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2015 health insurance marketplace competitiveness study

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EXECUTIVE SUMMARY

The second year of the health insurance exchanges is upon us, and insurers are starting to think about 2016 rate filings. In preparation for these filings, this paper analyzes the 37 states participating in the Federally Facilitated and State Partnership Marketplaces¹ to find key competitiveness metrics that are likely to drive future rates. We used 2014/2015 Health Insurance Marketplace (HIM) data^{2,3} to find correlations between silver plan premiums⁴ and variables such as the number of carriers and plans in a rating area, available industry metrics, and the structure of provider networks in each rating area. Due to their importance in determining federal subsidy levels for those with lower incomes, we chose to focus our analysis on the second-lowest silver plan offered in each market. Because all carriers in a particular market are required to follow the same rating rules for age and gender, we chose to simplify our analysis by only considering premium rates for 21-year-olds.⁵

Key findings⁶

- The effect of having one additional carrier⁷ operating in a particular rating area is correlated with a \$6.50⁸ decrease in the second-lowest-cost silver plan's monthly premium rate for 21-year-olds. The impact could be up to three times larger at older ages, for states using the federal standard age rating factors.
- Separately (and independently), we found that having more plans offered per carrier in a given rating area was correlated with lower premiums in the price of the second-lowest-cost silver plans. Our analysis found that having an additional plan per carrier is associated with a \$2.50 premium decrease.
- Critical access hospitals tend to be geographically isolated and thus have greater pricing power, which is reflected in higher premium rates. An increase of 10 percentage points in the proportion of critical access hospitals^{9,10} in a rating area correlates with an increase in premiums of \$1.
- On the other hand, hospitals that are in the 100 largest U.S. cities (by population) are likely to have less pricing power. An increase of 10 percentage points in the proportion of hospitals in these largest cities is correlated with a decrease in premiums of \$1.25.
- The Centers for Medicare and Medicaid Services (CMS) Medicare benchmark rates¹¹ are correlated with premium rates. A \$10 decrease to a state's average benchmark rate ties to a \$0.50 exchange premium reduction. Because benchmark rates are released in advance of Patient Protection and Affordable Care Act (ACA) pricing deadlines, this market coordination can be an early indicator of how rates will change in different states.
- Time-fixed effects reveal that 2015 premiums are, in general \$15 higher than in 2014.

1 This paper focuses on Patient Protection and Affordable Care Act-compliant commercial individual market plans. Oregon, Nevada, and New Mexico are new to using the federal application system in 2015. Note that 34 states participated in the Federally Facilitated and State Partnership Marketplaces in 2014, while 37 participated in 2015.

2 Data.healthcare.gov (August 20, 2014). 2014 QHP Landscape Individual Market Medical. Retrieved October 28, 2014, from <https://data.healthcare.gov/dataset/QHP-Landscape-Individual-Market-Medical/b8in-sz6k>.

3 Data.healthcare.gov (November 14, 2014). 2015 QHP Landscape Individual Market Medical. Retrieved November 14, 2014, from <https://data.healthcare.gov/dataset/2015-QHP-Landscape-Individual-Market-Medical-Excel/s8rp-rr6e>.

4 We analyzed many different premium variables, but we focus on the second-lowest-cost silver 21-year-old plan premium rates and the average of the five lowest silver 21-year-old plan premium rates. Both metrics give an indication of rates at the most competitive level.

5 All states except New Jersey and Utah use the standard federal age curve that has a 1,000 factor for 21-year-olds. Utah also has a 1,000 factor for 21-year-olds. New Jersey has a 1,250 factor, but state level differences are accounted for by the fixed effects model. Age curve variations can be found at <http://www.cms.gov/CCIIO/Programs-and-Initiatives/Health-Insurance-Market-Reforms/Downloads/state-specific-age-curve-variations-08-09-2013.pdf>.

6 The below findings are for 21-year-old single-person premium rates. Most of the effects approximately scale up with premium increases for other age-gender premium bands.

7 Carrier counts in each area were found by removing duplicate issuer names, and then manually checking for slight variations in issuer names. This resulted in counts that are different from the Office of the Assistant Secretary for Planning and Evaluation (ASPE) counts. See the technical appendix for more details.

8 Note that all premium impacts in this analysis have been rounded to the nearest \$0.25 for publication.

9 The proportion of critical access hospitals in a rating area is defined as the number of critical access hospitals divided by the total number of hospitals in a rating area.

10 The latest available AHA data is from 2013 (when 2014 plans were priced). We assume the same hospital data for both 2014 and 2015 premiums. We believe this to be reasonable, since hospitals rarely open or close in any given rating area.

11 CMS benchmark rates are used to set how much plans receive for providing Medicare Advantage coverage. Benchmark rates by county can be found at <http://www.cms.gov/Medicare/Health-Plans/MedicareAdvSpecRateStats/Ratebooks-and-Supporting-Data.html>. 2014 benchmark rates were compared with 2014 exchange rates, and 2015 benchmark rates were compared with 2015 exchange rates.

The most interesting of the above results is the downward pressure that the number of carriers, and the number of plans offered by each carrier, has on premiums. Carrier and plan counts were analyzed, and the two-year regression reveals that both are important drivers. This result makes sense, as the existence of more competition should drive down the price for consumers of the most competitive offerings. Moreover, a greater number of plan options tends to mean that carriers have more benefit design offerings, including plan designs with relatively leaner benefits or narrow network options. Lastly, if carriers are pricing to the assumed level of risk in the individual market (each with their own assumptions and projections about the future level of morbidity and utilization), the greater the number of carriers pricing would result in even lower results on the low side (and of course, higher results on the high side).

The impacts that critical access hospitals and hospital location relative to high population areas have on premiums are also interesting effects that work in contrast to each other. The existence of more critical access hospitals could be an indicator of a weaker provider network in a rating area, causing premiums to increase, and could also be an effect related to a rural nature of the market (with similar results). Carriers in these areas have fewer provider options to choose from, which means less negotiation power when considering reimbursement levels.

It is notable that in each of these instances, variables associated with greater competition are associated with lower premiums. As a consequence, it appears that greater levels of competition benefit consumers with lower premiums and the federal government, due to lower premium subsidy levels¹².

Another variable that correlates with exchange premium is the CMS Medicare benchmark rates. It is unsurprising that these rates would be correlated with exchange premiums; provider reimbursement rates and standards of care are likely to be somewhat similar between the commercial and Medicare markets on a state-by-state basis. Additionally, there is likely to be substantial overlap in many areas between carriers that participate in both markets. For instance, commercial carriers that also offer Medicare products will likely use that experience (either overtly or implicitly) when participating in the ACA market. These carriers are also likely to exhibit relatively similar levels of overhead, capital needs, and pricing aggressiveness between the two markets, compared with two independent entities each offering just one.

¹² The federal government subsidizes exchange premiums for many marketplace members. These subsidy levels are based on the second-lowest-cost silver plan premiums.

PREMIUM COMPARISON

Multivariate model

In order to better understand the potential drivers of premium differences between rating areas, we used a fixed effects regression model to quantify key market forces that drive competition, while removing much of the noise caused by state-to-state and year-to-year differences. The fixed effects control for the following market forces:

- **State:** We control for unmeasurable variables that are constant over time, but vary from state to state. An example of this is EHB benefit requirements that vary based on each states regulation.
- **Year:** We control for unmeasurable variables that are constant in each rating area, but vary from 2014 to 2015. An example of this is medical cost trend and inflation.

The first step in this analysis is to define a metric that summarizes competitive behavior among carriers. We chose to use the second-lowest-cost silver plan premium for a 21-year-old as our metric primarily because it represents a standard comparison that defines premium subsidies as used on the exchanges.

As an alternative measure, we considered the use of the average of the five lowest silver plan premium rates in the market, which represents the most competitive segment of the exchange marketplaces. In many ways this is a more stable metric than the second-lowest silver plan rate, as it defines an average of the lowest plans instead of simply choosing a single value that is more dependent on premium spread in the marketplace (which can be skewed by cheap benefit plan designs and/or narrow networks).¹³ Despite regression results showing a better fit when using the average rate, we chose to use the subsidy benchmark rate for this analysis due to its industrywide acceptance and use in pricing.¹⁴

The next step of the analysis is to find the market forces that are correlated with premium rate differences at the rating area level. We considered a large number of potentially predictive variables, including hospital capacity (measured in number of beds) and type of facility, overall population, and Medicare and Medicaid utilization data, before ultimately arriving at the following five-variable model:

- The number of carriers in each rating area was included in order to measure the level of competition on the marketplace.
- The number of plans per carrier was included in order to account for the trivial relationship between having more plans and lower rates.
- The percentage of hospitals that are defined as critical access and the percentage that are in the 100 largest U.S. cities were included in order to account for structural factors in each area.
- CMS Medicare statutory benchmark rates¹⁵ were included in order to show the level of coordination between Medicare and ACA markets.

This model calculates the expected changes in premiums given changes to the variables above. It is important to note that this analysis does not directly prove causality. However, the scope of this research included a thorough review of available variable combinations and theoretical approaches. The regression reveals statistically significant associations, with p-values ranging from 0%-2%, well below the common 5% threshold for significance. Additionally, each variable is known prior to finalization of exchange premium rates (the number of plan offerings per carrier may not be precisely known in some cases, but is likely to at least be approximately known, especially in areas with relatively few carriers).

Our findings show strong support for a causal relationship between four of the five dependent variables outlined above and the most competitive premium rates. In addition, Medicare benchmark rates and ACA rates are likely correlated due to both being caused by underlying practice patterns, reimbursement rates, and differences in population morbidity by area.¹⁶

¹³ We tested the same model on many different dependent variables, and found that the average of the five lowest rates gave the best model fit and lowest p-values.

¹⁴ Note also that regression results between the two dependent variables were consistent with each other, and bidirectional elimination yielded the same resulting independent variables.

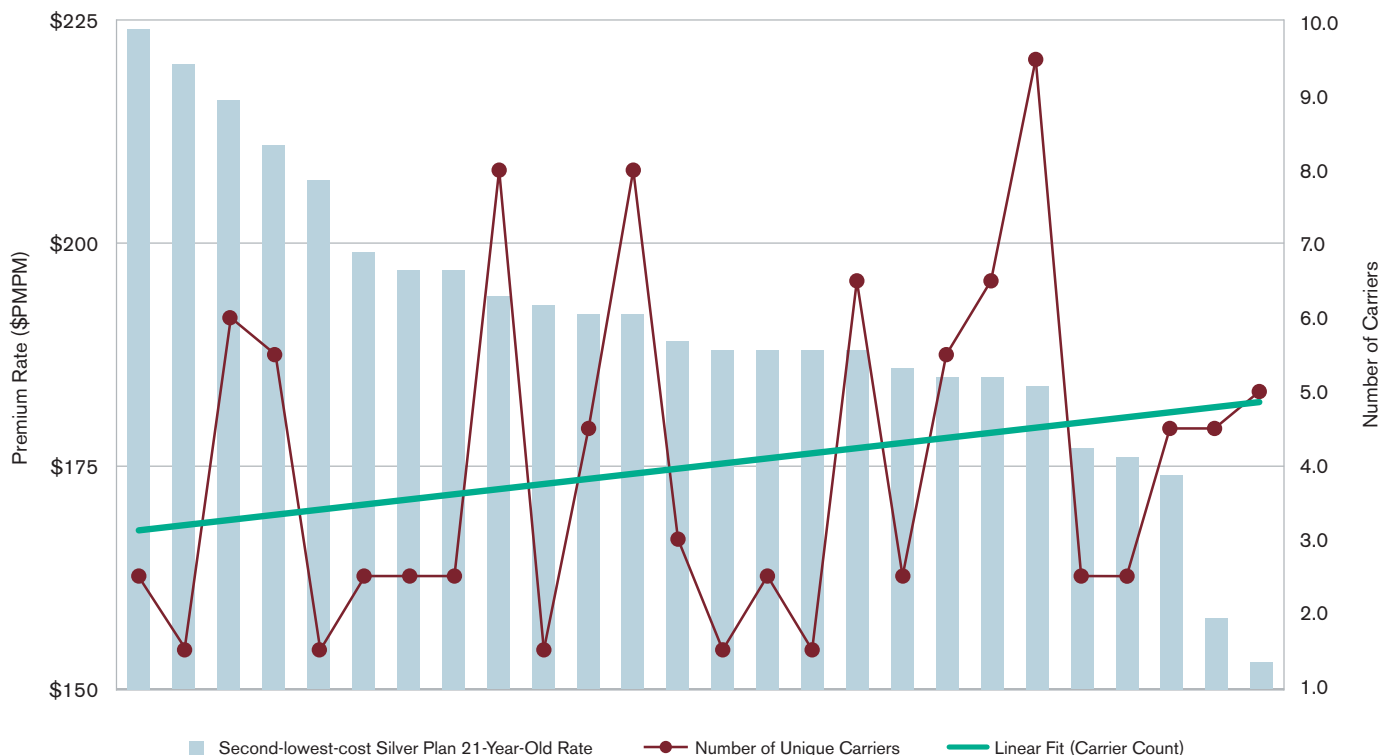
¹⁵ Per-member-per-month (PMPM) rates are summarized up from the county to area level using Medicare Advantage (MA) enrollment weighting. A star rating of 2.5 or less was used for this analysis.

¹⁶ Please note that our analysis does not directly prove causality, but does show strong support for it.

Key market forces and their impacts on premiums

The number of carriers on the exchange market, as well as the number of plans offered per carrier, prove to be highly correlated with the second-lowest-cost silver plan premium rates. As an illustrative example, Figure 1 shows premiums with carrier counts and Figure 2 shows premiums with the number of plans per carrier for each area (sorted in descending order by premium) in Texas, a state with a relatively large number of independent rating areas and the highest estimated number of potential marketplace enrollees¹⁷ of any of the federally facilitated states. Please note that the displayed graphs represent the average of 2014 and 2015 rates, counts, and percentages. Note also that each graph displays the second-lowest-cost silver plan rate as blue bars (left y-axis) for each rating area, and the independent variable of interest as a red line (right y-axis). The green trend line shown in each graph is a linear fit to the independent variable, but is not the predicted values of the regression. The green trend line is for illustrative purposes only.

FIGURE 1: SECOND-LOWEST-COST SILVER PLAN 21-YEAR-OLD RATE, AND NUMBER OF UNIQUE CARRIERS BY RATING AREA (TEXAS)

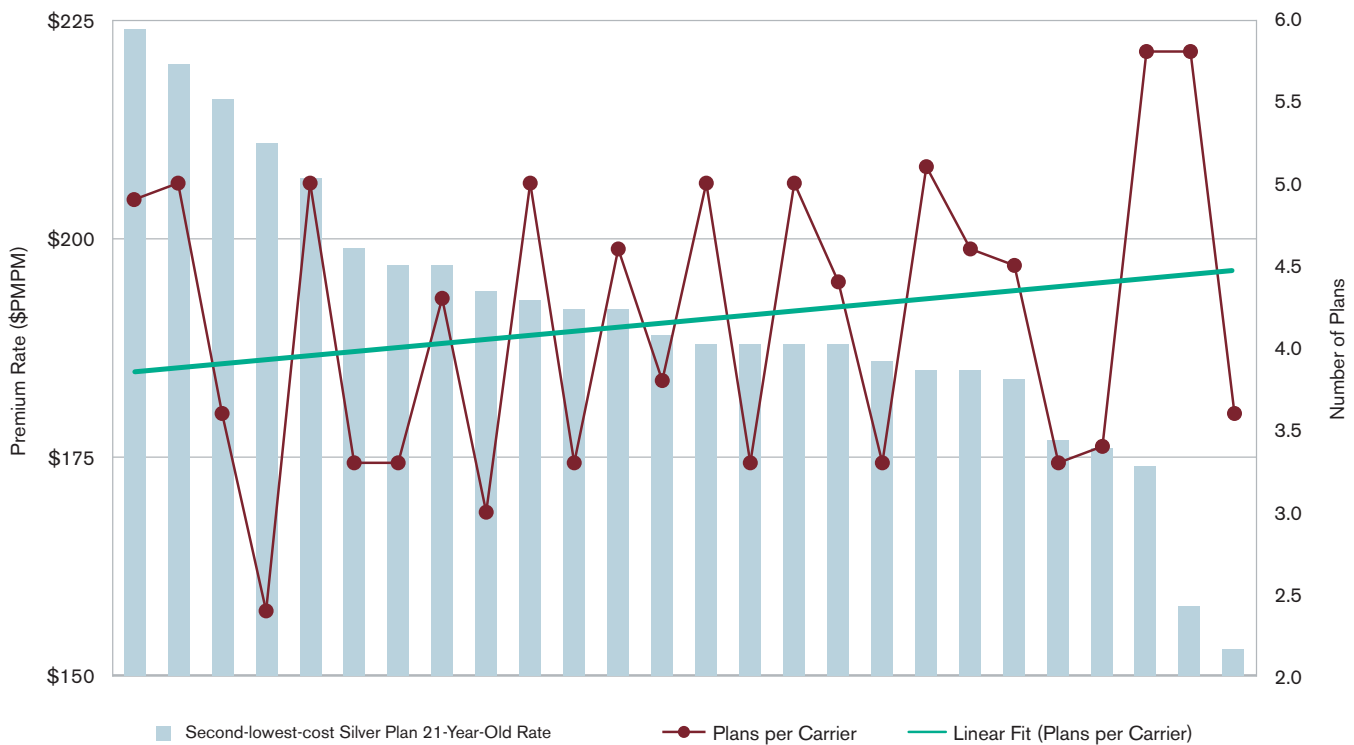


The green trend line¹⁸ in Figure 1 demonstrates a strong negative correlation between the average number of carriers on the exchanges and premiums. Each additional carrier in a given rating area decreases the second-lowest-cost silver plan premiums by about \$6.50 per month for a 21-year-old. The impact could be up to three times larger at older ages in states using the federal standard age rating factors.

17 Kaiser Family Foundation (April 19, 2014). "Marketplace Enrollment as a Share of the Potential Marketplace Population" ASPE.hhs.gov. Retrieved November 15, 2014, from <http://kff.org/health-reform/state-indicator/marketplace-enrollment-as-a-share-of-the-potential-marketplace-population/>.

18 Note that the green trend lines displayed in all graphs are simple linear fits to the independent variables for the example state (Texas). They are for illustrative purposes only and do not bear a direct relationship to the regression results discussed.

FIGURE 2: SECOND-LOWEST-COST SILVER PLAN 21-YEAR-OLD RATE, AND NUMBER OF PLANS PER CARRIER BY RATING AREA (TEXAS)



The green trend line in Figure 2 shows a strong negative correlation between the average number of plans per carrier on the exchanges and premiums. *Each additional plan per carrier in a given rating area decreases the second-lowest-cost silver plan premiums by about \$2.50 per month for a 21-year-old.*

Some of the impact observed for these two variables is the relationship between the number of plan offerings (driven by number of companies and plans per company) and the extreme ends of the premium range; as the number of overall plan offerings increases, it is normal for the highest premiums to increase and the lowest premiums to decrease. This happens through more extreme variations in plan designs as well as the effect of more competitors pricing with different assumptions and projections about the future level of morbidity and utilization.

As a test, we also looked at the overall market average premium levels for silver offerings in each rating area, and the premium impact of the number of plans per carrier was still statistically significant and negative (although to a lesser extent). Moreover, when looking at the overall market average, the number of carriers became an insignificant driver of premiums. This suggests that the combined premium impact of carriers and plans is strongest at the lower premium end of the market.

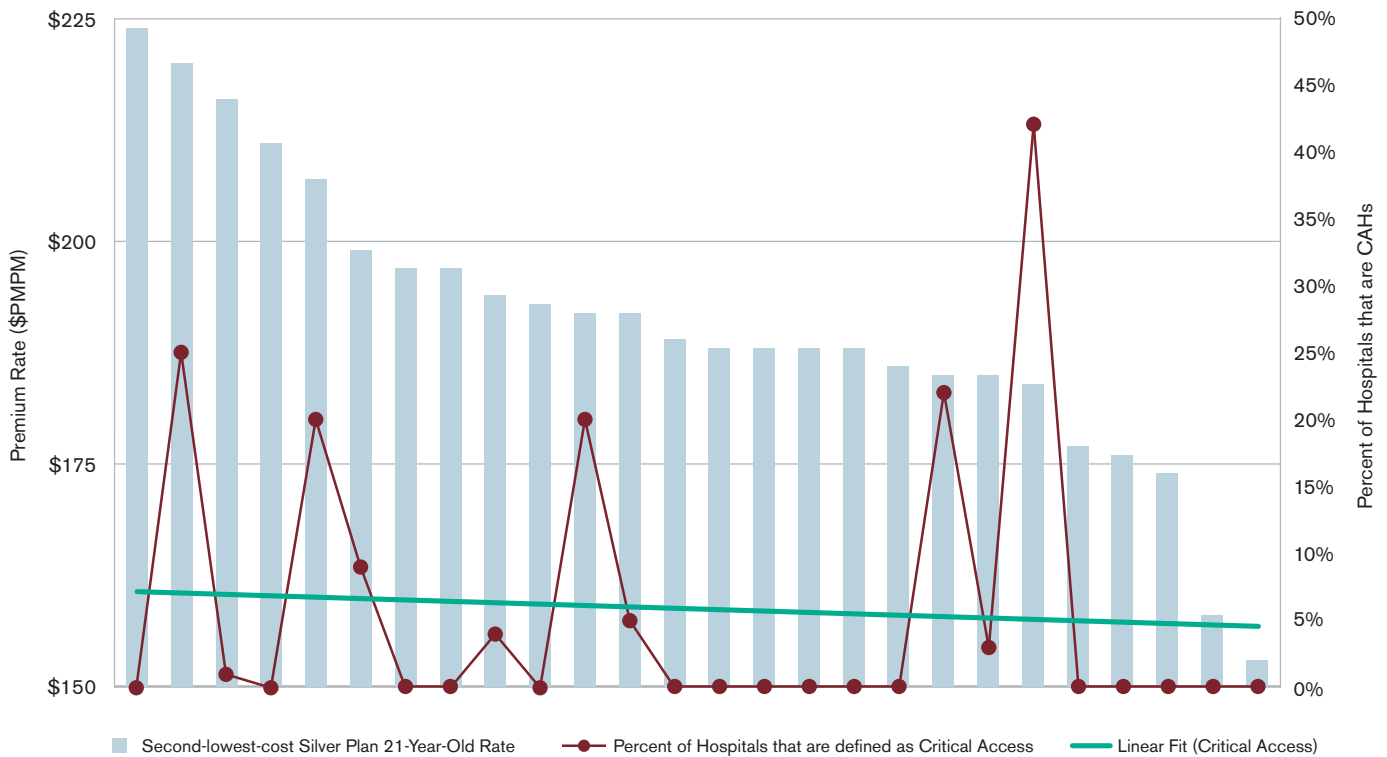
Even though some of the premium impact of the number of plans is a known and relatively obvious phenomenon, it is nevertheless telling. *The greater the number of carriers and silver plan options that are present, the lower the second-lowest-cost silver plan rate (and the resulting member subsidy) will be.* This may have important implications for carriers that are targeting subsidy-eligible cohorts within the population, especially in areas or states with relatively few competitors. Relatively leaner plan designs or narrow networks may attract a higher percentage of the market, but this may come at the cost of premium subsidy for members.

This subsidy reduction could then potentially reduce plan value for subsidy-eligible members, who will only have fully funded plans at or below this price, regardless of whether those plans are narrow network or offer any specific enticement benefits. For areas with numerous competitors or a high number of new entrants in 2015, there may be a “race to the bottom” to design the narrowest network and leanest benefit structure that will qualify as one of the two lowest premium levels and capture the majority of the subsidy-eligible population.

With 48 new entrants in the 34 states that participated in federally facilitated marketplaces in 2014, the impact could be significant for portions of the population. A particularly telling example is Georgia’s rating area 11,¹⁹ which saw five new entrants to the marketplace in 2015. In this rating area, the market saw a \$64 reduction in the second-lowest-cost silver plan premium for a 21-year-old.

Another important driver of exchange premiums is the proportion of critical access hospitals within a market. *An increase of 10 percentage points in the percent of hospitals that are critical access correlates with a premium increase of \$1 per month for a 21-year-old.* Critical access providers tend to be geographically isolated and have greater pricing power, which can lead to higher provider reimbursement rates that get passed on to members through higher premium rates. Figure 3 shows the relationship between premiums and the prevalence of critical access hospitals in Texas.

FIGURE 3: SECOND-LOWEST-COST SILVER PLAN 21-YEAR-OLD RATE, AND PERCENT OF HOSPITALS THAT ARE DEFINED AS CRITICAL ACCESS BY RATING AREA (TEXAS)

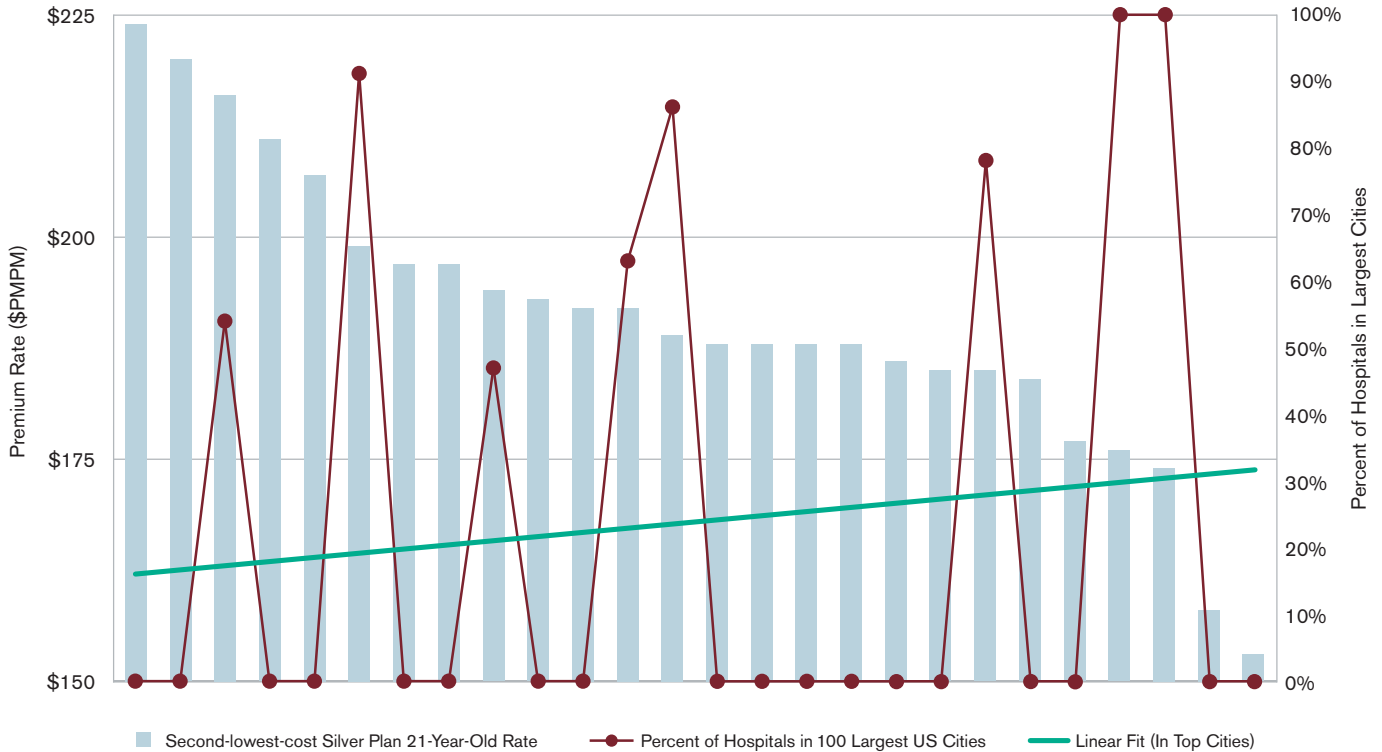


Note that while there is substantial variation in this relationship, most of the low premium areas have zero critical access hospitals, while almost none of the high premium areas do.

¹⁹ Comprised of the counties Atkinson, Coffee, Jeff Davis, Johnson, Laurens, Montgomery, Telfair, Toombs, Treulen, and Wheeler. The combined under-age-65 population in this area is over 160,000.

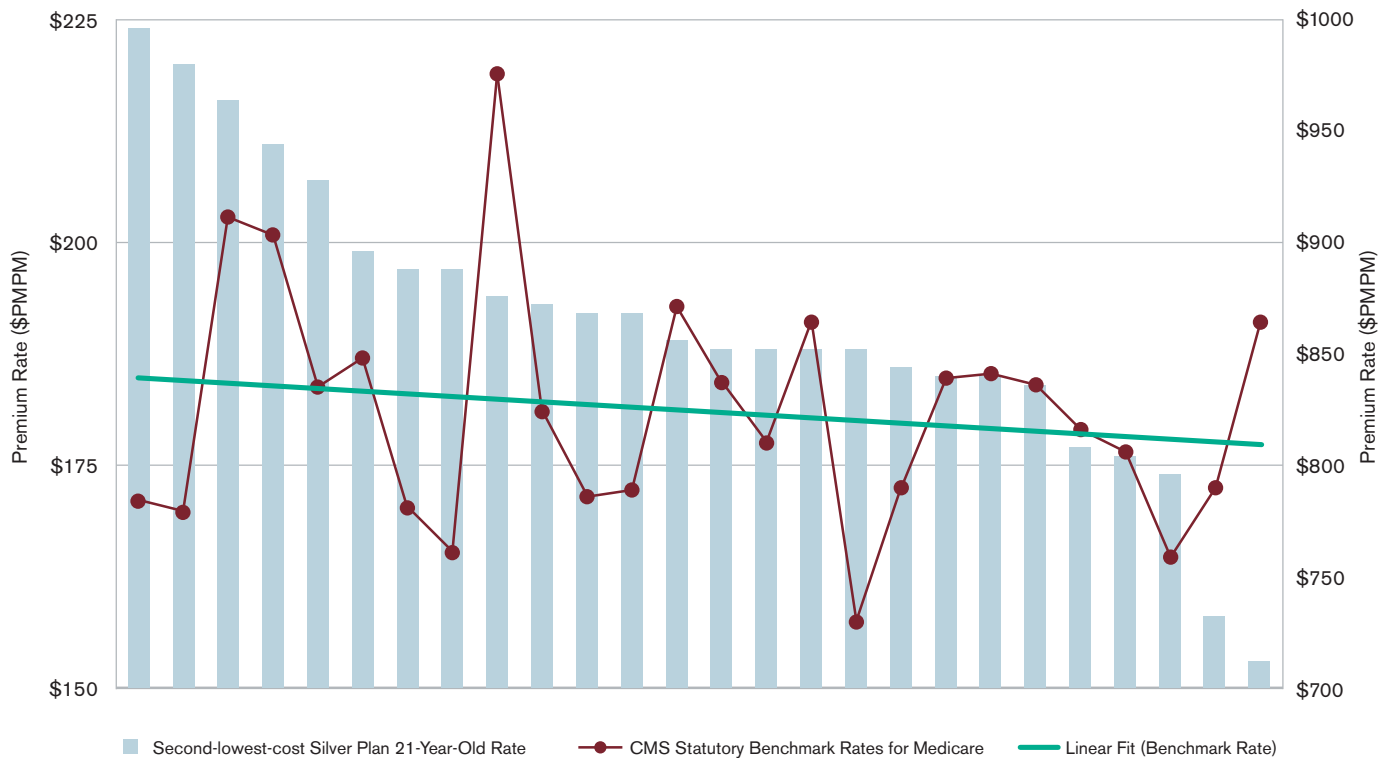
Another important consideration for ultimate premium levels is location. We identified the 100 largest U.S. cities by population, and measured the proportion of hospitals in each rating area located in one of these cities. An increase of 10 percentage points in the percentage of hospitals within the 100 largest U.S. cities correlates with a premium decrease of \$1.25 per month. In larger urban areas, providers might have relatively less pricing power, which can lead to lower provider reimbursement rates that result in lower member premiums. Figure 4 shows the relationship between premiums and hospital location relative to high-population-density areas in Texas.

FIGURE 4: SECOND-LOWEST-COST SILVER PLAN 21-YEAR-OLD RATE, AND PERCENT OF HOSPITALS THAT ARE IN THE 100 LARGEST U.S. CITIES BY RATING AREA (TEXAS)



Finally, the CMS Medicare benchmark rates are also correlated with premium rates. A \$10 decrease to an area’s average benchmark rates correlates with a premium decrease of \$0.50 per month. The correlation between these benchmarks and the exchange premiums is likely an indirect substitute, driven by common factors such as provider reimbursement and standards of care. However, the benchmark rates are known quantities in advance of the exchange pricing. As a consequence, it may be reasonable for companies to take these rates into account when estimating market premiums as a loose proxy for many of the market factors that the two may have in common. Figure 5 shows the relationship between premiums and the statutory benchmark rates in Texas.

FIGURE 5: SECOND-LOWEST-COST SILVER PLAN 21-YEAR-OLD RATE, AND CMS STATUTORY BENCHMARK RATES FOR MEDICARE BY RATING AREA (TEXAS)



Outlook for 2016 and beyond

As one might expect from a new health insurance program, the Federally Facilitated Marketplaces have seen a dramatic change in the competitive landscape from 2014 to 2015. A 29% net increase in the number of carriers (48 new entrants) in 2015 has had a large impact on premium rates in some areas. This marketplace instability will likely continue as the program develops, but may become relatively more stable in the coming years.

New entrants to the marketplace have the potential to lower rates for all consumers over the long term. However, it is possible that this effect will primarily be felt at the bottom end of the market, where companies are competing to be at or below the premium subsidy levels. Moreover, some subsidy eligible portions of the population could see higher subsidy-adjusted rates if they continue their 2014 plan selections when other plans come in with lower premiums. As the exchanges mature, though, market stabilization should limit extensive changes to subsidy levels.

Conversely, this kind of relationship could have the potential to reduce overall federal government exchange subsidies in relatively competitive markets, especially if it continues in the long term. The introduction of policies or regulations designed to encourage additional competition (such as strengthened support for the 3Rs programs, or subsidies or exemption from certain regulations for smaller insurers), could have the effect of lowering exchange market rates.

TECHNICAL APPENDIX

Data

The data for this research came primarily from the Qualified Health Plan (QHP) Landscape Individual Market Medical file (data.healthcare.gov). Other supplemental data was provided by:

- AHAdataviewer.com: Hospital-related metrics
- Census.gov: Population by state figures
- CMS.gov: 2014/15 statutory benchmark rates
- Aspe.hhs.gov: ACA-eligible population by state and carrier count comparisons
- KFF.org: Estimated potential ACA-eligible population

Carrier counts

In order to count the number of carriers on each state’s exchange, we removed duplicate names from the QHP landscape file. We also looked through each state and removed apparent duplicates in situations where different corporate names shared the same underlying parent. A state-specific example from 2014 comes from Arizona’s “Meritus Health Partners” and “Meritus Mutual Health Partners.” Another example is Humana, which in multiple states sells plans under both “Humana Health Plan, Inc.” and “Humana Insurance Company.” This is a deviation from the count of Health Insurance Oversight System (HIOS) IDs by the Office of the Assistant Secretary for Planning and Evaluation (ASPE), but it is more reflective of actual market conditions.

Plan counts

In each service area, we used unique combinations of Plan ID and member premium.

Statistical methods, main model

The data was analyzed using ordinary least squares (OLS) to estimate the regression coefficients for each variable at the area level. A fixed effects model was employed to account for unknown or unobtainable state and year level variables²⁰. P-values were compared to the standard normal distribution curve to assess the probability of the regression line. We employ heteroskedasticity and autocorrelation consistent (HAC) standard errors, clustering on state location to adjust for serial correlation of area level data. The adjusted R² shows model fit. The table in Figure 6 shows a description of the variables that went into the regression model:

$$\hat{Y} = \hat{\beta}_1 X_1 + \hat{\beta}_2 X_2 + \hat{\beta}_3 X_3 + \hat{\beta}_4 X_4 + \hat{\beta}_5 X_5 + \hat{\delta}_2 S_2 + \dots + \hat{\delta}_{37} S_{37} + \hat{\gamma}_2 T_2$$

FIGURE 6: LINEAR REGRESSION MODEL INPUTS

DEPENDENT VARIABLE	LABEL	DESCRIPTION
Second-lowest-cost silver plan premium rate (single 21-year-old)	Y	This metric shows the subsidy level in each rating area, and is a good metric to describe the most competitive premium rates.
INDEPENDENT VARIABLES	LABEL	DESCRIPTION
Number of carriers	$\beta_1 X_1$	This explanatory variable measures whether having more carriers in a rating area translates into lower premium rates through increased competition.
Number of plans per carrier	$\beta_2 X_2$	This variable acts as a proxy for plan design differences and narrow networks as carriers offering more plans are likely to have a wider dispersion of plan designs and network offerings.
Enrollment weighted 2014/15 statutory benchmark rates	$\beta_3 X_3$	This variable explores how ACA premiums compare to the rates that CMS will pay for Medicare.
Percent of hospitals that are defined as critical access	$\beta_4 X_4$	Critical access hospitals are geographically isolated “...and receive cost-based reimbursement for inpatient and outpatient services” ²¹
Percent of hospitals that are in the 100 largest U.S. cities	$\beta_5 X_5$	This variable represents differences in population density and provides some level of indication of provider network size.
A 1/0 variable indicating the state location of each observation	$\delta_2 S_2$ to $\delta_{37} S_{37}$	The binary variables representing each state as a fixed effect. Note that one state was excluded (AK) to avoid multicollinearity.
A 1/0 variable indicating if an observation is in 2015/2014	$\gamma_2 T_2$	The binary variable representing each year as a fixed effect. Note that 2014 was excluded to avoid multicollinearity.

²⁰ The main purpose of employing fixed effects is to remove omitted variable bias from variables that are unknown or unobtainable. Note that they increase the fit of the model.

²¹ American Hospital Association. AHA Data Viewer. Retrieved October 28, 2014, from <http://www.ahadataviewer.com>.

The table in Figure 7 shows the regression outputs.

FIGURE 7: LINEAR REGRESSION MODEL RESULTS (R²=0.7088)^{22,23}

INDEPENDENT VARIABLES	LABEL	RESULT	SIGNIFICANCE LEVEL (P-VALUE)
Number of carriers	$\beta_1 X_1$	The effect of adding one carrier to a rating area is a \$6.50 decrease to the most competitive premium rates.	<0.001%
Number of plans per carrier	$\beta_2 X_2$	The effect of having one more plan per carrier in a rating area is a \$2.50 decrease to the most competitive premium rates.	<0.001%
Enrollment weighted 2014/15 statutory benchmark rate	$\beta_3 X_3$	The effect of an areas statutory benchmark rate being \$10 higher is a \$0.50 increase in the most competitive premium rates.	1.91%
Percent of hospitals that are defined as critical access	$\beta_4 X_4$	The effect of having an additional 10% of hospitals in an area be defined as critical access is a \$1.00 increase in the most competitive premium rates.	0.73%
Percent of hospitals that are in the 100 largest U.S. cities	$\beta_5 X_5$	The effect of having an additional 10% of hospitals in an area be in the top 100 cities is a \$1.25 decrease in the most competitive premium rates.	0.89%
A 1/0 variable indicating the state location of each observation	$\delta_2 S_2$ to $\delta_{37} S_{37}$	This variable is dependent on which state is excluded from the regression. Since Alaska is removed (the state with the largest premiums on average), all of the coefficients are negative.	All P-values are <0.001%
A 1/0 variable indicating if an observation is in 2015/2014	$\gamma_2 T_2$	This variable is dependent on which year is excluded from the regression. Since 2015 rates are generally higher than 2014 rates, and 2014 was excluded; the premium impact of being in 2015 is \$15.	<0.001%

Statistical methods, alternative models

In the process of building our final regression, we tested many potential drivers of premium rates.²⁴ These variables included hospital statuses, hospital size (as measured by bed counts), Medicaid and Medicare utilization statistics, EHB benefits, and various enrollment variables. Variables were excluded based on lack of theoretical background, low statistical significance, or high correlation with an included variable.

We also tested other metrics of competitiveness (the dependent variable). These included the average of the lowest two through 15 silver plan premium rates, the average of all silver plan premiums, the conditional tail expectation, and the lowest silver plan premium. We chose the second-lowest-cost silver plan because it represents the benchmark rate used for subsidy calculations.

The average of the lowest five silver plan rates actually produces a stronger fit with the same independent variables. This is because the average low premium removes some of the noise associated with selecting one premium rate. A few plans with a low actuarial value and/or a narrow network will not skew the results as much as the second-lowest-cost silver plan rate.

22 An important part of the analysis was avoiding potential underlying correlations between predictive X variables. Multicollinearity was also a concern given the fixed effects model. Most of the above variables have low or very low correlations with each other; the highest being 23% between X_3 and X_5 .

23 The R² tends to increase as more predictive variables are added to the model (whether or not they have any predictive power). The adjusted R² corrects for this and equals 0.6928. Note that while these R² values are relatively high, it does not mean that the model is a perfect fit. Fixed effects account for a large portion of this fit.

24 We used bidirectional elimination, continually testing for variables to be included or excluded. Statistical significance and variable correlations were important considerations. Variable inclusion was ultimately decided by statistical fit and theoretical basis in driving competition on the marketplace.

Assumptions and limitations

Our analysis above was based on 2014 and 2015 data for single 21-year-old silver premiums, and only considered states that participated in the federally operated exchanges (34 in 2014 and 37 in 2015). Because Oregon, New Mexico, and Nevada did not use the federal application system in 2014, only 2015 premiums for those states were considered in our analysis.

Our analysis does not consider network composition, wellness incentives, additional benefits such as dental or vision, or other potentially relevant plan design features.

Our analysis is limited to 2014/2015 premium rates. Future rates may have materially different effects, especially starting in 2016 when rates will be at least in part based on actual exchange experience.

The main source of data for this research was from data.healthcare.gov. We also relied on data from the American Hospital Association, Census.gov, ASPE.HHS.gov, and KFF.org. If any portion of this data is incorrect or updated with additional information then the analysis will be impacted.

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