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Individual Market Underwriting
Profitability in Health Insurance

Patricia H. Born
E. Tice Sirmans



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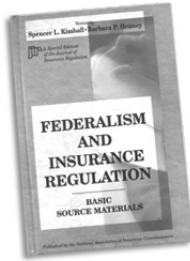
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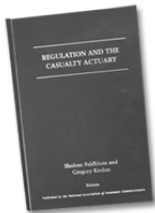
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Individual Market Underwriting Profitability in Health Insurance

Patricia H. Born*
E. Tice Sirmans**

Abstract

We analyze the underwriting performance of insurers operating in the individual health insurance market from 2010–2017. Our sample consists of both life and health insurance companies. First, we offer descriptive sample statistics of key financial performance measures in this market. Then, we study the difference in performance pre- and post-2014, which represents the year that state online marketplace exchanges were implemented as part of significant health care reform, namely the federal Affordable Care Act (ACA). Our analysis allows us to test whether health care reform affected insurers operating in this market and in what ways. Our results suggest that underwriting profitability was worse in the post-ACA period: Generally, loss ratios and losses per enrollee were significantly higher in the post-reform time period. On the other hand, insurer administrative expenses were significantly lower post-2014. Furthermore, we show that these effects are not uniform across all insurers in the market.

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1. Introduction

Despite its relatively small size, the individual market—i.e., non-group—for health insurance has long been regarded as the most unstable and controversial of health insurance markets in the U.S. Challenges to insurers operating in this market include greater susceptibility to adverse selection, severe rating restrictions, and higher administrative costs (Pauly and Nichols, 2002). While the enactment of the ACA affected nearly the entirety of the health care financing sector, the individual market was of particular focus. Provisions included: 1) the establishment of state-level online exchanges on which consumers in this market could more easily purchase affordable health insurance; 2) an individual mandate to purchase health insurance coverage; 3) the standardization of plans with guaranteed access and renewal; 4) cost-sharing subsidies for lower-income individuals; and 5) minimum requirements for insurers' expenditures on claims. Combined, these provisions transformed the landscape of the individual market.

In this paper, we evaluate the underwriting performance of insurers operating in the U.S. individual market for health insurance from 2010 to 2017. We analyze financial data from all insurers writing individual market health business, including life insurers. We evaluate loss ratios, losses per enrollee, and expense ratios for all insurers in the sample and a sub-sample (SS) consisting only of insurers that operated throughout the sample period. We analyze the difference in performance pre- and post-2014, which represents the year that the online marketplace exchanges were implemented. Our results suggest that the reform, namely the ACA, had little or no impact on average insurer loss ratios for the full sample (FS), but loss ratios significantly increased for the SS of insurers. We found that losses per enrollee increased significantly in both samples while insurer administrative expenses decreased. Furthermore, we show that these effects are not uniform across all insurers in the market.

The paper proceeds as follows. The second section offers background information. The third section presents our data and methodology. In the fourth section, we present our results. A final section offers a conclusion.

2. Background

While health insurance coverage in the U.S. has been available on an individual—i.e., direct-purchase, non-group—basis since the early twentieth century, the growth of the employer-sponsored market and the advent of Medicare and Medicaid quickly diminished the size of this market.¹ By 2010, when the ACA

1. Prior to the pre-paid hospital and physician services (e.g., Blue Cross and Blue Shield Association—BCBSA) plans of the 1920s and 1930s, “industrial sickness funds” were developed in the late 1800s by railroad companies to serve sick and injured employees; i.e., workers’ compensation plans (Murray, 2007). Additionally, private life insurers, during the time of pre-paid

was passed into law, the individual market represented only 7% of the total non-elderly market for health insurance.² Approximately 16% of the non-elderly population in the U.S. was uninsured at that time.³ The large percentage of the population without health insurance was one of the broad issues that the ACA was designed to address (Harrington, 2010). Key populations of non-elderly uninsureds included non-disabled adults without employer-sponsored coverage who were not eligible for Medicaid. Hence, significant provisions were included in the ACA to expand affordable and accessible health insurance coverage to this particular segment of the population.

Table 1 (see on page 4) lists the ACA provisions designed to specifically address issues in the individual market. In Panel A, we list provisions that are most likely to affect underwriting performance. In Panel B, we list provisions that are most likely to affect expenses. Other provisions that may indirectly affect underwriting performance and expenses are listed in Panel C. We recognize that each provision in the table may have consequences for multiple measures of performance. We discuss the theoretical effects of these provisions below.

The individual market is prone to two fundamental problems: higher administrative costs and increased potential for adverse selection. Operations in this market are more administratively costly when compared to group health insurance. Prior to the ACA, the largest share of non-group operation costs for health insurers was the cost of selling the policies (Pauly and Nichols, 2002). Therefore, the implementation of online exchanges and the standardization of plans sold on those exchanges had the potential to lower the administrative costs associated with this market. In general, the exchanges may have afforded an opportunity for insurers to increase participation in the individual market.⁴

The minimum medical loss ratio (MLR) requirements are likely to have affected health insurer performance, as well. Health insurers writing business in the individual market must maintain a minimum MLR of 80%; i.e., at least 80% of premiums earned in this market must be spent on claims and other allowable expenses. The NAIC was charged with the responsibility of establishing definitions and methodologies for calculating the MLR and the associated rebate amounts, including providing a definition of allowable quality improvement activities. While

plans, began selling group health insurance policies to employers, but the major growth of those plans was seen following wage controls of the 1940s and changes to the Internal Revenue Code (IRC) in the 1950s (Morrisey, 2014).

2. Source: U.S. Census Bureau, Current Population Survey, 2011 Annual Social and Economic Supplement.

3. Source: Cohen, Martinez and Zammitti (2015) Health Insurance Coverage Trends 1959–2017. In the years following the enactment of the ACA provisions, the rate of uninsured has declined from 16% in 2010 to roughly 9% in 2016 (U.S. Census, 2017). While this decline can be partially attributed to the expansion of the individual market, other provisions such as the extension of coverage to young adult dependents and the Medicaid expansion also contributed to this decrease.

4. Rating areas were established by each state. Plans offered on the exchanges were subject to specific regulation. Insurers were not required to operate on the exchanges. See Morrisey, et al (2017) for a more complete discussion on the exchanges and evidence of competition.

the administrative costs are not included in the calculation of the minimum requirements, the costs associated with improving health care quality are allowable in the calculation of the MLR.⁵

**Table 1:
Provisions in the ACA**

Panel A: Provisions that may affect underwriting performance	
Individual mandate (Section 1501)	Requires health insurance coverage with few exceptions; enforced from 2014 to 2018; income tax penalty for noncompliance
Adjusted (modified) community rating (Section 2701)	Required for all non-grandfathered plans in the individual and small group markets; rating adjustments are made for age (with limitations), geographic location, family size and tobacco usage
Guaranteed coverage and renewal (Sections 2702/2703)	Plans sold in the individual and small group markets are sold on a guaranteed issue and renewal basis
Pre-existing conditions prohibited (Section 1101)	Eliminates medical underwriting in the individual and small group markets
Risk corridor program (Section 1342)	Temporary (2014–2016); limits health insurer gains or losses beyond allowable range
Risk adjustment program (Sec. 1343)	Permanent; redistributes funds between plans with low- and high-cost enrollees through payments made from plans with lower actuarial risk to plans with higher risk for non-grandfathered individual and small group plans both on and off the exchanges
Reinsurance program (Section 1341)	Temporary (2014–2016); provides payment to plans that enroll high-cost enrollees
Minimum medical loss ratio (MLR) requirements (Section 2718)	Enacted in 2011; health insurers operating in the individual and small group markets must maintain minimum MLRs of 80%; noncompliance requires rebates paid to plan enrollees
Panel B: Provisions that may affect expenses	
Online marketplace exchanges (Section 1311)	Enacted Jan. 1, 2014; transparent, competitive, easily navigated websites specifically for the sale of plans in the individual and small group markets
Standardized exchange plans (Section 1302)	Exchanges offer four tiers of coverage: bronze, silver, gold and platinum (plus a catastrophic plan)
Essential health benefits (Section 1302)	10 essential health benefits (e.g., emergency, hospitalization, etc.) required for all plans sold on exchanges
Panel C: Provisions that may affect the individual market	
Premium tax credits (Section 1401)	Reduces plan costs through tax credits for premiums paid up to 400% of the federal poverty level
Cost-sharing reductions (Section 1402)	Reduces out-of-pocket exposure and includes payments for deductibles, coinsurance, and/or out-of-pocket maximum paid on the plan to eligible enrollees up to 400% of the federal poverty level

Along with increased expenses associated with operating in the individual market, health insurers operating in this market are more susceptible to adverse selection. Comprehensive underwriting is often the solution to mitigating adverse selection in insurance markets. Restrictive rating, through the mandated use of adjusted community rating, may have increased the potential for adverse selection in the individual market following the enactment of the ACA. However, the

5. Initially, in 2011, health insurers paid out more than \$1 billion in rebates following the enactment of minimum MLR requirements (Hall and McCue, 2013). That number was reduced to \$332 million in 2013 (Kirchhoff and Mulvey, 2014).

individual mandate was designed to manage the issue of adverse selection by forcing large numbers of potentially low-risk enrollees into the pool.⁶ Additionally, the risk adjustment and reinsurance programs were designed to mitigate problems associated with adverse selection through the spreading of financial risk across markets.^{7,8}

Ultimately, there were several provisions within the ACA that had the potential to affect the underwriting performance of health insurers operating in the individual market. Some, such as the standardization of benefits and the individual mandate, may have a positive effect on performance while others, including the limitations on rating, may be more problematic. While theory offers *a priori* expectations as to the effects of each provision independently, the joint impact of the various provisions on insurer performance must be derived empirically.

3. Data and Methodology

Data

For this analysis we use data from the NAIC. We collect information from the Supplemental Health Care Exhibit—Part 1 as reported annually by state from 2010 to 2017 by health insurers and life insurers writing health insurance business.⁹ While we are primarily interested in the individual health insurance market, we use data on all health insurers to confirm that reported administrative expenses are greater in the individual market than in the group market. We found that health insurers spent, on average over the sample period, significantly more on general administrative expenses per member per month in the individual market compared to the same expenses in the large group market.¹⁰

For our primary analysis, we use data on premiums, claims, expenses and member months, and then we supplement this basic information with insurer characteristics. To ensure a reasonable insurer-state-year sample of health insurers,

6. See Born and Sirmans (2018) for arguments associated with the potential for adverse selection in this market following the enforcement of adjusted community rating and evidence of adverse selection in the individual market for health insurance.

7. See NAIC (2011) for a discussion of adverse selection in the health insurance exchanges and key ACA provisions designed to address the problem of adverse selection.

8. See Cox, Semanskee, Claxton and Levitt (2016) for a more complete review of the risk adjustment, risk corridors and reinsurance programs.

9. See Cole and Karl (2015); Born, McCullough and Karl (2016); Born, Karl and Viscusi (2017); and Karaca-Mandic, Abraham and Simon (2015) for other studies that utilize the NAIC health insurer statutory filings.

10. Health insurers spent, on average, \$216.33 in the individual market versus \$121.72 in the large group market on general administrative expenses. The median that health insurers spent on general administrative expenses in the individual market was \$33.21 compared to \$26.49 spent on the same expenses in the large group market.

we include insurers writing business in any state with the exception of California.¹¹ Insurers must be operating in the individual market with greater than \$10,000 in state-year net-adjusted premiums earned after reinsurance, positive net incurred claims after reinsurance, greater than 1,000 member months in the individual line of business, and positive expenses.¹² Our final sample includes 5,042 insurer-state-year observations.

We evaluate changes over time in three measures of insurance performance: *Loss Ratio*, *LossesPerEnrollee* and *ExpenseRatio*. The enactment of the exchanges on Jan. 1, 2014, marks a time period of transformation for the individual market. Thus, our key independent variable of interest, *Post2014*, is a binary variable equal to one for years 2014–2017. Variable definitions are presented in Table 2.

Table 2:
Variable Definitions

Variable ¹	
<i>LossRatio</i>	Net incurred claims after reinsurance/net adjusted premiums earned after reinsurance
<i>LossesPerEnrollee</i>	Net incurred claims after reinsurance/enrollee
<i>ExpenseRatio</i>	Sum of total claims adjustment expenses and total general and administrative expenses/net adjusted premiums earned after reinsurance
<i>MemMosIndiv</i>	Member months individual market
<i>Size</i>	Natural logarithm of total member months
<i>UWLoss</i>	1 if insurer reported total net loss (line 15), 0 otherwise
<i>RecRiskAdj</i>	1 if insurer received premium adjustments through the permanent ACA risk adjustment program, 0 otherwise
<i>ClaimsAdjExp</i>	Line 8.3, total quality expenses/member month, individual market
<i>AdminExp</i>	Line 10.5, total administrative expenses/member month, individual market
<i>PctNonRiskBearing</i>	Member months uninsured plans/total member months
<i>PctPremGov</i>	Line 1.8, total adjusted premiums, government lines/total adjusted premiums
<i>PctPremIndiv</i>	Line 1.8, total adjusted premiums, individual market/total adjusted premiums
<i>PctPremGroup</i>	Sum of total adjusted premiums in small group and large group/total adjusted premiums
<i>LifeIns</i>	1 if insurer reports as life insurer, 0 otherwise
<i>NumIns</i>	Number of insurers with positive premiums in the individual market, by state

1. Line numbers reference the Supplemental Health Care Exhibit—Part 1 as reported in 2017.

Table 3 presents sample summary statistics for the two time periods of interest. We note that while mean loss ratios are below one in both time periods, the combination of mean loss ratios and mean expense ratios suggest overall performance losses. T-tests of the means and Wilcoxon rank-sum tests of the medians show significant differences in each of the variables listed in Table 3 for

11. Health insurer reporting differs for health insurers operating and/or domiciled in California. Thus, we follow prior literature and exclude business reported in California and/or insurers domiciled in California. See Cole, He, and Karl, (2015).

12. We note that in the years 2014–2017, there are 798 insurer-state-year observations where health insurers report negative adjusted premiums. We do not include these insurers in the sample.

the pre- and post-2014 periods. All differences are statistically significant at the 1% level.

Table 3:
Summary Statistics

Variable	2010–2013			2014–2017		
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
	N=2929			N=2113		
<i>LossRatio</i>	0.8566	0.7998	0.5139	0.9640	0.8903	0.7194
<i>ExpenseRatio</i>	0.2373	0.1853	1.0385	0.1688	0.1344	0.2009
<i>LossesPerEnrollee</i>	253.87	169.17	795.90	338.77	293.07	334.54
<i>MemMosIndiv</i>	144,793.2	15,496	433,260.3	305,944.2	68,026	756,462.4
<i>Size</i>	12.4459	12.4303	2.5070	13.3721	13.5605	2.3126
<i>UWLoss</i>	0.3103	0	0.4627	0.4136	0	0.4926
<i>RecRiskAdj</i>	0	0	0	0.7350	1	0.4415
<i>ClaimsAdjExp</i>	1,213,071	119,244	4,825,577	3,087,032	496,108	1,000,000
<i>AdminExp</i>	4,197,224	526,039	13,000,000	10,300,000	2,170,277	26,000,000
<i>PctNonRiskBearing</i>	0.0612	0	0.4627	0.0900	0	0.2000
<i>PctPremGov</i>	0.1016	0	0.2234	0.1187	0	0.2562
<i>PctPremIndiv</i>	0.2559	0.0663	0.3470	0.3471	0.1859	0.3538
<i>PctPremGroup</i>	0.2299	0.0007	0.3270	0.3440	0.3080	0.3285
<i>LifeIns</i>	0.6842	1	0.4649	0.3923	0	0.4884
<i>NumIns</i>	19.5971	19	8.0752	15.0776	14	7.0956

The ACA provisions have a variety of potential consequences, noted above, for the financial performance of insurers operating in this market. It is important to note that these provisions may have had even more far-reaching effects on market structure; i.e., to the extent that the provisions were viewed favorably [unfavorably], insurers may have elected to enter [exit] the individual market. We show in Table 4 that the number of insurers in the sample decreased over the eight-year period covered by our sample.

Table 4:
Number of Insurers, by Year

Year	Number of State-Insurers
2010	753
2011	814
2012	663
2013	699
2014	628
2015	582
2016	505
2017	398

Methodology

To test the differences in health insurer individual market performance pre- and post-2014, we estimate the following equations for insurer (i) in state (s) at year (t) using Ordinary Least Squares (OLSs):

$$LossRatio_{ist} = f(X'_{ist}\beta + \mu_i + \delta_s + \gamma_t) + \epsilon_{ist} \quad (1)$$

$$LossesPerEnrollee_{ist} = f(X'_{ist}\beta + \mu_i + \delta_s + \gamma_t) + \epsilon_{ist} \quad (2)$$

$$ExpenseRatio_{ist} = f(X'_{ist}\beta + \mu_i + \delta_s + \gamma_t) + \epsilon_{ist} \quad (3)$$

where X is a vector of controls including *Post2014*, *Size*, *PctNonRiskBearing*, *LifeIns*, *PctPremGroup*, *PctPremGov*, *RecRiskAdj*, *UWLoss* and *NumIns* for insurer (i) in state (s) at year (t). The terms μ_i , δ_s and γ_t account for time-invariant insurer, state, and year indicators, respectively, that control for unobserved heterogeneity. The equations are estimated for the FS of insurers as well as a SS consisting only of insurer-state observations that remain in the sample for all eight years.

The results obtained from estimating equations (1), (2) and (3) using OLSs provide a sense of how the performance of an average insurer in the individual market has changed, pre- and post-ACA, all else equal. We recognize, however, that the insurers in this market may be differentially affected, depending on whether they are already high- or low-performers, based on our performance measures. For example, insurers that were profitable in the period before the ACA may get marginally less of a benefit from a provision, such as the individual mandate, than an insurer that was less profitable. To evaluate the potential differential effects across insurers, we re-estimate the three equations using a quantile regression methodology and evaluate the effects at five quantile levels (10th, 25th, median, 75th and 90th).

4. Results

Table 5 (see on page 10) presents the results of our estimation of equations (1), (2) and (3) using OLS methodology. The estimated coefficient on *Post2014*, shown in Column (1), indicates that there is no statistically significant difference in the *LossRatio* between pre- and post-2014 for our FS. This is perhaps not surprising given that the provisions of the ACA that affected underwriting operations had, at least theoretically, the potential to increase or decrease underwriting performance. While underwriting performance might worsen *Post2014* due to a larger number of individuals in the market and restrictive rating, the individual mandate for coverage, which may have forced previously low-risk applicants into the pool, may have mitigated any adverse consequences to loss ratios across this time period. However,

for the SS shown in Column (4), the coefficient on *Post2014* is positive and statistically significant at the 5% level. This result suggests that, for insurers operating throughout this time period, loss ratios are approximately 0.07 higher in the years following 2014, which represents an 8% increase in loss ratios at the mean. In Columns (2) and (5), we show the results where our dependent variable is *LossesPerEnrollee*. In these equations, we can see the impact on the underwriting performance without the effects of the premium fluctuations that may have occurred over this time period. In both samples, we note that *LossesPerEnrollee* are significantly higher in the *Post2014* time period (approximately \$189 per enrollee for the FS and \$167 per enrollee for the SS, or increases of 75% and 61%, respectively, at the mean) when compared to the pre-2014 period.¹³ In Columns (3) and (6), we show that the *ExpenseRatio* is significantly lower in the *Post2014* time period when compared to the pre-2014 period for both samples. The *ExpenseRatio* decreases by nearly 6% in both the FS and the SS, representing reductions of 29% and 40%, respectively, at the mean. These results suggest that provisions of the ACA had an overall benefit in reducing costs, despite the potential to add costs in some areas (e.g., reporting requirements). The introduction of the exchanges and standardization of plans may have both reduced barriers to entry in this market and created economies of scale in which insurers could more efficiently sell and administer plans to those in the individual market.

Table 6 (see on page 10) shows the results from estimating equations (1), (2) and (3) using a quantile regression methodology for both the FS and the SS. We present only the estimated coefficients for our *Post2014* variable, to focus on the potential for differential effects across the distribution of insurers. First, we note that the estimated effects of *Post2014* vary in a significant way across the distribution of both performance measures, confirming our suspicion that insurers may have been affected differentially based on their prior performance. Loss ratios appear to have increased for most insurers in the individual market. Insurers at the 90th percentile (FS) in loss ratios—i.e., the most unprofitable in an underwriting sense—appear not to be affected, while the rest of the distribution shifts upward, suggesting worse performance for health insurers in the lower part of the distribution. In the SS, loss ratios increased significantly for insurers in the lower three quantiles. The estimated effect of *Post2014* on *LossesPerEnrollee* is positive and statistically significant at the 1% level across the distribution for both samples, suggesting that most, if not all, insurers have experienced an increase in losses paid per enrollee during the *Post2014* time period. The estimated effect of *Post2014* on expenses tells a different story: Insurers with the highest expense ratios appear to have benefited more than those insurers in the lower part of the distribution, based on a comparison of the magnitude of the coefficients on *Post2014* across the quantiles.

13. We also evaluated our models with indicators for each year, 2010–2017, omitting 2014, and analyzed the coefficients on each year indicator. These results (not shown) show that significant coefficients in years prior to 2014 are negative for the loss ratio and losses per enrollee, and they are positive for the expense ratio. The coefficients in years post-2014 are primarily positive and significant for the loss ratio and losses per enrollee, but they are insignificant for the expense ratio.

Table 5:
OLS Regression Results

	Full Sample (FS)			Sub-Sample (SS)		
	(1)	(2)	(3)	(4)	(5)	(6)
	<i>LossRatio</i>	<i>LossesPerEnrollee</i>	<i>ExpenseRatio</i>	<i>LossRatio</i>	<i>LossesPerEnrollee</i>	<i>ExpenseRatio</i>
<i>Post2014</i>	-0.0454 [0.057]	188.9872*** [48.835]	-0.0584*** [0.018]	0.0768** [0.034]	167.1894*** [23.085]	-0.0561*** [0.010]
<i>Size</i>	-0.0705*** [0.015]	-10.2811 [12.637]	0.0012 [0.005]	0.0170 [0.014]	-10.3532 [9.702]	-0.0073* [0.004]
<i>PctNonRiskBearing</i>	0.1355 [0.124]	-73.1746 [106.843]	0.0014 [0.039]	-0.0233 [0.065]	47.9557 [44.167]	-0.0815*** [0.019]
<i>LifeIns</i>	0.0379 [0.073]	-28.5241 [63.020]	0.0841*** [0.023]	0.0030 [0.049]	-33.6667 [33.050]	0.0808*** [0.014]
<i>PctPremGroup</i>	0.2078*** [0.056]	44.9200 [47.867]	0.0458*** [0.017]	-0.0029 [0.038]	33.1356 [25.758]	0.0401*** [0.011]
<i>PctPremGov</i>	0.0904 [0.064]	28.1808 [55.164]	0.0145 [0.020]	-0.0222 [0.042]	22.6375 [28.683]	0.0003 [0.012]
<i>RecRiskAdj</i>	-0.0543 [0.036]	71.2624** [30.552]	0.0030 [0.011]	0.0322* [0.018]	43.9565*** [12.561]	-0.0125** [0.005]
<i>UWLoss</i>	0.1549*** [0.020]	29.0102* [17.509]	0.0207*** [0.006]	0.0608*** [0.013]	27.3049*** [9.071]	0.0103*** [0.004]
<i>NumIns</i>	-0.0098** [0.004]	0.2681 [3.354]	-0.0008 [0.001]	0.0003 [0.002]	0.5297 [1.419]	0.0017*** [0.001]
<i>cons</i>	2.0359*** [0.314]	267.8942 [270.095]	0.2642*** [0.098]	0.5400*** [0.207]	230.7240 [140.537]	0.2651*** [0.061]
R-Sq.	0.495	0.665	0.971	0.342	0.552	0.514
N	5042	5042	5042	1624	1624	1624

Standard errors in brackets

Note: Standard errors are in parentheses. Year, state and insurer indicators are used but not displayed.

* p<0.10, ** p<0.05, *** p<0.01

Table 6:
Estimated Effect of *Post2014* from Quantile Regressions for Full Sample (FS) and Sub-Sample (SS)

	10%	25%	Median	75%	90%
<i>LossRatio</i> (FS)	0.0854*** [0.028]	0.1207*** [0.05]	0.1140*** [0.013]	0.0730*** [0.020]	-0.0026 [0.054]
<i>LossRatio</i> (SS)	0.0531*** [0.025]	0.0900*** [0.015]	0.0909*** [0.015]	0.0266 [0.023]	-0.0172 [0.044]
<i>LossesPerEnrollee</i> (FS)	132.702*** [9.975]	157.419*** [7.837]	208.940*** [8.924]	250.706*** [16.956]	258.587*** [37.345]
<i>LossesPerEnrollee</i> (SS)	141.700*** [10.425]	153.354*** [8.555]	177.900*** [11.418]	170.641*** [24.176]	165.000*** [46.482]
<i>ExpenseRatio</i> (FS)	-0.0247*** [0.006]	-0.0510*** [0.06]	-0.1005 [0.007]	-0.1371*** [0.009]	-0.1118*** [0.021]
<i>ExpenseRatio</i> (SS)	0.0002 [0.009]	-0.0078 [0.006]	-0.0400*** [0.007]	-0.0827*** [0.009]	-0.1051*** [0.020]

Standard errors in brackets

Sample size: N=5042 (FS) and N=1624 (SS)

Note: Standard errors are in parentheses. Year, state and insurer indicators used but not displayed.

* p<0.10, ** p<0.05, *** p<0.01

5. Conclusion

In this paper, we analyzed the underwriting performance of insurers operating in the individual health insurance market from 2010 to 2017, a period of major reform in the U.S. health care market, using a panel of firm-state-year observations consisting of both life and health insurance companies. We found that insurer underwriting performance, captured by the loss ratio on insurer-state individual health insurance business, on average, was not affected in the post-ACA time period for insurers in our FS. However, for a SS consisting only of insurers operating over the whole sample period, the loss ratio increased significantly in the post-ACA time period. In addition to evaluating the loss ratio, we analyzed performance based on losses paid per enrollee and found that losses paid per enrollee increased significantly in the time period following the enactment of key ACA provisions. We found that the expense ratio had declined significantly for all insurers, and that this is especially true for insurers with *a priori* higher expense ratios.

Overall, our results suggest that provisions in the ACA have had a differential effect on aspects of insurer operations; i.e., their ability to effectively price coverage and manage expenses. Although we are not able to disentangle the specific effects of each provision, we can conclude that the combined influence of the ACA provisions has far-reaching implications for this market. A large number of insurers have exited the market, and for those that continue to participate, it may be difficult to reduce expenditures any further. Regulatory attempts to ensure that the market does not completely unravel must recognize that the remaining insurers need opportunities to recover on the underwriting side, especially if one key provision—the individual mandate—will be eliminated at the end of this year.

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