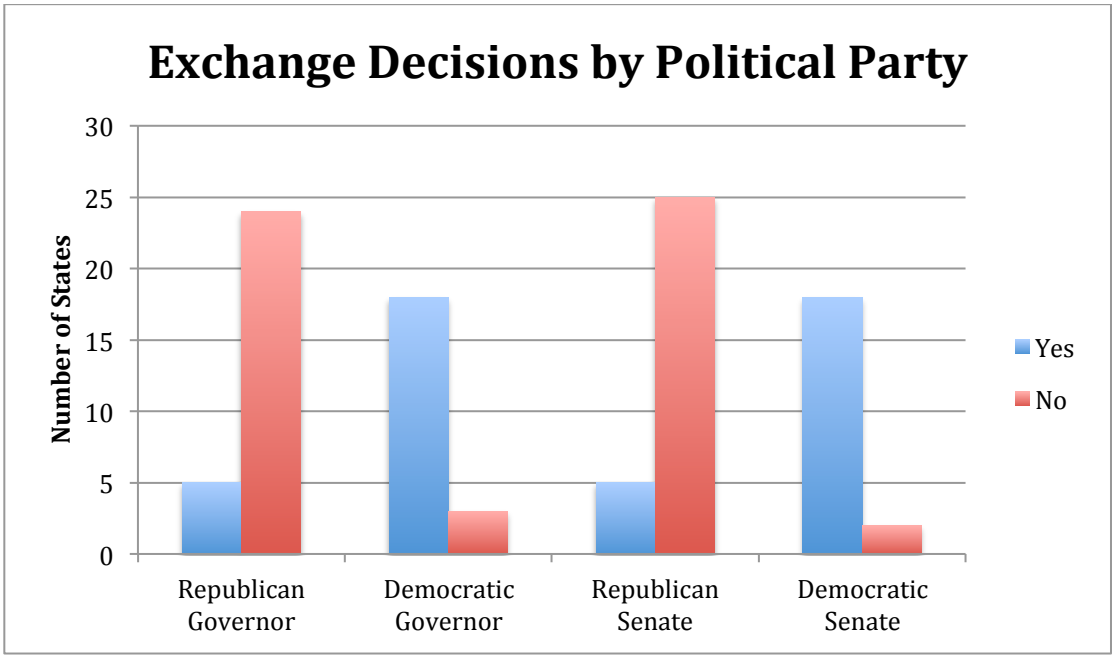
Joint Significance Test	
Variables	**P-Value (*Sig)**
Exchange Type, Medicaid Expansion	0.016*

**Represents .05 significance level; two-tailed test*

Because my hypothesis directly mentions the impact of state government actions, it is important to quantitatively test whether or not they have a significant impact on the uninsured population. I use a joint significance test to directly evaluate this hypothesis. The results of the test illustrate that the type of exchange and Medicaid expansion are jointly significant at the 95% confidence level. This leads me to reject the hypothesis that, when controlling for other factors, exchange type and Medicaid expansion have no effect on the change in uninsured population. Specifically, as I have discussed, the coefficients on these two variables illustrate their marginal effects on the uninsured population. This conclusion, as well as the magnitude of the coefficient, lends support to my initial hypothesis.

iii. Data Analysis: IV Regression

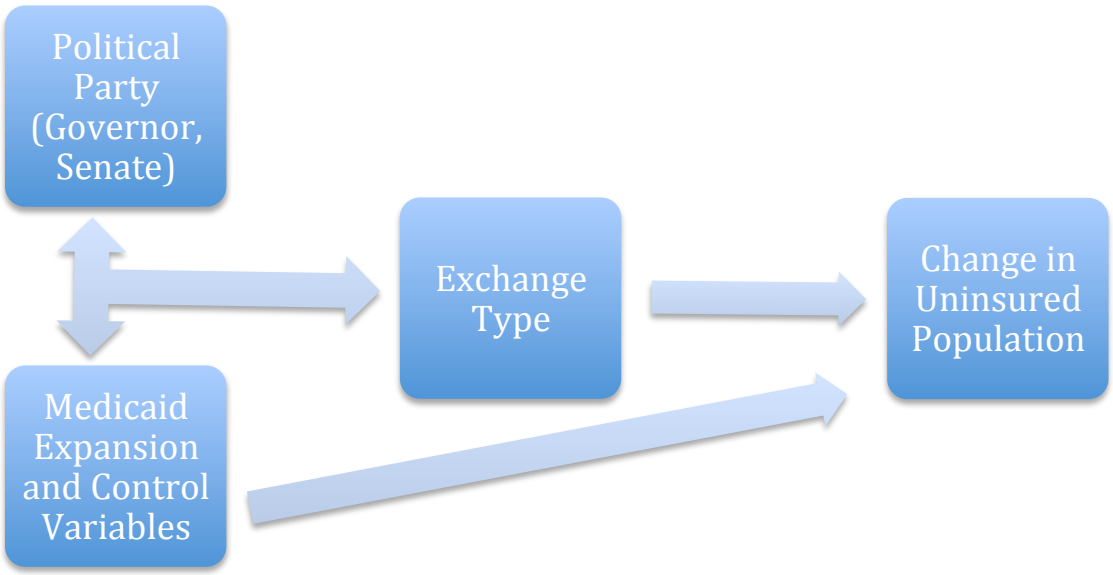
Figure 7 *(Source: Kaiser Family Foundation, 2014)*



After completing this initial regression, I wondered about the exogeneity of my key independent variable. One of the key conditions for OLS regression is that the independent variables in a model must be randomly determined. In this case, I believe that the variable for exchange type may not be randomly determined. This is due to the importance of the political party of a state in selecting an exchange type. Rather than the exchange type of a state being randomly determined, the political party of the governor and senate in the state often determines the exchange type that it has. This relationship between the variables is presented in figure seven. As indicated by the graph, Republican governors and senators chose to create a state exchange 17.2 and 16.7 percent of the time, respectively. This greatly contrasts with Democratically controlled governorships and senate chambers, which chose to create a state exchange 85.7 and 90 percent of the time, respectively. Clearly, the decision to create a state exchange is not

randomly determined. There is a large relationship between the political control in a state and the exchange type that it chose to pursue. This relationship is furthered by the correlation coefficients between both the party of the governor and senate, and the type of exchange created. For the governorship, the correlation coefficient between political party and exchange type is .678 (sig. = .000). In the case of the senate, the correlation coefficient between political party and exchange type is even stronger at .721 (sig = .000). Based on these correlations, I have determined that the exchange type is endogenous. It is largely determined by the political party of the governor and senate.

Figure 8: Instrumental Variables Model



In order to address this problem of endogeneity, I propose an instrumental variables model as a viable alternative approach to OLS regression. While I do not discredit my initial OLS findings, I believe that it is important to present a different model that addresses the

potential problem of endogeneity. As I have mentioned before, the type of exchange that was chosen by a state government is often determined by its political party control. Because of the strong correlation between these two concepts, I propose using the two political party variables as instruments on the type of exchange. However, before using these variables as instruments, I must first make sure that they do not have their own unique effects on the dependent variable (change in uninsured population).

First, I look back at my OLS regression results. In this regression, both the governor and senate political party variables did not have a significant effect on the change in uninsured population. From these results, it appears that these variables do not greatly impact the change in uninsured population directly. After looking at these initial results, I also tabulated the correlations between the governor's party ($r = -.321$) and senate's party ($r = -.231$) and found that the political party variables were not strongly correlated with the change in uninsured population. Based on these two findings, as well as the strong correlations between political party and exchange type, I use the governor's party and senate's party as instruments for exchange type.

Table 4: "Better Access to Care" IV Model (First Stage)

IV Regression (Dependent Variable: Exchange Type)			
Variable	**Coefficient**	**Standard Error**	**P-Value (*Sig)**
Medicaid Expansion	0.307	0.124	0.017*
Poverty Rate	0.005	0.016	0.771
Governor's Party	0.314	0.111	0.007*
Senate Party Control	0.341	0.129	0.012*
HMO Penetration	0.003	0.005	0.536
Minority Percentage	-0.003	0.004	0.484
Coefficient	0.007	0.212	0.975
N = 50, F = 15.63, Prob > F = 0.000, R-Squared = 0.6857, Adjusted R-Squared = 0.6418			

**Represents .05 significance level; two-tailed test*

The first stage of the regression illustrates the reasoning behind using governor's party and senate party control as instruments. Along with Medicaid expansion, both the governor's party and senate party control are significant at the 95% confidence level. This indicates that they are effective instruments for determining the exchange type of a state. As I originally predicted, these two variables are the most important predictors of exchange type. The p-value of the entire model is also important to note in this situation. At .000, the p-value shows that our instruments are effective in predicting the outcome of exchange type. Based on these statistics in the first stage, the given instruments are excellent choices for the exchange type variable.

Table 5: "Better Access to Care" IV Model (Second Stage)

IV Regression (Dependent Variable: Percentage Point Change in Uninsured Population)			
Variable	**Coefficient**	**Standard Error**	**P-Value (*Sig)**
Exchange Type	-1.698	1.085	0.125
Medicaid Expansion	-1.637	0.930	0.085
Poverty Rate	-0.267	0.100	0.010*
HMO Penetration	0.056	0.032	0.074
Minority Percentage	-0.023	0.023	0.430
Coefficient	1.610	1.306	0.251
N = 50, F = 4.90, Prob > F = 0.012, R-Squared = 0.3567			

**Represents .05 significance level; two-tailed test*

The second (and final) stage of the regression reveals important new characteristics about the independent variables. When viewing the two choice variables, it is evident that neither is significant at the 95% confidence level. However, both exchange type (p = 0.125) and Medicaid expansion (p = 0.085) have very low p-values, and appear to contain joint significance. I test this significance later in the analysis. Based on the negative coefficients of these variables, it appears that their presence reduced the percentage of uninsured citizens within a state. As for the control variables, the only one that is significant at the 95% level is the poverty rate of a state. The coefficient on this variable is negative at -0.267. This indicates that the more impoverished a state is, the more likely its uninsured population dropped during the first enrollment period. The other control variables are not significant at the 95% level. However, the managed care penetration of a state seems to play a role in the model (p = .074). Ultimately, this model provides an excellent second look at the choice variables that I examine.

Table 6: "Better Access to Care" IV Hypothesis Test

Joint Significance Test	
Variables	**P-Value (*Sig)**
Exchange Type, Medicaid Expansion	0.001*

**Represents .05 significance level; two-tailed test*

As I already did in the OLS model, it is important to find the direct impact of state government actions on "better access to care." Once again, I use a joint significance test to determine whether or not exchange type and Medicaid expansion have a joint effect on the change in uninsured population. The results of the test illustrate that the type of exchange and Medicaid expansion are jointly significant at the 95% confidence level based on the instrumental variables model. This leads me to reject the hypothesis that, when controlling for other factors, exchange type and Medicaid expansion have no effect on the change in uninsured population. Specifically, the coefficients on these two variables (-1.698 for exchange type, -1.637 for Medicaid expansion) illustrate their marginal effects on the uninsured population. This conclusion, as well as the magnitude of the coefficient, lends support to my initial hypothesis.

iv. Results/Conclusion

This section includes two unique models to analyze the impact of state government actions on "better access to care". While each model presents slightly different numbers, they both contain very similar results. The OLS model isolates Medicaid expansion as the key factor in providing "better access to care". According to the model, states that expanded Medicaid saw a decrease in uninsured population of 1.95 percentage points more than states that chose not to expand Medicaid when controlling for other factors. The variable for exchange creation was not

statistically significant in this model, but it was significant when jointly tested with Medicaid expansion. For the instrumental variables model, neither Medicaid expansion nor exchange creation was statistically significant on its own. However, the joint significance test showed that the two state government actions are significant at the 99% confidence level. Both models lead me to conclude the following result.

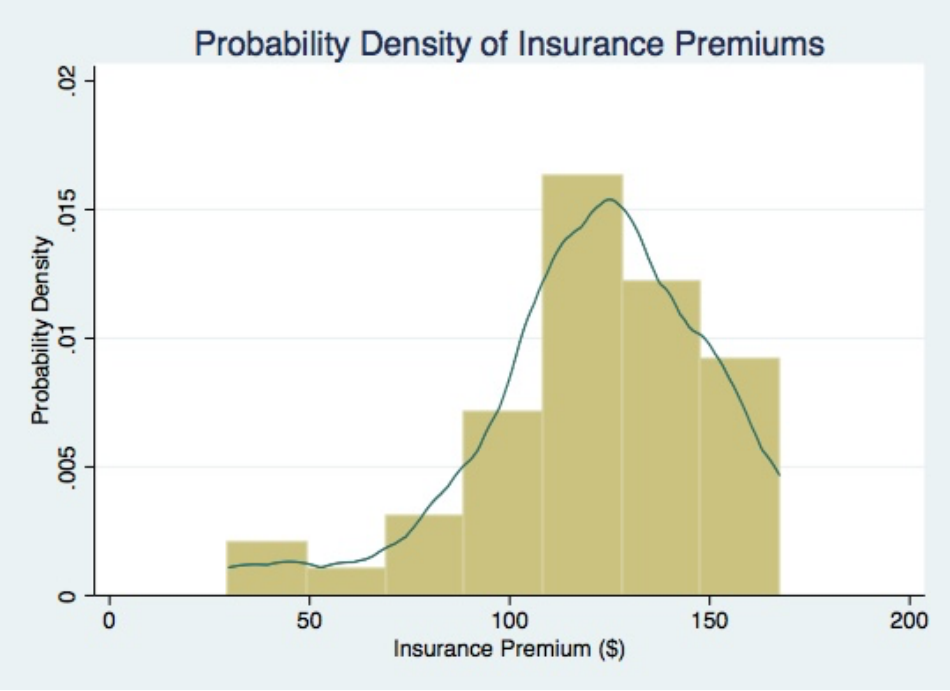
Result for Goal 1: In supporting the goal of "better access to care", I find that states that acted on exchange implementation or expansion of Medicaid are more likely to have positive results than those that did not. Specifically, states that expanded Medicaid were most likely to provide "better access to care" for citizens. However, there is considerable evidence that exchange creation also played an important role in the reduction of the uninsured population as well.

VI. Goal 2: "More Affordable Coverage"

i. Specific Research Design

Dependent Variable: Insurance Premium

Figure 9 *(Source: Kaiser Family Foundation, 2015)*



The last of the two goals that must be operationally defined is "more affordable coverage." To measure the effectiveness of the ACA on affordability, I do a state-by-state comparison of premium rates (with subsidies included) adjusted for cost of living for similar plans. It is important to note that this method is slightly different from the method that I use for "better access to care". Instead of doing a time comparison for each state's premium rate, I compare premium rates across states at a fixed time (2015). I selected this method because I did not have viable time-series data for premium rate. Using data from the Kaiser Family Foundation (2015), it is easy to compare premiums for individuals in similar situations. In this case, I use

data on the average price for a bronze plan after tax credits for a 40-year-old non-smoker in different cities. The specific cities and their individual pricing are presented in the appendix. I do not include them here for the sake of preserving space. It is important to note that there is exactly one city for all 50 states. I use the cost of living (Pay Scale 2015, 1) adjustment to observe the real cost of health care in each area instead of the less meaningful, nominal rate. The probability density of this variable is presented above in figure nine. It is slightly skewed left, but not enough to greatly alter the mean.

Control Variables: City Poverty, Managed Care Penetration, Minority Population

Table 7: Bivariate Correlations with Insurance Premium

Variable	**Correlation Coefficient**	**Significance**
City Poverty	0.208	0.147
HMO Penetration	-0.129	0.371
Minority Population	-0.301	0.034*

**Represents .05 significance level; two-tailed test*

For this model, I use the same control variables as I did for the first goal with some minor adjustments. I keep the model the same because it contains the most relevant predictors of the insurance market. Because the dependent variable that I use is for cities instead of states, I try to implement city-level data where available. Unfortunately, I was only able to find comprehensive, city-level data for poverty (Congressional Research Service 2013, 47), so the other variables remain unchanged. However, because most of the cities used in this set encompass the majority of the population in their respective states, I find it appropriate to still use state level data for the other variables. I also remove political party as an independent variable because of its lack of

relevance in determining cost. However, it is included as an instrumental variable in the instrumental variables model. The correlations for these variables with my independent variable are presented in table seven.

Summary Statistics

Table 8 *(Sources: Gallup-Healthways Well-Being Index, 2014; Kaiser Family Foundation, 2014 2015; U.S. Census Bureau, 2010; Congressional Research Service, 2013)*

Variable	**Mean**	**Standard Deviation**
Insurance Premium	120.765	29.197
Exchange Type	0.46	0.50
Medicaid Expansion	0.48	0.50
City Poverty Rate	14.074	3.163
Governor's Party	0.42	0.50
Senate Party Control	0.40	0.49
HMO Penetration	17.61	11.68
Minority Percentage	28.60	15.48

In table eight, I present the relevant summary statistics for the variables in my model for "more affordable coverage". Most of these variables are contained in my original discussion of the summary statistics for "better access to care", so I do not discuss them here. Instead, I focus on the two new variables for this section: insurance premium and city poverty rate. The mean for insurance rate is 120.765, indicating that the mean premium rate for my given insurance plan and demographic is $120.66 per month. The standard deviation, which is 29.197, provides a decent

idea of the dispersion of premium rates among different cities. As for the city poverty rate, the mean is at a value of 14.074%. This value is easily compared to the mean poverty rate by state, which is 12.142%. I expected that the city poverty rate mean would be slightly higher due to the large concentration of impoverished Americans in cities. The standard deviation of 3.163 indicates a moderate dispersion among city poverty values. While these summary statistics do not say much on their own, they are important to keep in mind for the next stage of the thesis.

ii. Data Analysis: OLS Regression

Table 9: "More Affordable Coverage" OLS Model

OLS Regression (Dependent Variable: Insurance Premium)			
Variable	**Coefficient**	**Standard Error**	**P-Value (*Sig)**
Exchange Type	-9.558	9.252	0.307
Medicaid Expansion	3.976	8.582	0.645
City Poverty Rate	2.969	2.094	0.163
HMO Penetration	0.297	0.497	0.553
Minority Percentage	-0.867	0.347	0.016*
Coefficient	101.047	29.471	0.001*
N = 50, Prob > F = 0.012, R-Squared = 0.2074			

**Represents .05 significance level; two-tailed test*

The OLS regression presents inconclusive results. Based on the p-values for exchange creation and Medicaid expansion, I cannot draw a conclusion about their individual effect on insurance premiums. At the 95% confidence level, I fail to reject that exchange creation has no

effect on insurance premiums. The same case is true for Medicaid expansion. At the 95% confidence level, I fail to reject that Medicaid expansion has no effect on insurance premiums.

Despite the lack of meaningful effect for my choice variables, one of my control variables is statistically significant. At the 95% confidence level, I reject the hypothesis that minority population has no effect on insurance premiums. Based on its coefficient, I conclude that an increased level of minorities in a city causes its insurance premiums to decrease. This finding provides some meaningful information about the insurance market, but it does not describe a meaningful relationship between state government actions and the goal of "more affordable coverage". In order to evaluate this relationship in a more complete manner, I turn to a joint significance test for my two choice variables.

Table 10: "More Affordable Coverage" OLS Hypothesis Test

Joint Significance Test	
Variables	**P-Value (*Sig)**
Exchange Type, Medicaid Expansion	0.575

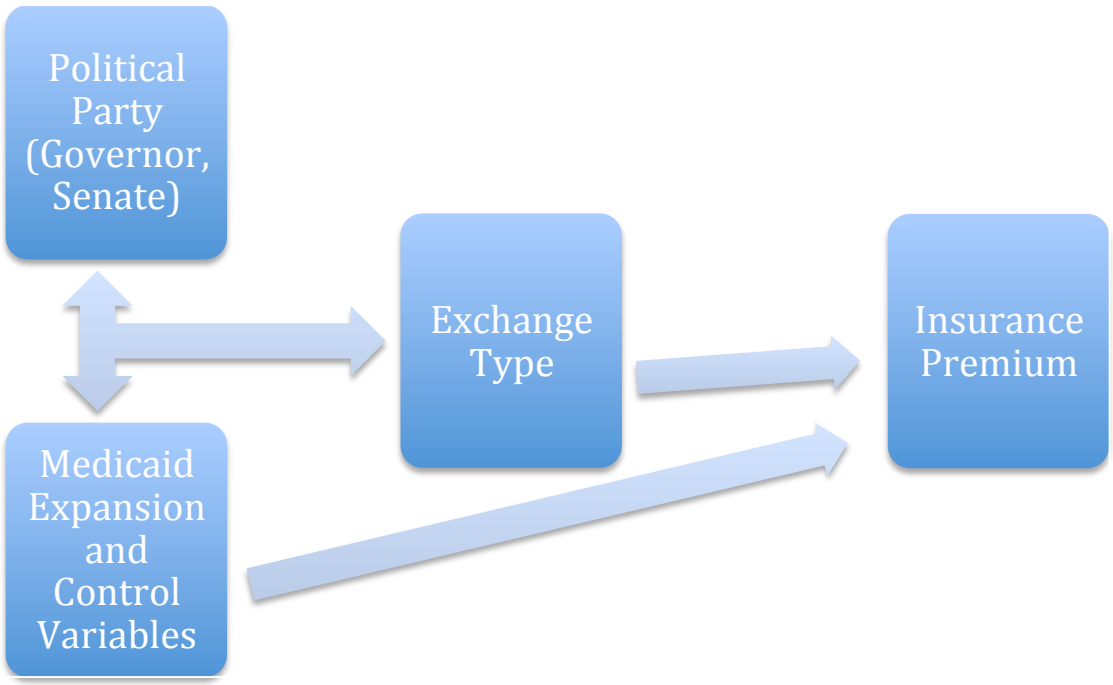
**Represents .05 significance level; two-tailed test*

In this case, the joint significance test is also inconclusive. At the 95% confidence level, I fail to reject the hypothesis that both exchange type and Medicaid expansion have no effect on insurance premiums. While these variables are not statistically significant, it is important to view their coefficients and evaluate them. This regression is especially notable because the two choice variables seem to work in opposite directions. Exchange type has a negative coefficient, indicating that states that chose a state exchange are more likely to have lower premiums. I expect this finding under the assumption that positive state government actions will cause

positive outcomes for the law. However, the coefficient for Medicaid expansion weakens support for this assumption. As shown in table nine, the coefficient for Medicaid expansion is positive. This indicates that states that chose to expand Medicaid tend to have higher insurance premiums. This coefficient is very notable because it represents a positive state government action resulting in a negative outcome. This phenomenon requires further analysis, which is done in the second model for "more affordable coverage". It is important to note that the coefficients for these two variables are to not be taken as completely relevant, as both variables are not statistically significant. However, they are important to observe as I move forward with further analysis.

iii. Data Analysis: IV Regression

Figure 10: Instrumental Variables Model



The same endogeneity problems exist for the goal of "more affordable coverage" as they did with "better access to care". Once again, the problems are with the choice variable of exchange type. The variable is not randomly assigned but rather highly correlated with the political party control of a state. For this reason, I use the same instrumental variables method for the goal of "more affordable coverage". As visually illustrated in figure 10, this model uses the political party of the governor and senate as instruments for exchange type. I hope to eliminate the problem of endogeneity by utilizing this model in this stage of the project.

Table 11: "More Affordable Coverage" IV Model (First Stage)

IV Regression (Dependent Variable: Exchange Type)			
Variable	**Coefficient**	**Standard Error**	**P-Value (*Sig)**
Medicaid Expansion	0.299	0.124	0.020*
City Poverty Rate	0.011	0.015	0.476
Governor's Party	0.327	0.112	0.006*
Senate Party Control	0.351	0.129	0.009*
HMO Penetration	0.003	0.005	0.576
Minority Percentage	-0.003	0.003	0.415
Coefficient	-0.078	0.219	0.721
N = 50, F = 15.68, Prob > F = 0.000, R-Squared = 0.6888, Adjusted R-Squared = 0.6454			

**Represents .05 significance level; two-tailed test*

Much like the IV regression for "better access to care", the first stage of the regression illustrates the reasoning behind using governor's party and senate party control as instruments. The estimates are very similar to the first goal, as only the poverty rate variable is altered to reflect city-level data instead of state-level. Along with Medicaid expansion, both the governor's party and senate party control are significant at the 95% confidence level. This indicates that they are effective instruments for determining the exchange type of a state. The p-value of the entire model is also important to note in this situation. At .000, the p-value shows that our instruments are effective in predicting the outcome of exchange type. Based on these statistics in the first stage, the given instruments are excellent choices for the exchange type variable.

Table 12: "More Affordable Coverage" IV Model (Second Stage)

IV Regression (Dependent Variable: Insurance Premium)			
Variable	**Coefficient**	**Standard Error**	**P-Value (*Sig)**
Exchange Type	-40.287	18.858	0.038*
Medicaid Expansion	24.524	14.128	0.090
City Poverty Rate	2.666	2.195	0.231
HMO Penetration	0.521	0.563	0.360
Minority Percentage	-0.964	0.397	0.019*
Coefficient	108.412	30.747	0.001*
N = 50, Prob > F = 0.011, R-Squared = 0.079			

**Represents .05 significance level; two-tailed test*

The IV model presents several notable results. First, as with the OLS model, the minority percentage is significant at the 95% confidence level. At this level, I reject the hypothesis that the percentage of minority citizens in a state has no effect on city-level insurance premiums, controlling for all other factors. This result is consistent with the OLS model, so I generally expected it to occur. However, for the first time in this analysis, this regression presents a new result that is not present in the OLS model. According to the IV model, at the 95% confidence level, I reject the hypothesis that exchange type has no effect on city-level insurance premiums. The coefficient on this variable indicates that states that chose a state marketplace can expect to have $40.29 less in insurance premium rates than those that opted for a federal exchange.

This significant result represents a potentially important finding in relation to state government actions and ACA implementation. However, it must not be taken as a complete and

certain result for two main reasons. The first reason deals with the fact that it contrasts with the OLS regression results. In the initial regression that I use for "more affordable care", the exchange type variable does not approach significance. It exhibits a p-value of 0.307, indicating that exchange type is not a significant factor in determining insurance premium rates. Because of this insignificance, I do not consider the significant finding for the IV regression to be certain.

Secondly, I do not consider the IV finding to be completely legitimate because of the coefficient for Medicaid expansion. Throughout this process, one of my key assumptions has been that positive state government actions are not detrimental to the implementation of the Affordable Care Act. However, the coefficient for Medicaid expansion presents a positive state government actions resulting in a negative outcome for "more affordable coverage". While I do not reject the hypothesis that Medicaid expansion has no effect on insurance premiums, it is still important to recognize that this variable has a negative coefficient. If state government actions truly have an impact on "more affordable coverage", I expect that positive actions will result in positive results. Next, I turn to the joint significance test as another way to test my choice variables.

Table 13: "More Affordable Coverage" IV Hypothesis Test

Joint Significance Test	
Variables	**P-Value (*Sig)**
Exchange Type, Medicaid Expansion	0.113

**Represents .05 significance level; two-tailed test*

The joint hypothesis test for my IV model exhibits the same results as my OLS model. At the 95% confidence level, I fail to reject the hypothesis that both exchange type and Medicaid

expansion have no effect on insurance premiums. I expected this result, due to the fact that the two variables work in opposite directions. In this case, the joint p-value is lower than each of the p-values for exchange type and Medicaid expansion as individual variables. This can be contributed to the different direction of their coefficients, as mentioned before. While the two variables are not jointly significant in either model, that does not render the result of this part of the investigation insignificant. I discuss the broader relevance of these findings in the succeeding Results/Conclusion section.

iv. Results/Conclusion

This section includes two unique models to analyze the impact of state government actions on "more affordable coverage". While each model is designed to present similar numbers, they contain different results. The OLS model does not isolate either state government action variable as the deciding factor in "more affordable coverage". The joint significance test is also inconclusive, and the variables for exchange type (negative) and Medicaid expansion (positive) actually work in opposite directions. For the instrumental variables model, I received slightly different results. In this model, both variables work in opposite directions again. This time, however, the exchange type is significant. The differing results in each model present problematic evidence for analyzing the exact effect of state government actions on "more affordable coverage". The results from both models lead me to the following result.

Result for Goal 2: In supporting the goal of "more affordable coverage", I find the exact effect to be inconclusive for states that acted on exchange implementation or expansion of Medicaid. The results are inconclusive for two main reasons: conflicting results in my two models, and the presence of considerable evidence that positive state government actions caused both positive and negative results for the goal of "more affordable coverage". Specifically, there is some support for the hypothesis that state exchange creation caused lower premium rates as indicated by the IV model (but not the OLS model). But, there is also some support that Medicaid expansion caused higher premium rates as indicated by the positive coefficients in both models. Due to these conflicting factors, I am unable to present a conclusive finding for "more affordable coverage". While I cannot be sure, this inconclusive finding could potentially indicate that insurance costs rely more on the private sector than government actions. The government can only control the structure of the market and encourage competition; it does not have much control over prices/costs.

VII. Conclusion

For this analysis, I execute every step of the research process in trying to find a solution to my initial research question. First, I introduce the reader to the topic and the relevant literature within this topic. Next, I provide a theoretical model and causal mechanism that underlines my theory on the topic. In this section, I also hypothesize about the impact of state government actions on the Affordable Care Act. My hypothesis is that in a comparison of states, those that set up Affordable Care Act exchanges and/or expanded Medicaid will be more likely to have positive results than those that did not. Conversely, those that did not set up Affordable Care Act exchanges and/or expanded Medicaid will be more likely to have negative results than those that did. I then present a research design that tests my hypothesis. This design focuses on two specific goals of the ACA: "better access to care" and "more affordable coverage". After explaining these goals, I execute two different empirical models for each goal. These models lead me to several conclusions.

In supporting the goal of "better access to care", I conclude that states that acted on exchange implementation or expansion of Medicaid are more likely to have positive results than those that did not. Specifically, states that expanded Medicaid were most likely to provide "better access to care" for citizens. In supporting the goal of "more affordable coverage", I find the exact effect to be inconclusive for states that acted on exchange implementation or expansion of Medicaid. The results are inconclusive for two main reasons: conflicting results in my two models, and the presence of considerable evidence that positive state government actions caused both positive and negative results for the goal of "more affordable coverage". Ultimately, I find hypothesis to be fully supported by my research. While some of the details are conflicting, there is no question that states that set up Affordable Care Act exchanges and/or expanded Medicaid

were more likely to have positive results than those that did not. Conversely, there is also no doubt that states that did not act on the law were more likely to encounter negative results.

My research presents a very important finding for the health care literature. However, it also expands beyond this narrow finding. More broadly, it illustrates an important concept for truly federal laws. When states are required to aid the implementation of a federal law, their cooperation is important for its success. If a state does not support a law, it can cause some truly devastating effects for the law's goals, as indicated by my findings. Despite these important findings, there is considerable room for other researchers to add to this study and investigate other important areas.

Specifically, I suggest three expansions/additions. First, it is important for other researchers that are investigating health care to try other independent variables that they find intriguing. While I believe my model to be an accurate predictor of the insurance industry, it is important for other researchers to use other models and come to alternative conclusions. I tested this model thoroughly and found it to be useful, but other researchers should be able to alter it. Another valuable extension involves more current data. My analysis mostly focuses on the first enrollment period and the statistics that stemmed from it. While this represents an important time for the ACA, it is just as important to study other enrollment periods and how the law develops over time. I would suggest that other researchers address this development in future studies. Lastly, I suggest that researchers explore other truly federal laws and how state government actions affect them. It would be valuable to have another study that describes this phenomenon. Ultimately, I have presented a comprehensive analysis of the interaction between state government actions and the Affordable Care Act that has broader implications for federalism. However, I am excited to view the new analyses that researchers conduct in the future.

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IX. Appendix

Cities/Premium Rates *(Sources: Kaiser Family Foundation, 2015; Pay Scale, 2015)*

City	Premium ($)	City	Premium
Birmingham, AL	160.00	Billings, MT	157.00
Anchorage, AK	29.82	Omaha, NE	137.70
Phoenix, AZ	159.80	Las Vegas, NV	132.44
Little Rock, AR	124.20	Manchester, NH	114.66
Los Angeles, CA	96.56	Newark, NJ	118.57
Denver, CO	123.25	Albuquerque, NM	154.00
Hartford, CT	83.62	New York, NY	61.91
Wilmington, DE	140.28	Charlotte, NC	119.70
Miami, FL	113.16	Fargo, ND	144.96
Atlanta, GA	149.73	Cleveland, OH	128.48
Honolulu, HI	75.79	Oklahoma City, OK	129.00
Boise, ID	160.55	Portland, OR	122.10
Chicago, IL	115.50	Philadelphia, PA	107.31
Indianapolis, IN	123.19	Providence, RI	93.98
Cedar Rapids, IA	112.52	Columbia, SC	134.90
Wichita, KS	131.67	Sioux Falls, SD	167.44
Louisville, KT	157.14	Nashville, TN	140.39
New Orleans, LA	98.58	Houston, TX	120.12
Portland, ME	122.18	Salt Lake City, UT	140.43
Baltimore, MD	105.41	Burlington, VT	100.32
Boston, MA	114.18	Richmond, VA	114.66
Detroit, MI	140.76	Seattle, WA	86.64
Minneapolis, MN	96.60	Huntington, WV	156.00
Jackson, MS	43.26	Milwaukee, WI	120.06
St. Louis, MO	120.00	Cheyenne, WY	137.75

All figures adjusted to cost of living for Birmingham, AL

Stata Log

```
. summ uninsure adjpremium exchange2 medicaid hmo poverty minority governor senate
citypoverty

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
    uninsure |         50        -2.8    2.534658      -10.1        5.1
  adjpremium |         50    120.7654    29.19706      29.82     167.44
   exchange2 |         50         .46    .5034574          0          1
    medicaid |         50         .48     .504672          0          1
         hmo |         50     17.6127    11.67668   .1153977    58.1212
-------------+---------------------------------------------------------
     poverty |         50      12.142    3.043567        5.6       20.1
    minority |         50        28.6    15.47961        5.6       77.3
    governor |         50         .42    .4985694          0          1
      senate |         50          .4    .4948717          0          1
 citypoverty |         50      14.074    3.163491        7.1         22

. reg uninsure exchange2 medicaid poverty governor senate hmo minority

      Source |       SS       df       MS              Number of obs =      50
-------------+------------------------------           F(  7,    42) =    3.70
       Model |  120.092967     7  17.1561381           Prob > F      =  0.0033
    Residual |  194.707036    42   4.6358818           R-squared     =  0.3815
-------------+------------------------------           Adj R-squared =  0.2784
       Total |  314.800003    49  6.42448985           Root MSE      =  2.1531

------------------------------------------------------------------------------
    uninsure |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   exchange2 |  -1.192329    1.08974    -1.09   0.280    -3.391514    1.006855
    medicaid |  -1.953262   .9462426    -2.06   0.045    -3.862857   -.0436673
     poverty |  -.2617139   .1146689    -2.28   0.028    -.4931252   -.0303026
    governor |  -.8991458   .8642203    -1.04   0.304    -2.643213    .8449214
      senate |   .7285455   .9970461     0.73   0.469    -1.283575    2.740666
         hmo |   .0561072   .0344683     1.63   0.111    -.0134527    .1256671
    minority |  -.0226535   .0257947    -0.88   0.385    -.0747093    .0294024
       _cons |   1.609679   1.514473     1.06   0.294    -1.446652     4.66601
------------------------------------------------------------------------------

. test exchange2 medicaid

 ( 1)  exchange2 = 0
 ( 2)  medicaid = 0

       F(  2,    42) =    4.03
            Prob > F =    0.0250
```

```
. reg uninsure exchange2 medicaid hmo poverty minority governor senate, robust

Linear regression                                       Number of obs =      50
                                                        F(  7,    42) =    3.83
                                                        Prob > F      =  0.0027
                                                        R-squared     =  0.3815
                                                        Root MSE      =  2.1531

------------------------------------------------------------------------------
             |               Robust
    uninsure |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   exchange2 |  -1.192329   .8726029    -1.37   0.179    -2.953313    .5686546
    medicaid |  -1.953262   .6716533    -2.91   0.006    -3.308714    -.597811
         hmo |   .0561072   .0309494     1.81   0.077    -.0063512    .1185657
     poverty |  -.2617139   .1020027    -2.57   0.014    -.4675636   -.0558642
    minority |  -.0226535    .023224    -0.98   0.335    -.0695214    .0242145
    governor |  -.8991458   .8473689    -1.06   0.295    -2.609206    .8109139
      senate |   .7285455    1.10891     0.66   0.515    -1.509325    2.966416
       _cons |   1.609679   1.400448     1.15   0.257    -1.216539    4.435898
------------------------------------------------------------------------------

. test exchange2 medicaid

 ( 1)  exchange2 = 0
 ( 2)  medicaid = 0

       F(  2,    42) =    4.57
            Prob > F =    0.0160

. ivreg uninsure hmo poverty minority medicaid (exchange2 = senate governor), first

First-stage regressions
-----------------------

      Source |       SS       df       MS              Number of obs =      50
-------------+------------------------------           F(  6,    43) =   15.63
       Model |    8.516208     6    1.419368           Prob > F      =  0.0000
    Residual |    3.903792    43  .090785861           R-squared     =  0.6857
-------------+------------------------------           Adj R-squared =  0.6418
       Total |       12.42    49  .253469388           Root MSE      =  .30131

------------------------------------------------------------------------------
   exchange2 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         hmo |   .0029953   .0048018     0.62   0.536    -.0066885    .0126791
     poverty |   .0047025   .0160308     0.29   0.771    -.0276267    .0370316
    minority |  -.0025323    .003589    -0.71   0.484    -.0097702    .0047056
    medicaid |   .3074187   .1238409     2.48   0.017     .0576697    .5571678
      senate |    .341004    .129474     2.63   0.012     .0798949    .6021131
    governor |   .3138171   .1110678     2.83   0.007     .0898276    .5378066
       _cons |   .0068061   .2119334     0.03   0.975    -.4205983    .4342105
------------------------------------------------------------------------------
```

```
Instrumental variables (2SLS) regression

      Source |       SS       df       MS              Number of obs =      50
-------------+------------------------------           F(  5,    44) =    4.68
       Model |  112.289579     5  22.4579159           Prob > F      =  0.0016
    Residual |  202.510423    44  4.60250962           R-squared     =  0.3567
-------------+------------------------------           Adj R-squared =  0.2836
       Total |  314.800003    49  6.42448985           Root MSE      =  2.1453

------------------------------------------------------------------------------
    uninsure |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   exchange2 |  -1.698271   1.607894    -1.06   0.297    -4.938768    1.542226
         hmo |   .0579727   .0353179     1.64   0.108    -.0132058    .1291511
     poverty |  -.2673532   .1125117    -2.38   0.022    -.4941057   -.0406007
    minority |  -.0184997   .0255918    -0.72   0.474    -.0700765    .0330772
    medicaid |  -1.636992   1.255038    -1.30   0.199    -4.166356    .8923711
       _cons |   1.521198    1.50989     1.01   0.319    -1.521785    4.564182
------------------------------------------------------------------------------
Instrumented:  exchange2
Instruments:   hmo poverty minority medicaid senate governor
------------------------------------------------------------------------------

. test exchange2 medicaid

 ( 1)  exchange2 = 0
 ( 2)  medicaid = 0

       F(  2,    44) =    9.54
            Prob > F =    0.0004


. ivreg uninsure hmo poverty minority medicaid (exchange2 = senate governor), first r
> obust

First-stage regressions
-----------------------

      Source |       SS       df       MS              Number of obs =      50
-------------+------------------------------           F(  6,    43) =   15.63
       Model |    8.516208     6    1.419368           Prob > F      =  0.0000
    Residual |    3.903792    43  .090785861           R-squared     =  0.6857
-------------+------------------------------           Adj R-squared =  0.6418
       Total |       12.42    49  .253469388           Root MSE      =  .30131

------------------------------------------------------------------------------
   exchange2 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         hmo |   .0029953   .0048018     0.62   0.536    -.0066885    .0126791
     poverty |   .0047025   .0160308     0.29   0.771    -.0276267    .0370316
    minority |  -.0025323    .003589    -0.71   0.484    -.0097702    .0047056
    medicaid |   .3074187   .1238409     2.48   0.017     .0576697    .5571678
      senate |    .341004    .129474     2.63   0.012     .0798949    .6021131
    governor |   .3138171   .1110678     2.83   0.007     .0898276    .5378066
       _cons |   .0068061   .2119334     0.03   0.975    -.4205983    .4342105
------------------------------------------------------------------------------
```

```
Instrumental variables (2SLS) regression              Number of obs =      50
                                                      F(  5,    44) =    4.90
                                                      Prob > F      =  0.0012
                                                      R-squared     =  0.3567
                                                      Root MSE      =  2.1453

------------------------------------------------------------------------------
             |               Robust
    uninsure |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   exchange2 |  -1.698271   1.084952    -1.57   0.125    -3.884847    .4883051
         hmo |   .0579727   .0316858     1.83   0.074    -.0058859    .1218312
     poverty |  -.2673532    .099859    -2.68   0.010    -.4686058   -.0661005
    minority |  -.0184997    .023219    -0.80   0.430    -.0652944    .0282951
    medicaid |  -1.636992   .9302148    -1.76   0.085    -3.511717    .2377324
       _cons |   1.521198   1.306421     1.16   0.251    -1.111721    4.154117
------------------------------------------------------------------------------
Instrumented:  exchange2
Instruments:   hmo poverty minority medicaid senate governor
------------------------------------------------------------------------------

. test exchange2 medicaid

 ( 1)  exchange2 = 0
 ( 2)  medicaid = 0

       F(  2,    44) =    8.47
            Prob > F =    0.0008

. reg adjpremium exchange2 medicaid hmo citypoverty minority, robust

Linear regression                                     Number of obs =      50
                                                      F(  5,    44) =    3.32
                                                      Prob > F      =  0.0124
                                                      R-squared     =  0.2074
                                                      Root MSE      =  27.431

------------------------------------------------------------------------------
             |               Robust
  adjpremium |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   exchange2 |  -9.558285   9.252162    -1.03   0.307    -28.20479    9.088222
    medicaid |   3.976169   8.582495     0.46   0.645    -13.32071    21.27305
         hmo |   .2969125   .4968983     0.60   0.553    -.7045202    1.298345
 citypoverty |   2.968666   2.094156     1.42   0.163    -1.251829     7.18916
    minority |   -.867255   .3474937    -2.50   0.016    -1.567583   -.1669273
       _cons |   101.0467   29.47135     3.43   0.001     41.65111    160.4423
------------------------------------------------------------------------------
```

```
. ivreg adjpremium medicaid hmo citypoverty minority (exchange2 = governor senate), r
> obust first

First-stage regressions
-----------------------

      Source |       SS       df       MS              Number of obs =      50
-------------+------------------------------           F(  6,    43) =   15.86
       Model |  8.55486879     6  1.42581147           Prob > F      =  0.0000
    Residual |  3.86513121    43  .089886772           R-squared     =  0.6888
-------------+------------------------------           Adj R-squared =  0.6454
       Total |       12.42    49  .253469388           Root MSE      =  .29981

------------------------------------------------------------------------------
   exchange2 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    medicaid |   .2988533   .1239154     2.41   0.020     .0489541    .5487524
         hmo |   .0026297   .0046633     0.56   0.576    -.0067747    .0120342
 citypoverty |   .0108693   .0151165     0.72   0.476     -.019616    .0413546
    minority |  -.0028492   .0034648    -0.82   0.415    -.0098366    .0041382
    governor |   .3266874   .1122318     2.91   0.006     .1003504    .5530245
      senate |   .3511059    .128919     2.72   0.009      .091116    .6110958
       _cons |   -.078905   .2193073    -0.36   0.721    -.5211803    .3633704
------------------------------------------------------------------------------


Instrumental variables (2SLS) regression              Number of obs =      50
                                                      F(  5,    44) =    3.38
                                                      Prob > F      =  0.0113
                                                      R-squared     =  0.0788
                                                      Root MSE      =  29.572

------------------------------------------------------------------------------
             |               Robust
  adjpremium |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   exchange2 |  -40.28728   18.85842    -2.14   0.038    -78.29392   -2.280631
    medicaid |    24.5239   14.12804     1.74   0.090    -3.949292     52.9971
         hmo |    .521014   .5632599     0.92   0.360    -.6141617     1.65619
 citypoverty |   2.666066   2.195291     1.21   0.231    -1.758253    7.090385
    minority |  -.9644907   .3966423    -2.43   0.019    -1.763871   -.1651107
       _cons |   108.4118   30.74665     3.53   0.001     46.44603    170.3776
------------------------------------------------------------------------------
Instrumented:  exchange2
Instruments:   medicaid hmo citypoverty minority governor senate
------------------------------------------------------------------------------
```