THE EFFECT OF STATE REGULATORY POLICY ON COMPETITION IN THE HEALTH INSURANCE EXCHANGES

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By

Olivia Hayden, B.A.

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Olivia Hayden, B.A.

Thesis Advisor: Yuriy Pylypchuk, Ph.D.

ABSTRACT

In 2017, insurer participation in the health insurance exchanges established by the Affordable Care Act dramatically decreased due to the exit of three major insurers: UnitedHealthcare, Aetna, and Humana. As competition in the exchanges decreased, millions of people were left with only one insurer offering plans in their state and average premiums increased substantially. This study analyzes the relationship between state insurance regulatory policy and insurer participation and how the type of insurer participating in a state's exchange can affect competition. The study finds that there is not a clear association between a state's regulatory environment and the level of competition in the exchanges, but the participation of Medicaid insurers and Consumer Operated and Oriented Plans (Co-ops) in state exchanges is associated with increased competition. Additionally, this study finds that the greater the market share of the largest insurer in an exchange, the less competition there will be in that marketplace. This study sheds light on why competition varies in different parts of the country and offers specific recommendations for policymakers to encourage insurer participation in states with limited competition, with the aim of giving consumers more choice and more affordable premiums.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

In 2016, three major insurance companies announced their exit from the vast majority of the health insurance exchanges established by the Affordable Care Act, dealing a major blow to competition in the new marketplaces. In the spring of 2016, UnitedHealthcare announced it was exiting 31 state exchanges after the 2016 enrollment period, electing to remain in only three marketplaces the following year. Later in 2016, Aetna and Humana also announced they were pulling out of a substantial portion of the health insurance marketplaces, citing heavy profit losses and an unexpectedly sicker customer base. The exit of these three major insurers significantly reduced competition in the health insurance marketplaces, decreasing the average number of insurers participating in an exchange from 10 to 6. In 2017, a third of all counties and five entire states only have one insurer participating in their marketplace. The rapid decrease in competition has left many health experts wondering if the health insurance exchanges can survive in the coming years without significant policy intervention from the states or the federal government. With the election of Donald Trump, the future of the Affordable Care Act and the health insurance exchange is even more uncertain. Nevertheless, private health insurance companies will likely remain the bedrock of the U.S. health insurance system for the near future. Therefore, it is critical that policymakers understand the factors that affect competition in the private health insurance market and why insurers enter and exit certain markets. An analysis of state regulatory policy and the type of insurers participating in each marketplace can provide critical insights to policymakers that can help us strengthen competition in the private health insurance market, regardless of the future of the Affordable Care Act.

This study identifies the effects of the following factors on competition in the state health insurance exchanges: 1) the market share of the largest insurer, 2) the presence of a Medicaid insurer or Consumer Operated and Oriented Plan (Co-op) in an exchange, and 3) a File and Use regulatory policy. It is anticipated that the higher the market share of the largest insurer in 2014, the less competition a state will see in its exchange over time. The study also hypothesizes that the presence of a Medicaid insurer or co-op over will increase competition in the marketplaces. Finally, the study posits that a state's choice to employ a File and Use regulatory policy will lead to more competition in an exchange. States can choose either a "Prior Approval" regulatory strategy that requires state officials to negotiate with insurers over proposed rate increases or a "File and Use" policy that simply requires insurers to submit rates to the state before they go into effect. This study theorizes that states that do not require insurers to negotiate over rate increases could be seen as more hospitable business environments for insurers since they would be allowed to raise rates as necessary to ensure financial solvency.

This study analyzes four years of data on insurer participation in the state exchanges and controls for state population, level of unemployment, percent of the population that is rural, the presence of consumer assistance programs to help consumers enroll in the exchanges, and the political party of the state legislature. The amount of rate review funding received form the federal government is also included as a control variable, as well as a state's exchange type and decision to expand Medicaid. The study employs a negative binomial regression to analyze the effect of the key variables on competition and controls for year fixed effects and regional fixed effects. While a state-level analysis using four years of data offers a limited number of observations for

statistical analysis, this study aims to explore high level trends at the state level that could influence an insurer's decision to participate in or avoid certain state marketplaces.

BACKGROUND

Competition in the individual market prior to the Affordable Care Act was limited. In 2010, the median market share of the largest insurer in a state was 54%, and 80% of the individual market in each state was enrolled with one of the three largest insurers in the state (Kaiser, 2011). Additionally, premiums rose at an average of 10% or more every year between 2008 and 2010 (Gruber, 2014). According to the Government Accountability Office (GAO), reasons behind the limited competition in the individual market include the increase in mergers of insurance companies in recent years, as well as the natural barriers to entry for new insurers who do not have the leverage to negotiate lower rates from providers (GAO, 2014). Furthermore, a large segment of the customers in the non-group market were effectively priced out of the insurance market due to pre-existing conditions, so the individual market was not an attractive market for insurers to target their business.

The Affordable Care Act enacted major reforms to the private health insurance market. Prior to the law, insurance companies in the individual market could deny or rescind coverage to customers based on health status. Insurers could also enact annual or lifetime limits on care and offer lean policies that only covered certain health care services. However, the 2010 health reform legislation required insurers to accept all customers who were able to purchase insurance regardless of pre-existing conditions and mandated that customers must be charged the same

rates regardless of health status. According to the new law, premiums could only vary based on age, geographic area, and tobacco usage. The law also mandated that insurers cover a list of Essential Health Benefits, which includes physician visits, inpatient and outpatient hospital care, prescription drugs, maternity and newborn care, and mental health and substance use disorder services. This mandate forced insurers to transform formerly skimpy plans into comprehensive insurance policies. These changes were popular with consumers, as they enabled individuals with pre-existing conditions who had previously been priced out of the market to finally be able to afford health insurance. However, the reforms were very expensive for insurers and significantly changed the way insurance companies did business and managed their risk pools.

Additionally, the Affordable Care Act enacted a Medical Loss Ratio (MLR) provision, which limited insurers to spending only 20% of premium revenue on administrative costs, with the remaining 80% required to be spent on medical expenditures or quality improvement. If an insurer in the health insurance exchange proposed a rate increase of over 10%, it had to be approved by the federal government and insurers were required to provide documentation to justify their proposed increase. However, the law left the states with considerable discretion over how to review rate increases and whether to adopt rigorous participation criteria or simply act as a clearinghouse and let insurers compete with each other on price and quality of services. The federal government provided $250 million in federal funding to states to improve their rate review processes, and nearly all states applied for and received this funding.

To entice insurers to go along with these new regulations, the legislation promised insurers more customers. The Affordable Care Act implemented a tax penalty on individuals who did not

purchase health insurance. This requirement brought millions of consumers into the market for private health insurance, with the potential to bring substantial profits to health insurers. While the vast majority of the population receives health insurance from their employer, millions of Americans do not have this option because they work in a small business, work part-time, or are self-employed. Millions more cannot afford insurance or chose not to purchase health insurance for other reasons. To make it easier for these individuals to find coverage, the Affordable Care Act established new health insurance marketplaces in every state to allow consumers to shop and purchase health insurance online. Subsidies are available for low-income individuals in order to help them afford their premiums. Federal funding is also available for insurers who end up enrolling more expensive beneficiaries in order to ease the transition for insurance companies who must now accept every customer regardless of health status.

Participation in the state exchanges is completely voluntary for insurers. Companies can choose to stay out of the state marketplaces, or only enter the states where they believe they can make a profit. In many states, the insurance exchange market is similar to what competition looked like in the individual market state prior to the Affordable Care Act. However, some insurers were concerned that only sick customers would sign up in the first few years and decided not to enter the exchanges. While some states have attracted a variety of insurers to sell policies in their marketplaces, other states have struggled to attract more than one or two insurers. The vast majority of states have under 5 insurers, as detailed in Figure 1 below.

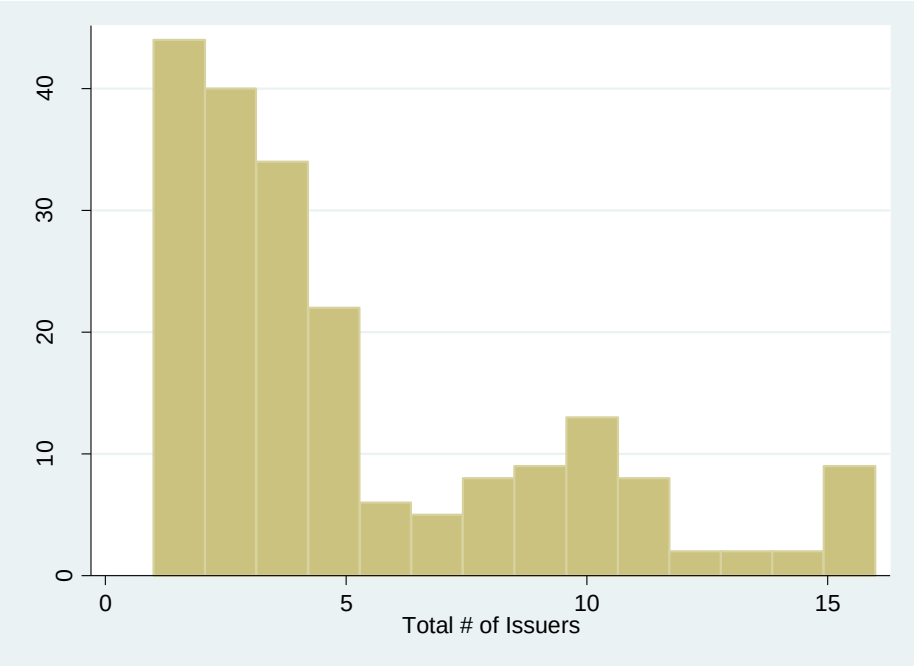

***Figure 1**: **Total Number of Issuers**: The majority of states have under 5 insurers over the 2014-2017 time period, but some states had 10-16 insurers.*

On the whole, insurers participating in the exchanges have come to realize that a substantial portion of the population enrolling in the exchanges is sicker than the average pre-ACA customer. Consequently, insurers lose profit by taking on these customers. Federal funding to help insurers afford to serve this costly population has not been renewed by Congress, increasing the toll on insurers. Additionally, many pre-ACA health insurance policies were granted grandfathered status and will be phased out gradually, delaying an influx of healthy consumers into the health insurance exchange risk pools. In the meantime, insurers are forced to take on sicker customers, resulting in significant financial losses for some of these companies.

In order to remain in business, many insurers have requested double-digit rate increases during the 2016 and 2017 enrollment periods in order to cover the unexpected costs associated with this

sicker clientele. Some insurers have realized they cannot effectively serve low-income populations. For example, UnitedHealthcare primarily operates in the employee health market and has limited experience in the individual market, let alone experience serving a sicker and costlier population. This fact led the company to exit the majority of the marketplaces in 2016. Alternately, health insurance companies with experience providing for Medicaid populations, including Centene and Molina, are earning profits from their participation in the exchanges because their business model is set up to care for sicker populations. In fact, many customers churn in and out of Medicaid every year in response to changes in their income or employment, so Medicaid insurers are simply enlarging their market to keep their customers. While all of the insurers participating in the exchanges are trying to adapt to their new customers by establishing narrow provider networks and better managing care, some companies have concluded that exiting the majority of the exchanges is the best option for their company.

Competition in the exchanges is important because it is heavily correlated with premiums, a harbinger of the affordability of coverage for uninsured Americans. Copious amounts of research and literature have linked competition and price, showing that a decrease in competition is associated with a rise in premium price, and this relationship holds true in the health insurance marketplaces, as will be detailed in the following Literature Review section. When just one insurance company offers coverage in a state, that company is not incentivized to negotiate better prices with providers in order to compete for customers. In fact, the incentive is do just the opposite and raise prices, as the customers have nowhere else to go. Following the exit of Aetna, Humana, and UnitedHealthcare, average premiums in the health insurance marketplaces

increased by 22% from 2016 to 2017 (Office of the Assistant Secretary for Planning and Evaluation , 2016). The map below details current marketplace competition levels.

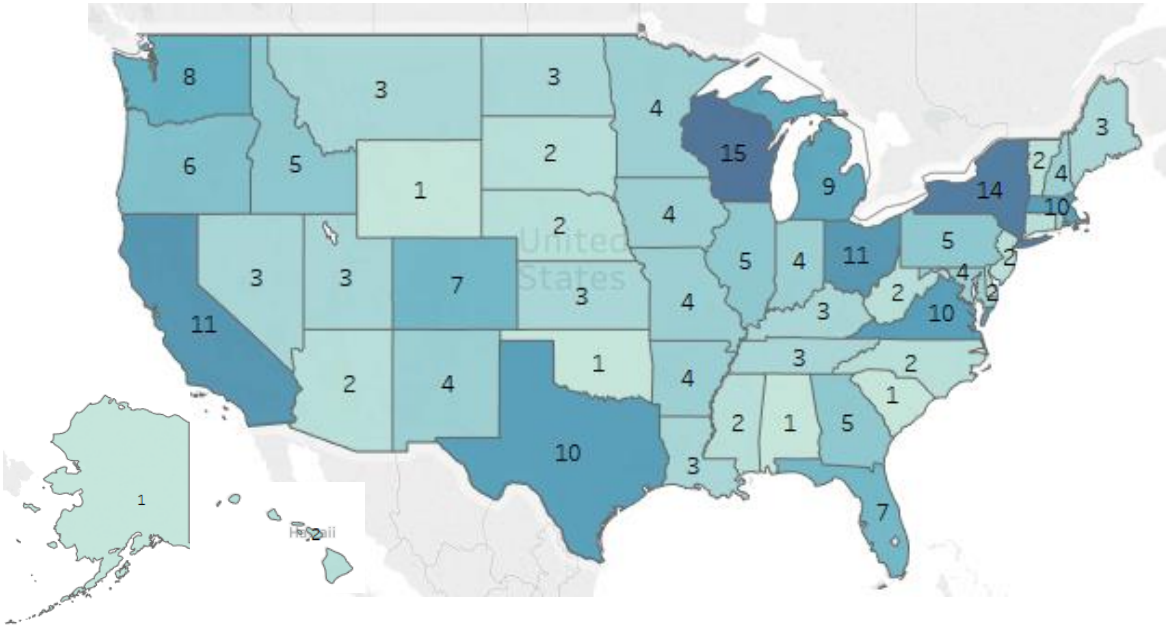

***Figure 2**: **Competition Heat Map**: This map depicts the number of total insurers in each state exchange in 2017.*

LITERATURE REVIEW

Since the health insurance exchanges went live in 2013, there have been numerous studies on premiums and competition in the marketplaces. In December 2015, the RAND Corporation and the Brookings Institution partnered on a study for the Office of the Assistant Secretary for Planning and Evaluation of the Department of Health and Human Services (ASPE) to explore competition in the health insurance marketplaces in six states where competition was deemed insufficient (Morrisey et al., 2015). Specifically, the study explored health insurance competition in Alaska, Florida, Kansas, North Carolina, Ohio, and Texas. These states were selected because they exhibited at least one of the following characteristics: limited insurer competition in the

marketplace, high premiums, low enrollment, or lack of consumer education and limited state marketing. All six states relied on the federally-facilitated marketplaces set up by the government. Instead of a statistical analysis, the study was conducted via field research and interviews to gather descriptive and qualitative data that could measure the idiosyncrasies of each state's marketplace and the myriad factors that affect health care competition.

The study found that a major factor dampening market competition had to do with lack of consumer education. The absence of state marketing efforts hurts market competition by limiting enrollment and thus not attracting new insurers to compete in the marketplaces. Population size and density entice insurers into participating in the marketplaces, with lots of insurer competition in population hubs, like Miami. Interestingly, the authors theorized that competition in dense urban areas could spill over to more rural areas surrounding a population hub if insurers are able to create networks in those regions, which could increase competition in rural areas. The study also found that states were successful at keeping premium costs down when insurers had the power to create affordable networks, which is unlikely in rural areas with only one or two provider systems. Furthermore, the study found that it is difficult for smaller insurers to be able to compete with dominant insurers who already have an established network in a certain area. However, in Texas and North Carolina, smaller insurance companies were able to take away market share from larger companies by partnering with local health systems and agreeing on co-branding arrangements or entering into risk-sharing agreements with local providers. This last finding could have substantial implications for competition in the marketplaces if more states adopt this procedure.

The majority of statistical studies prove that having more insurers in a marketplace is negatively correlated with an increase in premiums. In 2014, the Office of the Assistant Secretary for Planning and Evaluation (ASPE) in the U.S. Department of Health and Human Services (HHS) conducted a study on the qualified health plans available in 2013 in the 36 states operating a federally-facilitated exchange, as well as the 11 states operating their own exchanges (ASPE, 2013). The study showed that states with lower average premiums have a higher number of insurers participating in their exchanges. In a ranking of average premiums, states in the lowest quartile were found to have an average of 8 insurers participating in their marketplace while states in the highest quartile had an average of 3 insurers participating in the exchanges. This study supports the general assumption that more competition generates lower premiums.

Another recent study found a negative correlation between the number of insurance companies participating in an exchange and premium growth. In a 2015 study, Dafny and his colleagues analyzed the effect of insurer participation in the health insurance marketplaces on premiums in the federally-facilitated health insurance marketplaces (Dafney, 2015). Specifically, the authors analyzed what premiums would have been if UnitedHealthcare had not decided to exit the markets using 2011 insurer market shares in the state individual markets. The study also investigated what premiums would have been if all the insurers that were operating in each state's individual market prior to the establishment of the exchanges had elected to participate in the marketplaces. Dafney and his colleagues found that if UnitedHealthcare would have remained in the marketplaces where they were competing in 2011, the average second-lowest silver premium would have been reduced by 5.4%. Similarly, if all insurers agreed to participate in the marketplaces, premiums would have been 11.1% lower. These findings affirm that more

insurer participation leads to lower premiums in the health insurance exchanges. The study also shows that health insurance marketplaces are similar to the large group market when it comes to the effect of insurer participation on insurance premiums.

In regard to the dramatic drop in competition in 2017, several studies have recently been published that attempt to explain high premium increases. In May 2016, the Urban Institute published a study on premium increases in the 2016 individual market (Blumberg, 2016). The authors assert that a nationwide average premium increase is less significant than understanding the characteristics of local markets with higher and lower premiums. There is tremendous variation in premiums and rate increases among states. For example, in 2017, the average premium rate increase requested in Oklahoma was 41.8% while Indiana had an average rate *decrease* of 12%. This study looked at several factors that affect premiums, including state population, the number of insurers participating in the exchanges in 2015, the type of insurer (national insurer, Medicaid, co-op, regional), and the change in the number of insurers from 2015-2016. The study confirmed that competition limited premiums and showed that states where Blue Cross Blue Shield participates tend to have higher premiums while states with a Medicaid insurer participating in the exchange tend to have lower premiums. The study also noted a regression towards the mean, referring to the fact that states with higher premiums in 2014 and 2015 had lower premium growth in 2016. Insurance companies try to base their rates on expected claims for the coming year, and some insurers in states like Arizona that priced their premiums too low in 2014 now have significantly increased their premiums. In other states like Indiana, insurers overpriced their plans in 2014 and later dropped their rates in order to gain

customers. This gradual regression to the mean will likely continue as markets adjust their business model to fit their customer base.

Another major factor that affects both premiums and competition has to do with state regulation of insurance companies. As previously mentioned, some states go through a negotiation process every year with insurers who propose rate increases while other states simply require insurers to file rates with the state insurance department prior to the rates going into effect. Whether a state uses a Prior Approval policy or a File and Use rate review policy can have significant effects on premiums. In a 2015 study, Mandic and his colleagues looked at state regulation of the individual insurance markets in the years following the passage of the ACA, specifically 2010-2014 (Mandic, 2015). During that time, 44 states adjusted their rate review authority in order to comply with medical loss ratio regulations established by the law. Overall, the authors found substantial variation in regulation authority across states, but also found that states with prior approval authority were associated with a 10 percentage point lower premium increase than states with file and use authority. The authors controlled for insurance carrier, the insurance and provider market, and political and population differences across states. This study indicates that rate review policies does affect premiums in the health insurance marketplaces.

There is limited literature exploring the direct effect of state insurance regulation on competition. Limited public data from states and the myriad of factors that affect competition make it difficult to conduct a quantitative analysis on this topic. A study by Thomas L. Greaney offers suggestions for how to promote competition in the health insurance exchanges through regulatory action (Greaney, 2011). The study acknowledges that strategies may need to be individually tailored to

states as differences in local markets and culture may make is hard to provide an overarching policy recommendation. Strategies include encouraging states to be "active purchasers," meaning the state would directly negotiate with insurers over premiums, networks, and other benefits. Other tools that could be employed include conducting a competitive bidding process to select plans to compete in the exchange, requiring all insurers operating outside the exchange to participate in the marketplace, or mandating that qualified health plans meet certain criteria in order to foster competition. However, the study suggests that states must walk a fine line between regulating insurers and making sure conditions are favorable for insurers so they do not abandon the exchanges.

As this literature review has indicated, there is a lack of robust quantitative research studying state insurance regulatory policies and competition. This study contributes to the existing literature by testing whether a state's regulatory environment has a clear association with competition. While many studies have been done analyzing the relationship between premiums and competition, there has been less analysis on factors the affect health insurance competition and barriers to entry for insurers. This study provides a high-level analysis of factors that affect competition in the new marketplaces with the aim of understanding why competition differs in different areas of the country and how competition can be fostered in states with limited insurer participation.

THEORETICAL MODEL

This study hypothesizes that a state's regulatory policy could have an effect on the participation of insurers in the health insurance marketplaces. For example, while some states negotiate

proposed rate increases annually with insurance companies, other states simply require insurers to alert them to the new rates before they go into effect. Whether a state employs a "prior approval" rate review process that includes negotiation over rate increases or a "file-and-use" process where the state simply accepts rates as filed could have an effect on an insurer's decision to enter that market. A hypothesis of this study is that states that do not require insurers to negotiate for rate increases will attract more insurers to their health insurance exchange since this policy allows insurers to raise rates as necessary to cover the costs of enrolling a population that is sicker than expected.

A second hypothesis of this study is that states with a dominant insurer will have less competition. In this study, a dominant insurer is defined as an insurer that insures over 50% of the individual market. This study hypothesizes that in states like Alabama where Blue Cross Blue Shield (BCBS) holds over 90% of the market, there will be less competition in the exchange over time, absent the present of a Medicaid insurer or health insurance co-op. It is predicted that there will be less competition because it is difficult for small insurers to negotiate lower reimbursement rates from providers and hospitals when they cannot leverage substantial enrollment numbers. Large insurers have a significant customer base that providers could lose access to if they do not negotiate a competitive reimbursement rate. Therefore, a second hypothesis of this study is that the presence of a dominant insurer in an exchange discourages smaller insurers from entering the market and limits competition over time. In states like Ohio and Wisconsin where the market share of the largest insurer was under 50% in 2014, it is anticipated that competition will remain steady or decrease slightly over the 2014-2017 time period.

A third hypothesis of this study is that states with a Medicaid insurer or co-op participating in their exchange will have more competition over time than states without these types of insurers. Before implementation of the Affordable Care Act, many states decided to contract with private insurers to manage the administration and payment of Medicaid in their states. States who had transitioned their Medicaid population into "managed care" had private insurers caring for low-income populations in their state. In these states, it is likely that a Medicaid insurer would decide to participate in the health insurance exchange since these companies are used to serving low-income, sicker populations and already have competitive provider and hospital networks established within the state. Across the country, 38 states and the District of Columbia currently contract with private managed care organizations to manage the care of their Medicaid populations, as shown in Figure 3. Based on the data collected for this study, over 80% of states that have transitioned their Medicaid populations to managed care have a Medicaid insurer participating in their state exchange.

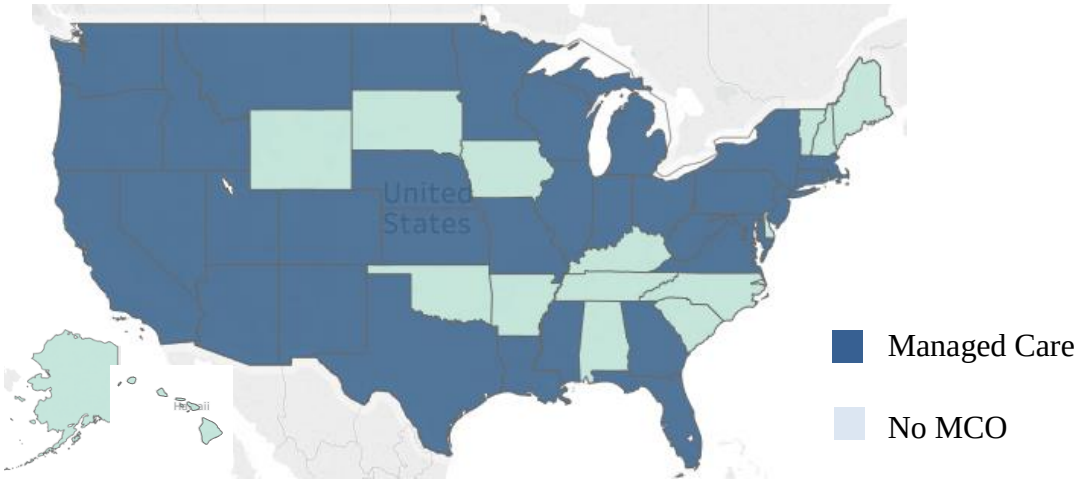

Figure 3: Managed Care: *The states in dark blue contract with Medicaid Managed Care Organizations.*

Along with a Medicaid insurer, this study theorizes that the presence of a Consumer Operated and Oriented Plan (Co-op) increases a state exchange's competitiveness. As part of the Affordable Care Act, a co-op program was established to encourage competition in the exchanges through the establishment of non-profit health insurance companies that are run by the plan members and designed to focus on quality and integrated service delivery.. The formulation of co-ops required $6 billion in funding from the federal government in order to gain the start-up capital necessary to meet state solvency requirements. While there were 24 co-ops in 2014, only a handful have survived. The reasons for the failures of co-ops are varied, including low enrollment and limited experience pricing their plans and adjusting to market conditions. However, in the states where co-ops remain, competition has remained steady over time, especially in Idaho, Montana, and New Mexico.

EMPIRICAL MODEL

In order to test these three hypotheses, this study employs the following empirical model:

$$Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + \mathcal{E}$$

$$\#\ of\ issuers = Bo + B_1(market\ share\ of\ largest\ insurer) + B_2(presence\ of\ Medicaid\ insurer) + B_3(presence\ of\ co\text{-}op) + B_4\ (rate\ review\ policy) + \mathcal{E}$$

In this model, the dependent variable (Y) is the number of insurers participating in a state exchange in a given year. X_1 represents the market share of the largest insurer participating in a state exchange in a given year, or the market share of the dominant insurer. The X_2 variable represents the presence of a Medicaid insurer. The X_3 variable indicates the presence of a co-op.

The X_4 variable is used to indicate the rate review policy employed by the state (File and Use or Prior Approval). Controls for this study include rate review funding, state population, amount of the population that is rural, unemployment levels, the operation of a consumer assistance program, political affiliation of the state legislature, whether the state operates its own exchange or defaults to the federal government, whether a state chose to expand Medicaid, and the percentage of people with pre-existing conditions in the state.

To test the relationship between competition and the key variables of interest, this study employs a negative binomial regression as its identification strategy. This type of regression is used when the outcome variable is a count variable that cannot be negative, i.e. the number of children in a family, or the number of crimes committed. A negative binomial regression is also employed when data is skewed and does not follow the normal distribution. Referring back to Figure 1, the majority of states have 1-5 insurers, so the data has a negative skew and is not normally distributed. A negative binomial regression is similar to a Poisson regression, but this model controls for over-dispersed data where the mean of the variable is much lower than the variance. The average number of insurers participating in an exchange (5 insurers) is much lower than this variable's variance (14), which indicates that a negative binomial regression should be employed instead of a Poisson regression.

A negative binomial regression has the following model:

$$P(y \mid X) = \frac{\Gamma\left(y + \alpha^{-1}\right)}{y!\,\Gamma\left(\alpha^{-1}\right)}\left(\frac{\alpha^{-1}}{\alpha^{-1} + \mu}\right)^{\alpha^{-1}}\left(\frac{\mu}{\alpha^{-1} + \mu}\right)^{y}$$

where y represents an observed count (i.e. number of insurers) and the alpha allows for over dispersion (the mean being lower than the variance). μ represents the expected count or variance and the model is gamma distributed, as indicated by Γ. As alpha approaches infinity, the model comes closer to a Poisson distribution.

There are several limitations to this empirical model, including the possibility for omitted variable bias and multicollinearity. The factors that go into an insurer's decision to participate in a certain state or region are varied and difficult to capture quantitatively. In most states, competition in the insurance exchanges is largely similar to insurer competition in the state prior to the Affordable Care Act. It is easier for insurers who were already operating in that state prior to law to enter the exchange because they already have built a network of providers and hospitals. What attracted these incumbent insurers to the state in the first place can be difficult to assume. It is likely that this model omits a variable that explains why insurers chose to do business in that state decades ago.

There is also a strong possibility of collinearity between variables. For example, this model controls for state-operated exchanges and a state's decision to expand Medicaid. It is likely that a state that chooses to operate its own exchange is supportive of the Affordable Care Act and will also elect to expand Medicaid. A state that defaults to the federal government for exchange cooperation is unlikely to expand Medicaid. Since both of these variables were included in this model, it could lead to biased coefficients due to multicollinearity. Furthermore, this regression strategy utilizes a Maximum Likelihood Estimate which can be worrisome if the number of observations is less than 500. A state-level analysis limits the number of observations in the model

and makes it difficult to have confidence in the results. It is prudent not to adopt a casual interpretation of this study's finding. However, the study was designed to explore high-level trends and the factors that have caused some states to be left with only one insurer in every county and an analysis of state level variables was deemed most appropriate.

DATA DESCRIPTION

In order to test the hypotheses, a dataset was created that lists the total number of unique issuers in each state exchange for the years 2014-2017. This data was obtained from Qualified Health Plan (QHP) landscape files released by Healthcare.gov. These datasets, which are publically available to researchers and issuers, provide a list of available plans for each county, which were aggregated to build a tally of total insurers at the state level. The Kaiser Family Foundation (KFF) also aggregated the total number of insurers at the state level over the 2014-2017 time period based on the same QHP files, but the counts vary slightly based on subsidiaries that belong to the same parent company. This study adopts the same methodology as KFF and condenses the number of insurers participating in an exchange based on the unique parent companies. The average number of insurers participating in a state exchange was just under 5 insurers in 2014. Nearly all states gained insurers in 2015. Competition remained steady in 2016, but there was a drop in 2017 with the exit of UnitedHealth, Humana, and Aetna, as noted in Figure 4 below.

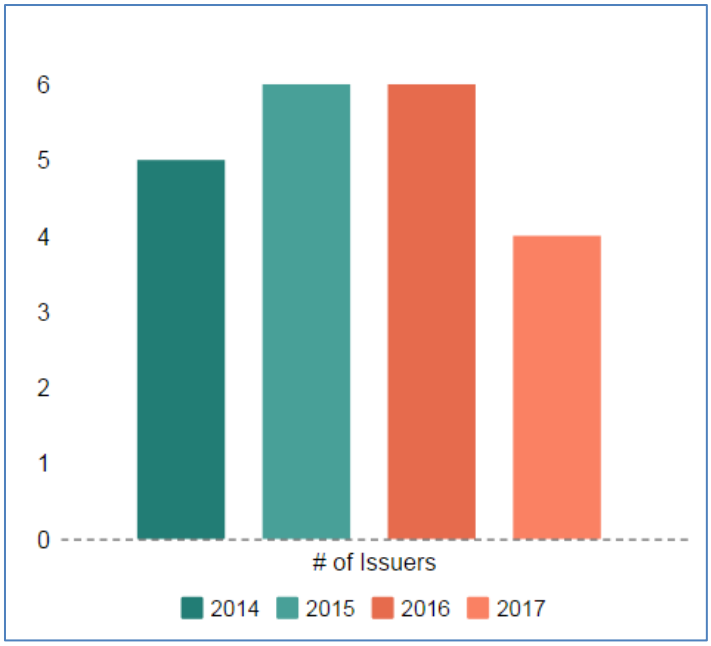

Figure 4: Average Number of Issuers: *The average number of insurers in a state exchange decreased significantly in 2017.*

The QHP datasets also list the names of the issuers that were participating in each state which was used to create a new variable indicating whether a Medicaid insurer such as Molina or Centene was participating in a state exchange. While many large insurers supply Medicaid plans as part of their business offerings, this study classified Medicaid insurers as the companies that exclusively sold Medicaid policies prior to the Affordable Care Act. This variable was coded 0 if there is not a Medicaid insurer participating in an exchange and 1 if a Medicaid insurer was present. Additionally, a KFF dataset provided the market share of the largest insurer in each state exchange in both 2014 and 2015. While market share data for 2016 and 2017 are unavailable, the market share was estimated using the latest 2015 data. The market share of the largest insurer ranged from 17% in Wisconsin to 90% in West Virginia. The map below shows the range in market share of the largest insurers in 2015. Large insurers in Colorado, New York and Wisconsin have low market share compared to insurers in West Virginia and Oklahoma.

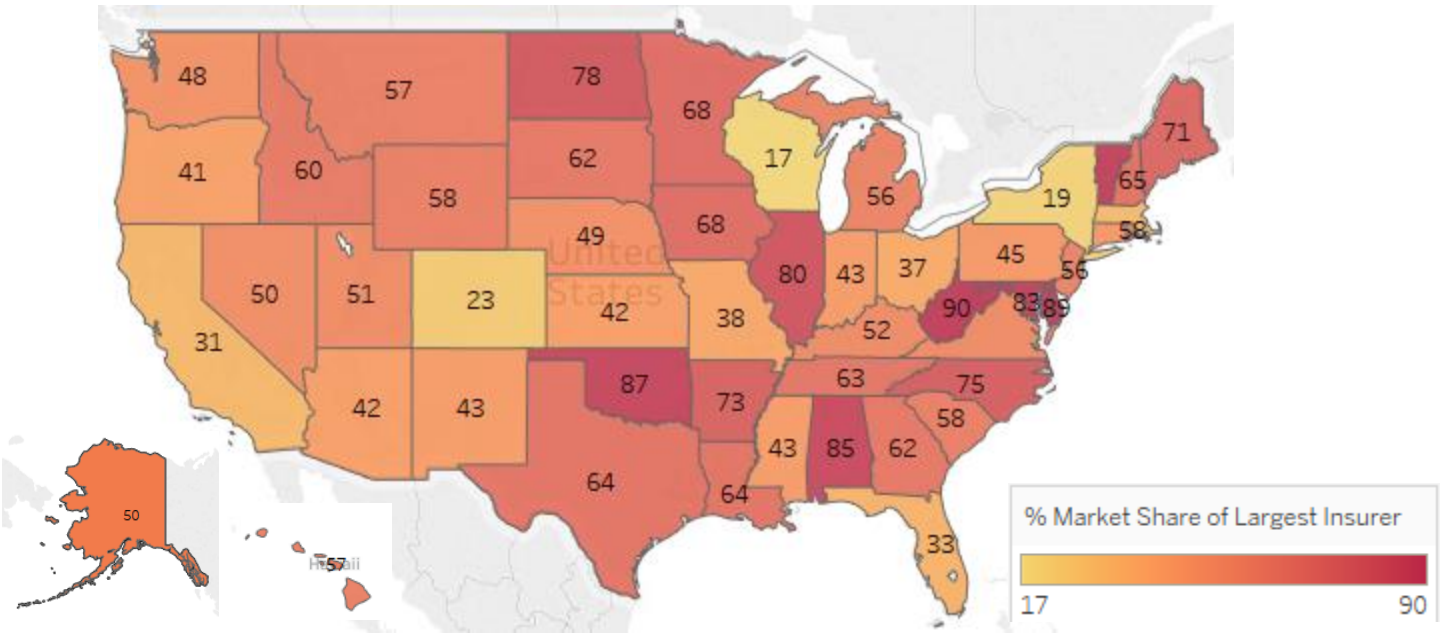

***Figure 5**: **Market Share Heat Map:** This map shows the states with the most highly concentrated health insurance marketplaces.*

KFF also has data on the type of rate review policy a state employs in its individual market. States typically use either a File and Use policy or a Prior Approval process. To include this data in the model, a new variable was created and coded 0 if a state utilizes a prior approval regulatory process, and 1 if a File and Use approach is utilized. Currently, two-thirds of states opt for a Prior Approval policy while the remaining states utilize a File and Use approach. The model also includes data on rate review funding from the federal government over the 2010-2014 period, which was obtained from the Office of the Assistant Secretary for Planning and Evaluation (ASPE). At the end of 2016, ASPE compiled a dataset entitled "Compilation of State Data on the Affordable Care Act," which includes state level data on coverage gains as a result of the ACA, as well as the amount of funding a state received for improvement of rate review processes.

There are many control variables utilized in this model including state population, percent of the population that is considered rural, the percent of the population with pre-existing conditions, annual state unemployment levels, and the number of primary care providers per capita in a state. The population and percent rural data was obtained from the U.S. Census. The unemployment numbers were obtained from the Bureau of Labor Statistics. The percentage of individuals in a state with pre-existing conditions and the number of primary care providers per capita was acquired from the Kaiser Family Foundation. KFF also provided up-to-date data on state Medicaid expansion decisions and whether the state operated and ran its own exchange or defaulted to the federal government. This study's model also includes a variable that indicates the presence of a Consumer Assistance Program (CAP), which helps facilitate awareness and enrollment in the exchanges. A list of states with CAP programs was found on the Centers for Medicare and Medicaid Services (CMS) website. Finally, the study includes a variable indicating the political party of the state legislature for the years 2014-2017. This variable was coded 0 if the state legislature was controlled by Democrats and coded 1 if Republicans controlled the legislature. This data was gathered from state legislative websites that were compiled by the Library of Congress.

EMPIRICAL RESULTS

Table 1 on the next page displays the results of a negative binomial regression testing the effect of the key independent variables on competition in each state's health insurance marketplace.

Table 1: **Effect of Key Variables on Exchange Competition**

VARIABLES	Incident Rate Ratios
Market Share	0.986***
	(0.00168)
Medicaid Insurer	1.402***
	(0.0945)
Co-op	1.431***
	(0.0784)
File and Use	1.085
	(0.0705)
Rate Review Funding	1.002**
	(0.000817)
Pre-Existing Conditions	1.018
	(0.0137)
Exchange Type	1.203***
	(0.0521)
Medicaid Expansion	1.041
	(0.0765)
Population	1.033***
	(0.00473)
Rural	0.995**
	(0.00260)
Unemployment	0.906***
	(0.0254)
Primary Care Providers	1.002***
	(0.000804)
Consumer Assistance Program	0.876
	(0.0712)
GOP Legislature	1.366***
	(0.106)
2015	1.133*
	(0.0768)
2016	1.088
	(0.0880)
2017	0.855*
	(0.0722)
Midwest	1.104
	(0.0870)
South	1.190*
	(0.120)
West	0.957
	(0.0974)
Constant	3.172***
	(1.200)
Observations	204

Looking first at the market share variable, every percentage point increase in market share of the largest insurer in a state exchange is associated with a 0.98 increase in the rate of insurer competition, holding the other variables in the model constant. In other words, every percentage point increase in market share of the largest insurer is associated with a 2% decrease in competition, holding the other variables in the model constant. This result supports this study's hypothesis that an increase in market share of the largest insurer is associated with a decrease in competition. This relationship can also be displayed graphically, as shown below.

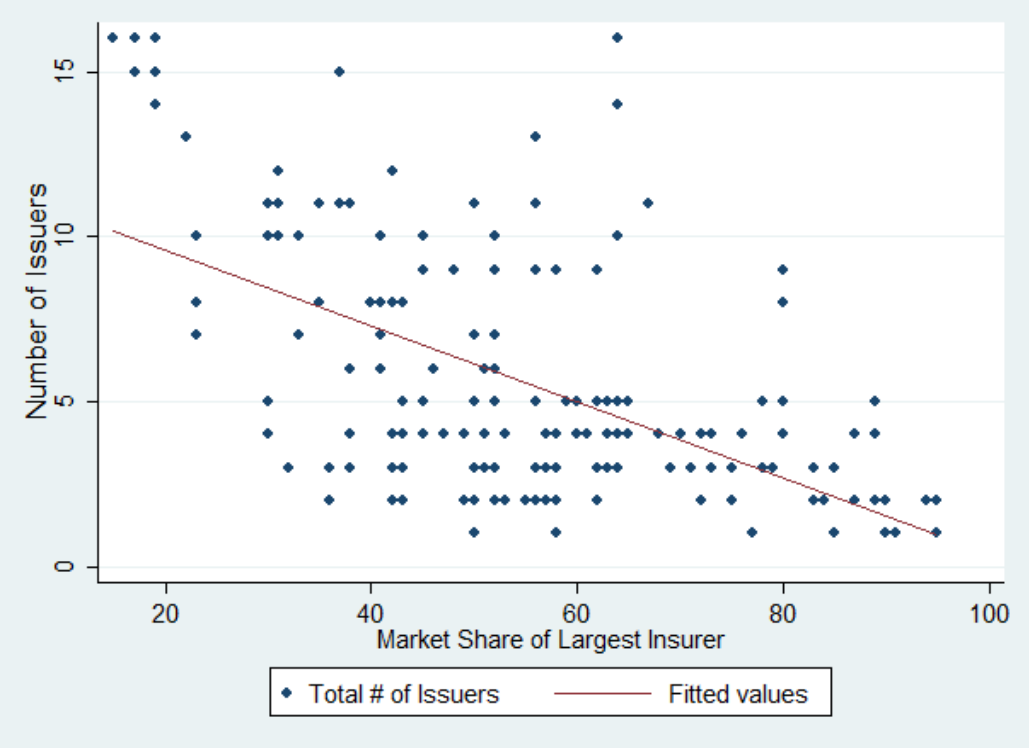

Figure 6: Market Share & Competition: *This graphic shows that as the market share of the largest insurer increases, competition decreases.*

Looking at the Medicaid insurer variable, the presence of a Medicaid insurer is associated with a 1.4 rate increase in insurer competition, or a 40% increase in market competition. Similarly, the presence of a co-op in a state exchange is associated with a 43% increase in competition, holding

constant the other variables in the model. This also supports the study's hypothesis that these types of insurers will increase competition over time in the exchanges. While large commercial insurers like UnitedHealthcare and Humana dropped out of the exchanges over the 2014-2017 period, Medicaid insurers have been able to make profits and continue to compete for market share with dominant insurers like Blue Cross and Blue Shield. Similarly co-ops like the Maine Community Health Options plan and New Mexico Health Connections are able to compete in their states and take market share away from the dominant insurer.

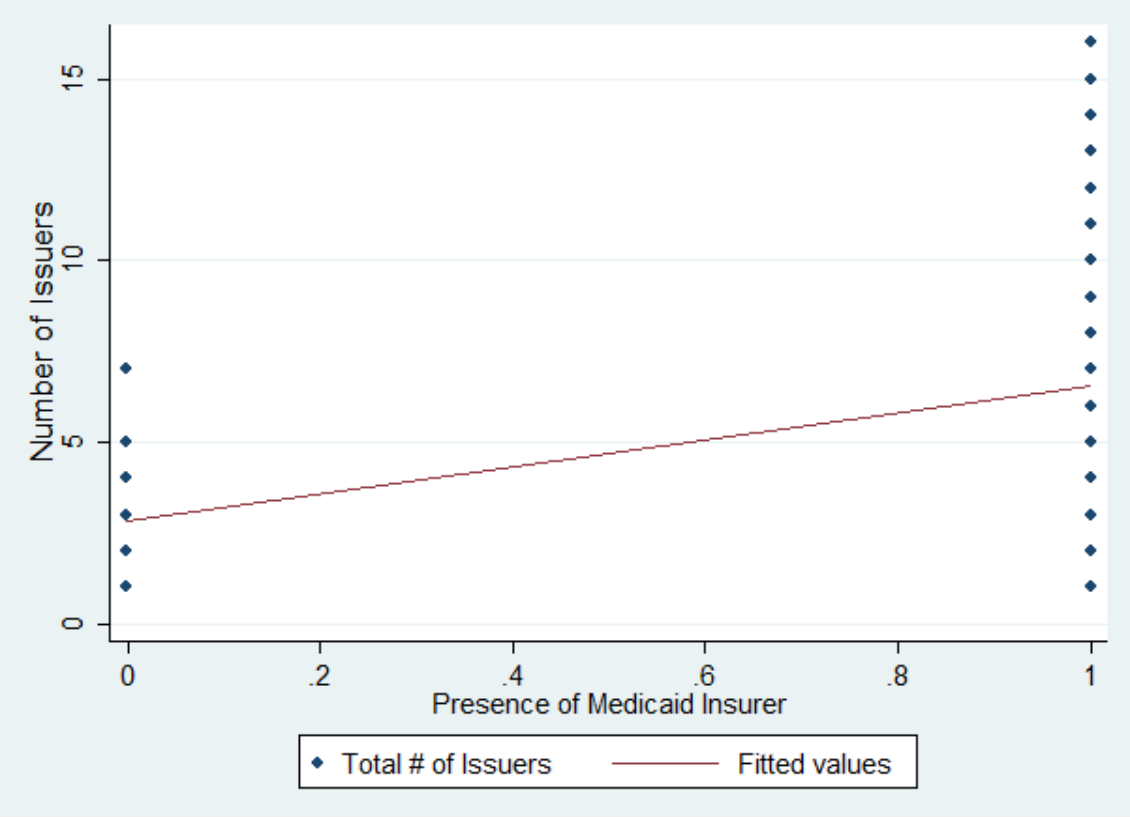

Figure 7: Medicaid Insurer & Competition: *The presence of a Medicaid insurer is associated with higher levels of competition.*

Contrary to the theorized relationship, the results indicate that a state's regulatory policy does not have a statistically significant effect on competition. This does not support the hypothesis that

states with a File and Use regulatory policy would see more competition on the whole. The decision to participate in an insurance exchange may have less to do with state regulatory environment and more to do with an insurer's previous experience in that state, or if they are new to the state, the confidence that they can build a competitive network of providers and hospitals and compete with dominant insurers. The results of this analysis indicate that the type of insurer participating in an exchange may be a stronger predictor of competition than regulatory policy.

Looking at the control variables in the study, there are other relationships that could be grounds for further research. The amount of federal funding received by a state for rate review improvements had a very small, but statistically significant effect on competition. Every increase of $100,000 in federal funding is associated with a 0.2% increase in competition, holding the other variables in the model constant. This relationship could be biased by the fact that states that are supportive of the Affordable Care Act may have been more likely to apply for more rate review funding. States with democratic leadership on the west and east coasts might also have more competition on the whole compared to conservative states in the southeast and west due to the presence of population hubs. This could indicate that rate review funding is not by itself a strong predictor of insurance competition.

Surprisingly, the percentage of the population with pre-existing conditions did not have a statistically significant effect on competition. Looking closer at the pre-existing condition variable, the minimum value was 22 and the maximum value was 36. This means that every state had between 22-36% of its population identifying as having a pre-existing conditions. This narrow range could indicate that states are largely comparable in the overall balance of sick and

healthy within each state. Even when a new variable was added to the model that ranked each state from 1-50 for overall health status, it did have a statistically significant effect on competition. While insurers invariably consider population health measures in their decision to expand into new areas, the results indicate that health status is not the strongest predictor of competition. This could indicate that population health is less of a factor for insurers in deciding to enter a new market compared to other business concerns, such as whether they can compete with a dominant insurer.

Whether a state operates its own exchange or defaults to the federal government did have a statistically significant effect on competition. The results indicate that states that operated their own exchange were associated with a 20% increase in competition compared to states that defaulted to the federal government, holding the other variables in the model constant. However, as previously stated, this variable could indicate that states that are politically supportive of the Affordable Care Act are also states on the east and west coasts with more population hubs, which could be attracting more insurers for those reasons. This caveat makes it difficult to declare a strong casual effect between state operation of their exchange and competition. For example, if Alabama decided to operate its exchange in 2018, it is unlikely that state will see more competition as a result. Whether a state decided to expand Medicaid did not have a statistically significant effect on competition. This decision was highly political, so it is understandable that it did not influence insurers' decision to participate in the marketplaces.

A state's population size is a statistically significant predictor of competition. Every increase in one million people in a state is associated with a 1.033 increase in the rate of insurer competition,

or a 3.3% increase in the number of insurers participating in a state exchange, holding the other variables in the model constant. This makes sense, as populous states have more population hubs and more hospitals and providers from which to build a competitive network. Similarly, the percentage of the population that is rural has a statistically significant effect on competition. Every percentage increase in the population that is rural is associated with a 0.99 rate of increase in insurer competition, or a 1% decrease in competition. This result is probable since insurers are less attracted to rural states since it is harder to build networks in these states.

The unemployment level in a state also has a statistically significant effect on competition. A 1% increase in unemployment is associated with a 10% decrease in competition. While this rate ratio seems quite large, it is important to note that a 1% increase in unemployment is a huge drop in employment, and most states experience changes at a tenth of a percentage point, i.e. going from 4.0% unemployment to 4.1%. An increase in unemployment of 4.0% to 5.0% would be a very serious drop that plausibly could affect an insurer's decision to enter a state insurance market. The results indicate that states that have higher unemployment and likely higher poverty rates would be less desirable to insurers.

The number of primary care providers per capita has a small but statistically significant effect on competition. Every additional primary care provider per 1,000 residents is associated with a 0.2% increase in competition. A high number of primary care providers is favorable to insurers since they can build better provider networks if there are more providers to choose from. The size of this effect also makes sense since one additional primary care provider is not expected to have a strong effect on insurer competition. The operation of consumer assistance program was

not found to have a statistically significant effect on competition. This is unexpected since it would seem like states that are able to provide more assistance to customers would enroll more people, which would attract insurers. However, it is also possible that states with the most uninsured that are setting up consumer assistance programs are the same states without political support for the ACA and less competition in their marketplaces. For example, North Carolina had strong enrollment in the first two years of the exchanges, but competition faded over the 2014-2017 period with Blue Cross Blue Shield dominating the market.

Finally, states where the Republican Party controlled the state legislature were associated with a 36% increase in exchange competition. While this number seems quite large, it is important to note that the Republican Party controls 66% of all state legislatures, including four of the most competitive states (Texas, Wisconsin, Ohio, and Virginia). These four states constitute almost 30% of all insurers in states controlled by Republican legislatures. This could be biasing the impact of having a GOP-controlled legislature. Still, this is an interesting result and this variable is important to include in our model since many state policy and regulatory decisions have to be approved by state legislatures.

When controlling for year fixed effects, it appears that 2015 had a statistically significant association with competition compared to 2014. This makes sense since competition increased in almost every state in 2015 over 2014. There was also a statistically significant association between the year 2017 and insurance competition. Insurance competition in 2017 is associated with a 15% decrease in insurer competition compared to 2014, which takes into account the exit of the 3 major insurers in 2016. When controlling for region, the Southern region had a

statistically significant association with competition compared to the Northeast. States in the south are associated with a 19% increase in competition compared to states in the Northeast. While this seems a bit unusual considering that many southeast states like Alabama have been left with 1 or 2 insurers, the number is biased by states like Texas and Virginia which have high competition. Also, the northeast includes small states like Rhode Island, Connecticut, Vermont and New Hampshire that only have 1 or 2 insurers. With those facts in mind, the increase in insurer competition is more fathomable.

It is difficult to make causal conclusions about many of the relationships in this model due to the limitations of the analysis noted previously. For example, the association between insurer competition and the File and Use rate review policy could be biased due to omitted variable bias. As mentioned earlier, it is difficult to predict why a state employs a certain regulatory policy. It is possible that other variables affect a state's regulatory decisions that are not included in this model. Furthermore, states with sicker populations may take a less active regulatory approach in order to ensure that insurers remain in the marketplace. While we can control for health status, oftentimes the decision to enact a certain regulatory policy was formulated 20 or 30 years ago and it is difficult to account for that decision in our model.

Because of this possibility, it could be helpful to instrument for the File and Use variable using another variable that could isolate the direct effect of the File and Use variable on competition and see if regulatory policy plays a role in encouraging competition in the health insurance exchanges. To find a valid instrument, it is necessary to find a variable that is relevant, meaning it is strongly correlated with the File and Use policy. The Rate Review Funding variable, which

describes how much money a state received over the 2010-2014 period to improve rate review processes, was found to have a statistically significant association with the File and Use variable. This instrument could be considered relevant because it is closely correlated with the ability of a state to regulate proposed rates since it provides the resources that enable a state to take a more active approach. The instrument could be considered valid because it is only correlated to competition through its relationship to the state's rate review policy and it is arguably uncorrelated with any factors that would be in the error term. However, instrumenting for the File and Use policy still did not produce a statistically significant relationship between regulatory policy and competition (see Appendix B for IV results). Possible endogeneity issues remain. For example, states that employ a File and Use policy could be more politically conservative and while we control for Republican state legislatures in our model, a state's regulatory policy could have been decided decades ago and may not reflect current political climates. This indicates that the true effect of regulatory policy cannot be teased out using IV regression.

POLICY RECOMMENDATIONS AND CONCLUSIONS

This study set out to explain why some states had more competition than others in their health insurance marketplaces. This is a daunting task, as it is difficult to understand and define all the factors that affect an insurance company's decision to participate in a marketplace. However, there were some relationships that were more predictable. For example, states where a dominant insurer has nearly all of the market were found to have less competition than states where enrollment was spread across three or more insurers. It was expected that states with higher population rates would have a higher number of insurance companies participating in their exchanges. It is more difficult for insurance companies to build a competitive market in a rural

state with lower levels of providers and hospitals. These relationships were confirmed by the study, but there are other less obvious relationships which this study aimed to tease out, including how the type of insurer in the exchange could affect competition and the role of state regulatory policy in attracting competition.

Recent studies have found that insurance companies that manage Medicaid populations are profiting from the exchanges due to their network structure and experience taking care of sicker populations. This study confirmed that states that had a Medicaid insurer participating in a state exchange were associated with an increase in competition. This makes sense since states that have transitioned their Medicaid population into managed care already have private insurance companies operating in their state and these insurers are likely to participate in the exchange since the population they serve is so similar to the exchange population. MCOs have business models that more efficiently serve low-income populations than national carriers who are used to insuring relatively healthy customers who can afford to purchase insurance in the non-group market. Similarly, results indicated that the presence of a co-op will increase competition in a state exchange. While a lot of co-ops have gone out of business, there are seven states where co-ops still remain and states with a co-op participating in the exchange have more competition than states without a co-op, on average.

Another variable this study aimed to test was the relationship between regulatory policy and competition. It is difficult to predict a state's choice of health insurance regulatory policy. While a common assumption is that less regulation will attract more business, that assumption does not always hold true, especially in the health insurance market. Highly competitive states like

California, Texas, and Wisconsin employ a File and Use regulatory policy while at the same time states with lower levels of competition, including Georgia, Missouri and Wyoming, also employ a File and Use regulatory policy. Issues of omitted variable bias and endogeneity make it difficult to determine the true effect of regulatory policy on competition. Instrumenting for regulatory policy using the amount of federal funding for rate review processes seemed like a good way to address omitted variable bias as rate review processes are important to constrain the growth of dominant insurers, but ultimately the variable still did not have a clear association with competition.

Additionally, some states do not abide by their official rate review policy when negotiating rates for the health insurance exchanges. While California officially employs a File and Use regulatory policy, state officials have been credited with actively negotiating with insurers and bringing down proposed rate increases. A state's official regulatory policy does not always reflect a state's willingness to negotiate rates. Some states have mixed policies, where they use prior approval on HMOs, and File and Use on commercial carriers, or have special regulations on Blue Cross plans. The mix of policies employed show that regulatory decisions can be nuanced and hard to analyze quantitatively.

Assuming that the exchanges remain the law of the land and are untouched by legislation to repeal the Affordable Care Act, there are several options for policymakers to strengthen competition in the exchanges. One option is to foster enrollment in the exchanges by increasing the generosity of subsidies to enrollees and shoring up the risk adjustment and reinsurance programs to guarantee that insurers are compensated for taking on sicker customers. Congress

has not appropriated this funding for several years. Though politically unpopular, several policymakers have encouraged increasing the penalty for the individual mandate in order to entice more participation in the exchanges. Consumer outreach and enrollment could also be given more funding in order to foster enrollment and help consumers understand the discounts they could receive from premium tax credits. Increased marketing could be key to attracting healthy individuals to the exchanges. A state could also mandate the end of the sale of insurance policies that do not conform to ACA specifications. Many plans were grandfathered and were not subject to the same criteria that other plans were required to meet. Insurers are still selling millions of policies that offer limited protections but are cheaper and attract healthier consumers. Increased regulation of these policies could force healthier consumers into the health insurance marketplace risk pool.

Another option is for states to take a more active role in selecting what health insurers can participate in their exchanges. States could use competitive bidding process to select insurers to participate on the exchange, which could inspire competition among insurers who will be forced to improve value and reduce costs in order to be desirable to the state. This assumes that the pool of customers in the state are worthwhile to insurers to pursue. This would only be the case if the exchanges continue to attract enrollment. Another possibility is to mandate that all active insurers in a state have to offer a plan in the health insurance exchange. This would assuredly create more players in the marketplace and force insurers to tailor their plans and compete so as not to lose money. A state could also mandate that an insurer who participates in one area of the state should be required to offer plans in every county. Insurers are generally opposed to heavy

regulation, so this would have to be done in a tactful way that doesn't keep insurers away from the state.

Many progressive lawmakers are calling for reconsideration of the "public option," or a government-run insurance plan that would compete with dominant insurers for customers. The inclusion of a public plan was considered too unpalatable for initial inclusion in the 2010 legislation, but with competition faltering in the exchanges in 2017, the option has received more support and attention, particularly among Democratic lawmakers in the Senate. A public plan would not need to make profits and could use its leverage to bargain for lower prices. Public plans like Medicare have proven to have lower administrative costs than private insurers and spending in Medicare and Medicaid has grown much slower than private insurance spending growth. However, experts fear that a public option would gradually push private insurers out of the market and lead to a single-payer health care system, which has limited support from Republican lawmakers. As Republicans are in firm control of both houses of Congress, it is unlikely that this option will be politically feasible.

Ultimately, state regulators have to walk a fine line in determining how hard they can push insurers to lower rates while making sure that these companies can afford to keep doing business in their state and not abandon the state exchange. While the results of this study indicate that a state's official regulatory policy does not play a significant role in attracting insurers, there are other factors that affect competition in the state exchanges. The biggest factors that go into an insurer's decision to participate in an exchange are the ability of the insurer to build a competitive network of hospitals and providers that can challenge a dominant insurer. In states

with less hospitals and providers, insurers are unable to exclude dominant provider systems and cannot negotiate lower prices and offer lower premiums to customers. Smaller insurers are unable to leverage their limited customer base in order to obtain discounts. These factors appear to weigh more heavily on insurers than the regulatory environment in the state. It is therefore unsurprising that Medicaid insurers are continuing to build market share in the health insurance exchanges since they already have competitive networks and have already negotiated lower reimbursement rates to providers.

This study confirms that the type of insurer participating in the marketplace can affect competition, along with population characteristics and economic conditions like unemployment, and the number and density of providers in the state. Funding from the federal government can also play an important role in increasing competition by providing the resources that states need to improve regulatory processes and bring premium prices down for consumers. If policymakers want to shore up the exchanges and increase competition, several regulatory options are on the table, but the key deterrent to insurers willing to enter a new market is the inability to negotiate lower prices from providers to compete with dominant insurers. A limitation of this study is the absence of data on hospital and provider consolidation, which has been studies have suggested is an obstacle to insurers seeking to build competitive networks. If new insurers can partner with existing provider systems and use the hospital systems' name brand recognition to attract consumers, that could enable smaller insurers to compete for market share. Further study is necessary to understand how to facilitate insurer entry into new markets dominated by one insurer.

APPENDIX A: DESCRIPTIVE STATISTICS

Name of Variable	Description	Mean	Standard Deviation	Minimum	Maximum
# of Issuers	An issuer of an Qualified Health Plan (QHP) through the State-based and Federally-facilitated Health Insurance Marketplaces	5.4	3.75	1	16
Market Share	The market share of the largest insurer in 2014 and 2015	.57	.20	.15	.95
MCO in Exchange	The presence of a Medicaid insurer in an insurance exchange	.68	.47	0	1
Co-op in Exchange	The presence of a Consumer Operated and Oriented Plan in an insurance exchange	.29	.45	0	1
Rate Review Policy	Whether the state utilizes a “Prior Approval” or “File and Use” rate review policy	.35	.48	0	1

APPENDIX B: IV REGRESSION RESULTS

VARIABLES	(1) Incident Rate Ratio	(2) IV Regression
Residuals		0.293**
		(0.139)
Market Share	0.986***	-0.0109***
	(0.00168)	(0.00236)
Medicaid Insurer	1.402***	0.367***
	(0.0945)	(0.0724)
Co-op	1.431***	0.432***
	(0.0784)	(0.0662)
File and Use	1.085	-0.166
	(0.0705)	(0.146)
Rate Review Funding	1.002**	0.000749
	(0.000817)	(0.000926)
Pre-Existing Conditions	1.018	0.0220
	(0.0137)	(0.0137)
Exchange Type	1.203***	0.164***
	(0.0521)	(0.0445)
Medicaid Expansion	1.041	-0.0499
	(0.0765)	(0.0915)
Population	1.033***	0.0394***
	(0.00473)	(0.00608)
Rural	0.995**	-0.00578**
	(0.00260)	(0.00253)
Unemployment	0.906***	-0.0970***
	(0.0254)	(0.0274)
Primary Care Providers	1.002***	0.00212***
	(0.000804)	(0.000780)
Consumer Assistance Funding	0.876	-0.161*
	(0.0712)	(0.0846)
GOP Legislature	1.366***	0.310***
	(0.106)	(0.0773)
2015	1.133*	0.129*
	(0.0768)	(0.0669)
2016	1.088	0.114
	(0.0880)	(0.0790)
2017	0.855*	-0.122
	(0.0722)	(0.0829)
Midwest	1.104	0.0493
	(0.0870)	(0.0827)
South	1.190*	0.0936
	(0.120)	(0.113)
West	0.957	-0.00220
	(0.0974)	(0.104)
Constant	3.172***	1.051***
	(1.200)	(0.391)
Observations	204	204

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