November 2012

Issue Brief

Small Firm Self-Insurance Under the Affordable Care Act

Matthew Buettgens and Linda J. Blumberg
The Urban Institute

ABSTRACT: The Affordable Care Act changes the small-group insurance market substantially beginning in 2014, but most changes do not apply to self-insured plans. This exemption provides an opening for small employers with healthier workers to avoid broader sharing of health care risk, isolating higher-cost groups in the fully insured market. Private stop-loss or reinsurance plans can mediate the risk of self-insurance for small employers, facilitating the decision to self-insure. We simulate small-employer coverage decisions under the law and find that low-risk stop-loss policies lead to higher premiums in the fully insured small-group market. Average single premiums would be up to 25 percent higher, if stop-loss insurance with no additional risk to employers than fully insuring is allowed—an option available in most states absent further government action. Regulation of stop-loss at the federal or state level can, however, prevent such adverse selection and increase stability in small-group insurance coverage.

★ ★ ★ ★ ★

OVERVIEW

The Patient Protection and Affordable Care Act will substantially change the organization and market rules of the small-group insurance market, beginning January 1, 2014. Reforms focus on improving access to and adequacy of coverage, while increasing transparency and accountability of insurance products, but will also significantly increase the sharing of health care risk across employers and their workers. Through modified community rating, provision of essential health benefits, prohibition of preexisting condition exclusions, and increased standardization of cost-sharing burdens via defined actuarial value tiers, fully insured small-group coverage under the Affordable Care Act is expected to create more stable premium pricing from year to year and across groups, regardless of the health status of the workers and their dependents. However, broader based sharing of risks means that small employers with younger and healthier employees than average or those that have purchased more narrow benefits in the past

The mission of The Commonwealth Fund is to promote a high performance health care system. The Fund carries out this mandate by supporting independent research on health care issues and making grants to improve health care practice and policy. Support for this research was provided by The Commonwealth Fund. The views presented here are those of the authors and not necessarily those of The Commonwealth Fund or its directors, officers, or staff.

For more information about this study, please contact:

Matthew Buettgens, Ph.D.
Senior Research Associate
Health Policy Center
The Urban Institute
mbuettgens@urban.org

To learn more about new publications when they become available, visit the Fund's Web site and register to receive e-mail alerts.

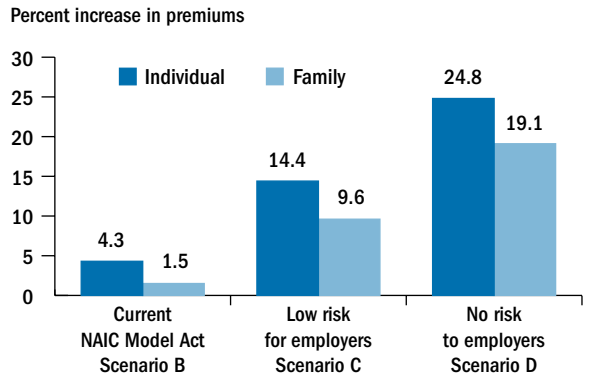
Commonwealth Fund pub. 1647
Vol. 30

may experience somewhat higher premiums, at least at a point in time.

While the law introduces these reforms nationally into the fully insured small-group market, they do not apply to self-insured group plans, regardless of the size of the employer. This exemption provides a potential avenue for small employers with healthier worker and dependent profiles to avoid participating in the broader-based insurance risk pools and instead take advantage of experience rating as a self-funded plan. In addition, because the fully insured small-group markets will be guaranteed issue with limited waiting periods and no preexisting condition exclusions allowed, small employers could self-insure during "good" times, accruing savings from having healthier-than-average employees, then enter the fully insured market during "bad" times, and again accrue savings from having their higher medical costs shared by the wider small-group market. If permitted, this dynamic will create adverse selection in the fully insured market, where higher-than-average risks concentrate in particular plans or markets, increasing their relative costs and potentially compromising their viability.

This analysis uses the Urban Institute's Health Insurance Policy Simulation Model (HIPSM) to estimate the magnitude of the effect of adverse selection of small-group self-insurance on premiums and coverage in the fully insured market under the Affordable Care Act. We compare the extent of self-insurance and its implications under several policy scenarios within the auspices of state and federal legal authority, demonstrating the sensitivity of likely outcomes to regulatory limits on the structure of private stop-loss policies that are generally necessary to make small-firm self-insurance feasible. We find that if states or the federal government do not effectively regulate stop-loss policies or restrict access to stop-loss policies for small employers, coverage in fully insured small-group insurance will be substantially lower and premiums will be significantly higher. Without such steps, new incentives created by the Affordable Care Act will increase self-insurance among small employers, drawing many of the healthier firms out of the fully insured market and increasing premiums for those who remain. However, if the stop-loss parameters recently recommended by an actuarial subgroup of the National Association of Insurance Commissioners (NAIC) are uniformly adopted, such adverse selection would be prevented.

Exhibit 1. Percentage Difference in Small-Group Fully Insured Premiums Compared with the NAIC Actuarial Subgroup's Recommendation



Note: NAIC = National Association of Insurance Commissioners.
Source: Health Insurance Policy Simulation Model (HIPSM), The Urban Institute, 2012. Simulations done as if the Affordable Care Act was fully implemented in 2012.

The NAIC's actuarial subgroup recommends that stop-loss deductibles—also known as "attachment points"—be set at a minimum of $60,000 per insured individual. The suggested parameters would expose small employers to significant financial risks if self-insuring and would dissuade the vast majority from doing so. As a result, under this approach, average premiums in the fully insured small-group market would be lower than under a scenario with looser stop-loss regulations or none at all. If these recommendations were implemented in a uniform manner nationally, average fully insured small-group premiums under the law would be up to 25 percent lower than could be the case otherwise. Exhibit 1 shows the difference in average fully insured small-group single and family premiums under the range of stop-loss scenarios modeled in this brief compared with the NAIC actuarial subgroup recommendations. For example, if the Affordable Care Act was fully implemented today and small employers were allowed to purchase stop-loss coverage that imposed no additional risk to employers than fully insuring (an option available in most states absent further government action), average single premiums in the fully insured market would be about 25 percent

Glossary

Reinsurance or stop-loss coverage in the context of this brief is insurance purchased by a self-insuring employer to reduce the financial risk of providing health benefits to the workers and dependents in that firm. The employer purchases a reinsurance policy that details the conditions under which the reinsurer will pay a portion of the health care claims incurred by the group. The employer pays a premium to the reinsurer, and then issues insurance policies to its own employees. The reinsurer may be a firm that only sells reinsurance or it may be an insurance company that also sells fully insured traditional insurance products.

Attachment points are the deductibles specified in reinsurance policies. For example, a reinsurance policy with a $20,000 individual attachment point would cover all health care claims incurred by the firm's worker in excess of $20,000. Reinsurance policies often have aggregate attachment points as well, which define the level of claims summed over all enrollees that would trigger reimbursement by the plan.

Small-group thresholds define the employer size below which a firm is eligible to buy insurance that is subject to regulations applying to the fully insured small-group market. Prior to full implementation of the Affordable Care Act, most states define their small-group markets as including employers of 50 workers or fewer. Beginning January 1, 2016, the law requires the small-group threshold be set at 100 workers or fewer; however, the law allows states to set the threshold anywhere from 50 to 100 in 2014 and 2015.

Self-insured health plans are those in which the employer takes on the financial risk of providing a defined set of health care benefits to the firm's employees and dependents. A self-insuring employer pays directly for the claims incurred by the plan's enrollees, as opposed to paying a set premium to an insurance company. Self-insuring employers may purchase reinsurance policies as a way to reduce their exposure to the financial risks of self-insuring.

Fully insured group health plans are those in which the employer pays a premium per covered worker to an insurance company and the insurance company takes on the financial risk of providing a defined set of health care benefits to the firm's employees and dependents.

higher and average family premiums about 19 percent higher than under the subgroup recommendations.

Accepting the subgroup recommendations for minimum stop-loss parameters will lead to significantly lower average premiums in the fully insured small-group market. In addition, the recommendations would create more stability in insurance coverage by substantially reducing employers moving between self-insurance and fully insured plans and by providing greater consistency in insurance benefits provided to workers in small firms. While setting requirements for stop-loss insurance in this way will increase premiums for particular small employers at a point in time (e.g., some will be unable to self-insure during low-cost years), the approach will significantly lower their premiums in years when their health care costs or the health experience of their workers or the workers' dependents have worsened, and will improve the stability, accessibility, and long-term viability of the small-group market for all small firms. Alternatively, requiring that self-insurance sold to small employers comply with regulations in the fully insured market or prohibiting the sale of self-insurance to small employers would have similar effects as the regulation of stop-loss parameters.

BACKGROUND

Health insurance plans offered by employers to their workers can be divided into two broad categories: self-insured and fully insured. In fully insured plans, employers pay a premium to an insurer, which reimburses providers for an agreed upon portion of the medical costs incurred for covered benefits for enrolled workers and their dependents. Fully insured plans are subject to state insurance market regulations. In self-insured plans, the employer is liable for the incurred medical expenses within the parameters of coverage defined for the plan. Because of the Employee Retirement Income Security Act of 1974 (ERISA), self-insured plans are not subject to state insurance market regulations. Importantly, because of the risks of incurring very large claims in a given year, all but the very largest self-insuring employers reduce their risk of exposure to claims costs by purchasing stop-loss insurance from a reinsurer. Stop-loss coverage is generally defined in terms of two deductibles, or "attachment points." The specific deductible applies to the claims costs of each individual covered under the plan. For example, if the specific deductible is $10,000 and an individual incurs $15,000 in claims during the year, the reinsurer will pay the $5,000 in excess of the deductible. The aggregate deductible sets a limit on the total claims costs for which a firm is liable, applying to the claims of all covered lives under the plan, after the specific deductible is applied to each individual's claims.

Hence, the stop-loss deductibles of a self-insuring firm's reinsurance plan determine the firm's risk of liability for high claims costs. Current stop-loss plans generally require firms to accept a significant amount of risk, so self-insurance is much less common among small firms than among large ones. Slightly less than 12 percent of firms with fewer than 100 workers who offer some health coverage offer at least one self-insured plan.[1] For firms with 500 or more workers, this figure rises to slightly less than 90 percent. Small firms that currently self-insure do so for several reasons. There is evidence that small firms that self-insure do not have lower-than-average costs. For example, the 2012 Employer Health Benefits Survey from the Kaiser Family Foundation and Health Research and Educational Trust found average self-insured premiums for small firms to be higher than average premiums for fully insured small firms, though the difference was not statistically significant.[2] This finding suggests that small firms may self-insure to provide more comprehensive benefits than are typically found in the fully insured market.

While self-insurance among small employers is not widespread today, the Affordable Care Act significantly changes the incentives to self-insure beginning in 2014 by exempting self-insured plans from several provisions. Most important:

- Under the law, fully insured small-firm plans will be priced according to modified community rating. Claims experience rating, now common, will not be allowed. Self-insurance will provide an experience-rated option to healthy small groups post-reform. Fully insured plans will also continue to be guaranteed issue and guaranteed renewal, as is required under the Health Insurance Portability and Accountability Act of 1996; these rules do not apply to reinsurance plans. In addition, only fully insured plans are subject to the Affordable Care Act's medical loss ratio requirements, the requirement that carriers explain and provide support of large premium increases, and risk-pooling strategies like risk adjustment and risk corridors.
- Essential health benefits and standardized cost-sharing tiers based on actuarial value will not apply to self-insured plans but will apply to fully insured small-group plans. Many firms currently seeking richer benefits in self-insured plans will be able to purchase benefits consistent with their preferences in the fully insured market under the law, while firms with healthy workers may seek out self-insurance options to offer more parsimonious plans that do not meet the Affordable Care Act's standards.

- The law includes an insurer fee—a fixed amount to be collected each year—which is allocated according to covered lives. Self-insured plans are exempt from this fee, which will essentially be a premium surcharge of 2 percent to 4 percent on fully insured plans.[3]

Thus, firms with lower-than-average-cost workers will be more likely to save money by self-insuring beginning in 2014. If a small-group self-insured firm's claims costs rise, the firm can move to the fully insured market at any time, as the exchanges will have rolling enrollment, although the employer will still be liable for claims already incurred. Many industry experts are concerned that if low-risk stop-loss plans are available to small employers when the full provisions of the law come into effect, the fully insured market could end up being a magnet for bad claims risk with healthier risks diverted to self-insurance. As a result, we could see higher premiums and decreased stability in the fully insured market.

The federal government does not currently regulate stop-loss insurance. Only a minority of states—approximately 20[4]—do so. A few states ban sales of stop-loss policies to very small firms, virtually eliminating self-insurance among them. For example, New York bans stop-loss for firms with fewer than 50 workers. Other states set minimum standards for stop-loss deductibles, essentially ensuring that a certain degree of risk is part of any stop-loss policy. In 1995, the NAIC adopted a model state law regarding the regulation of stop-loss insurance. To date, only six states have enacted it in full, although other states have passed other forms of stop-loss regulation. Even among states that currently regulate, many allow attachment points below $20,000.[5] An actuarial subgroup of the NAIC is considering updating the stop-loss model act to reflect increases in medical costs.[6]

In this brief, we use the Health Insurance Policy Simulation Model (HIPSM) to model the self-insured and fully insured markets for small-firm health insurance under a variety of stop-loss scenarios, ranging from requiring firms take on substantial risk, consistent with the recommendations of the NAIC actuarial subgroup, to no risk at all—that is, nominal stop-loss policies that cover virtually all claims costs. In the absence of state regulation, the latter types of policies are expected to be sold. We examine the magnitude of adverse selection in fully insured small-firm premiums that would occur at various self-insurance risk levels.

An earlier study by RAND also used a micro-simulation model to examine small-firm self-insuring decisions.[7] However, the main scenario assumed specific stop-loss deductibles exceeding $75,000 and aggregate deductibles of $2 million. There was an alternative simulation in which the attachment point was $20,000, but even this is much higher than many stop-loss policies currently marketed to small firms.[8] RAND states that self-insurance could be far more common if insurers offer "policies geared specifically toward small firms that wish to avoid regulation," but did not model such policies. Also, this study does not appear to include the insurer fee.

RESULTS

We simulate scenarios for stop-loss attachments points, representing the full spectrum from large financial risk to small employers to no risk at all. Results simulate the impact of the Affordable Care Act as if fully implemented in 2012. (See Methods for a description of the HIPSM model and the methods used here.)

Scenario A: Recent Recommendations of an NAIC Actuarial Subgroup

An actuarial subgroup of the NAIC has recommended minimum stop-loss deductibles based on a study by Milliman.[9] Essentially, the recommended minimums were tripled from the prior recommendation. Following this approach, the specific stop-loss applying to any single individual would be $60,000, and the aggregate stop-loss applying to the group as a whole would be the maximum of: a flat amount of $60,000, $15,000 per group member, and 130 percent of expected claims. The risk involved in this stop-loss scenario is notably higher than many packages currently being marketed to small firms.

Because of the large financial risk, we estimate that in the context of the Affordable Care Act, less than 2 percent of policies issued to workers in firms with 50 or fewer workers would be self-insured (Exhibit 2). In firms with 51 to 100 workers, we estimate that 4 percent of single and 5 percent of family policies would be self-insured under these parameters. Only 600,000 people—2 percent of the small-employer market—would be covered by small-group self-insured policies, or 207,000 single policies and 153,000 family policies, which cover 2.6 people on average.

Average premiums in the self-insured market are 63 percent and 70 percent of average premiums in the fully insured market under this reinsurance scenario, for single and family policies respectively. However, the relative premiums for self-insured and fully insured coverage vary significantly by employer size, with the largest differences occurring for smaller employers. With the higher risk for employers associated with self-insurance in this simulation, gains from self-insuring have to be substantial for an employer to decide to do so, and the gains have to be even greater for the smallest employers since the risk they face is greater than for their larger counterparts who have more covered lives over whom to spread their costs. Thus, under a stop-loss policy with substantial risk, the smallest self-insuring employers will tend to have the lowest average claims costs. For example, the average premium for single coverage in a self-insuring plan for firms with fewer than 10 workers is only 51 percent of the average for fully insured plans. In other words, the savings for these firms from self-insuring is larger than for employers of 51 to 100 workers where average single premiums are 71 percent of those in the fully insured market.

This scenario serves as the basis of comparison for the other scenarios.

Scenario B: Current NAIC Model Act

Next, we consider the current NAIC recommendations on reinsurance minimums. The specific stop-loss is only a third of that used in Scenario A ($20,000 versus

Exhibit 2. Reinsurance Scenario A (NAIC Actuarial Subgroup Recommendation)

Reinsurance parameters		
Specific stop-loss		$60,000
Aggregate stop-loss the maximum of	Flat	$60,000
	Per member	$15,000
	% E[claims]	130%

A

	Self-insured			Fully insured	
	Number (thousands)	Average total premium	Share of total market	Number (thousands)	Average total premium
Single policies (12,180 total policies)					
1–9	28	$2,577	1%	3,113	$5,041
10–24	31	$2,398	1%	3,368	$4,747
25–50	32	$2,955	1%	2,701	$4,591
51–100	116	$3,259	4%	2,791	$4,579
Total	207	$2,994	2%	11,973	$4,749
Family policies (5,967 total policies)					
1–9	32	$8,396	2%	1,496	$13,343
10–24	17	$7,295	1%	1,498	$13,059
25–50	22	$7,292	2%	1,381	$12,682
51–100	82	$10,058	5%	1,439	$12,704
Total	153	$9,016	3%	5,814	$12,955
			Total	Self-insured	Fully insured
Covered lives (millions)			29.6	0.6	28.9

Note: NAIC = National Association of Insurance Commissioners.
Source: Health Insurance Policy Simulation Model (HIPSM), The Urban Institute, 2012.
Simulations done as if the Affordable Care Act was fully implemented in 2012.

$60,000), and the aggregate stop-loss conditions are also substantially lower—the maximum of a $20,000 flat amount, $4,000 per member, and 110 percent of expected claims. Overall, 12 percent of single and 15 percent of family policies issued to small-firm workers are self-insured under this structure (Exhibit 3). Self-insured plans represent a significant share of the market for small firms with 51 to 100 workers: 26 percent of single and 29 percent of family policies. In total, 4.2 million people obtain their coverage through small-group self-insured policies. The total number of people covered through small employers does not differ significantly from Scenario A (29.7 million versus 29.6 million).

Scenario B shows noticeable adverse selection relative to A, as healthier risks are pulled out of the fully insured market into the self-insured market since the risk to the small employers self-insuring is reduced. Average single premiums in the fully insured market are 4.3 percent higher and family premiums are 1.5 percent higher than in Scenario A. Basically, we see that firms with healthy people who would pay more under modified community rating than under experience rating are more likely to self-insure, provided they can bear the risk. Thus, we find that the difference between current NAIC recommendations and those of the NAIC actuarial subgroup does matter for fully insured small-group premiums. Our results come to a similar conclusion as the Milliman analysis, which used a very different methodology.

The average self-insured premiums in Exhibit 2 are higher than the self-insured premiums in Exhibit 3. As we saw, very few small firms, particularly those employing fewer than 50 workers, are willing to take on the risk of self-insurance under Scenario A. Those who would self-insure face the lowest risk of doing so and have lower claims cost than average; however, they are not necessarily the firms with the lowest

Exhibit 3. Reinsurance Scenario B (Current NAIC Model Act)

Reinsurance parameters		
Specific stop-loss		$20,000
Aggregate stop-loss the maximum of	Flat	$20,000
	Per member	$4,000
	% E[claims]	110%

B

	Self-insured			Fully insured	
	Number (thousands)	Average total premium	Share of total market	Number (thousands)	Average total premium
Single policies (12,218 total policies)					
1–9	229	$1,843	7%	2,938	$5,259
10–24	188	$2,108	6%	3,214	$4,988
25–50	338	$2,602	12%	2,402	$4,810
51–100	768	$3,132	26%	2,141	$4,818
Total	1,523	$2,694	12%	10,695	$4,988
Family policies (6,003 total policies)					
1–9	180	$6,663	12%	1,356	$13,454
10–24	98	$7,338	6%	1,411	$13,247
25–50	196	$8,173	14%	1,210	$12,959
51–100	452	$9,137	29%	1,100	$12,918
Total	926	$8,262	15%	5,077	$13,163
Percent by which average fully insured small-group premiums are higher than under NAIC actuarial subgroup's recommended updates:				Single	**4.3%**
				Family	**1.5%**
			Total	Self-insured	Fully insured
Covered lives (millions)			29.7	4.2	25.5

Note: NAIC = National Association of Insurance Commissioners.
Source: Health Insurance Policy Simulation Model (HIPSM), The Urban Institute, 2012.
Simulations done as if the Affordable Care Act was fully implemented in 2012.

claims costs, as other factors go into computing the risk of self-insurance besides the firm's current claims costs.

Scenario C: Low Risk

The next self-insurance scenario imposes much lower risk on small employers than Scenario B. The specific deductible is $10,000.[10] The aggregate deductible is also much lower than Scenario B, computed as the maximum of a $20,000 flat amount and $2,000 per member. Not only is the dollar amount per member lower but, more important, there is no minimum percent of expected claims. Expected claims for most adults are over $2,000 a year, so without an expected claims minimum, a large majority of firms would reach their aggregate deductible. The risk would not be negligible, however, for the smallest firms.

We find that for workers in firms with fewer than 25 workers, about a fifth of single policies and a quarter of family policies are self-insured given these parameters (Exhibit 4). A little less than two-thirds of policies for workers in firms with 51 to 100 workers are self-insured. Overall, about 40 percent of people covered in the small-firm market receive that coverage through self-insured plans under this scenario.

The average single premium in the fully insured market is 14.4 percent higher than with the model recommended by the NAIC actuarial subgroup; the average family premium is 9.6 percent higher. We did three sensitivity analyses around simulation C: one assuming a higher level of employer risk aversion, one assuming a lower level of employer risk aversion, and one assuming that self-insuring small employers can offer their workers a high-deductible plan, as opposed to the typical employer plan provided under the Affordable Care Act. Results from each are presented below, followed by an analysis of Scenario D, where small employers face no additional risk if self-insuring.

Exhibit 4. Reinsurance Scenario C (Low Employer Risk)

Reinsurance parameters		
Specific stop-loss		$10,000
Aggregate stop-loss the maximum of	Flat	$20,000
	Per member	$2,000
	% E[claims]	no min.

C

	Self-insured			Fully insured	
	Number (thousands)	Average total premium	Share of total market	Number (thousands)	Average total premium
Single policies (12,200 total policies)					
1–9	647	$2,063	20%	2,510	$5,723
10–24	721	$3,878	21%	2,673	$5,486
25–50	1,199	$4,039	44%	1,534	$5,288
51–100	1,861	$4,113	64%	1,055	$5,314
Total	4,428	$3,755	36%	7,772	$5,550
Family policies (6,054 total policies)					
1–9	410	$7,321	27%	1,126	$14,117
10–24	372	$10,967	25%	1,141	$14,567
25–50	700	$11,535	49%	726	$14,331
51–100	1,017	$11,597	64%	562	$14,288
Total	2,499	$10,784	41%	3,555	$14,332
Percent by which average fully insured small-group premiums are higher than under NAIC actuarial subgroup's recommended updates:				Single	**14.4%**
				Family	**9.6%**
			Total	Self-insured	Fully insured
Covered lives (millions)			29.9	11.7	18.2

Note: NAIC = National Association of Insurance Commissioners.
Source: Health Insurance Policy Simulation Model (HIPSM), The Urban Institute, 2012.
Simulations done as if the Affordable Care Act was fully implemented in 2012.

Scenario C Sensitivity Analysis: Employer Risk Aversion

The willingness of employers to bear the risk of high claims costs is a crucial factor in their decision whether or not to purchase coverage, provided stop-loss deductibles still expose them to some risk. We simulated Scenario C with the risk-aversion factor in the employer's expected utility function raised by 25 percent, making the employers less willing to take on risk, from that used in Exhibit 4 and with it lowered by 25 percent, making the employers more willing to take on risk. The higher assumed risk aversion leads to 10.5 million lives covered by small firm self-insured policies (Exhibit 5), down from 11.7 million in Exhibit 4 (Scenario C with our standard risk-aversion assumption). Single premiums with higher risk aversion are 12 percent higher than under the NAIC actuarial subgroup recommendations and family premiums are 8 percent higher. Thus, higher risk aversion leads to lower levels of adverse selection in the small-firm fully insured market.

Lowering risk aversion by 25 percent compared with our standard assumption leads to 13.1 million lives covered by small firm self-insured policies under the Scenario C reinsurance parameters (Exhibit 6). With lower risk aversion, single premiums are 15.1 percent higher and family premiums 11 percent higher than under the actuarial subgroup's recommended parameters. Thus, lower risk aversion (i.e., greater risk-taking) leads to more lives covered through self-insurance and greater adverse selection in the fully insured market. Under our model, adverse selection does vary with risk aversion, but at a notably lower rate than the relative change in risk aversion. However, it is reasonable to conclude that even if firms are at the high end of the plausible range of risk aversion, the fully insured market will experience adverse selection of

Exhibit 5. Reinsurance Scenario C (High Risk Aversion)

Reinsurance parameters		
Specific stop-loss		$10,000
Aggregate stop-loss the maximum of	Flat	$20,000
	Per member	$2,000
	% E[claims]	no min.
	Risk aversion 25% higher than in Exhibit 4	

C **High Risk Aversion**

	Self-insured			Fully insured	
	Number (thousands)	Average total premium	Share of total market	Number (thousands)	Average total premium
Single policies (12,197 total policies)					
1–9	545	$2,092	17%	2,611	$5,617
10–24	553	$3,772	16%	2,833	$5,388
25–50	1,055	$3,943	38%	1,689	$5,202
51–100	1,751	$4,075	60%	1,160	$5,193
Total	3,904	$3,720	32%	8,293	$5,395
Family policies (6,044 total policies)					
1–9	345	$7,480	22%	1,189	$13,870
10–24	315	$10,882	21%	1,198	$14,338
25–50	650	$11,255	46%	767	$14,066
51–100	982	$11,454	62%	598	$14,021
Total	2,292	$10,721	38%	3,752	$14,084
Percent by which average fully insured small-group premiums are higher than under NAIC actuarial subgroup's recommended updates:				Single	**12.0%**
				Family	**8.0%**
			Total	Self-insured	Fully insured
Covered lives (millions)			29.8	10.5	19.3

Note: NAIC = National Association of Insurance Commissioners.
Source: Health Insurance Policy Simulation Model (HIPSM), The Urban Institute, 2012.
Simulations done as if the Affordable Care Act was fully implemented in 2012.

Exhibit 6. Reinsurance Scenario C (Low Risk Aversion)

Reinsurance parameters		
Specific stop-loss		$10,000
Aggregate stop-loss the maximum of	Flat	$20,000
	Per member	$2,000
	% E[claims]	no min.
	Risk aversion 25% lower than in Exhibit 4	

C **Low Risk Aversion**

	Self-insured			Fully insured	
	Number (thousands)	Average total premium	Share of total market	Number (thousands)	Average total premium
Single policies (12,220 total policies)					
1–9	765	$2,068	24%	2,402	$5,809
10–24	876	$3,978	26%	2,515	$5,577
25–50	1,391	$4,119	51%	1,350	$5,392
51–100	1,917	$4,181	66%	1,004	$5,400
Total	4,949	$3,801	40%	7,271	$5,595
Family policies (6,068 total policies)					
1–9	476	$7,275	31%	1,061	$14,324
10–24	460	$11,134	30%	1,062	$14,779
25–50	805	$11,730	56%	628	$14,585
51–100	1,047	$11,770	66%	529	$14,565
Total	2,788	$10,886	46%	3,280	$14,560
Percent by which average fully insured small-group premiums are higher than under NAIC actuarial subgroup's recommended updates:				Single	**15.1%**
				Family	**11.0%**
			Total	Self-insured	Fully insured
Covered lives (millions)			29.9	13.1	16.8

Note: NAIC = National Association of Insurance Commissioners.
Source: Health Insurance Policy Simulation Model (HIPSM), The Urban Institute, 2012.
Simulations done as if the Affordable Care Act was fully implemented in 2012.

more than 10 percent if plans comparable to Scenario C are allowed.

Scenario C Sensitivity Analysis: Self-Insured Plans with Lower Actuarial Value

Employers might also use the self-insurance option as a route to offering their workers a policy with a lower actuarial value than those permitted in the fully insured small-group market under the Affordable Care Act. Consequently, we simulate the reinsurance structure presented under Scenario C, but assuming that self-insuring small employers have the choice of providing their workers with a standard small-group plan or one with a higher deductible and out-of-pocket maximum than the standard plans. These less comprehensive plans would presumably be attractive to the small employers with the healthiest groups. When the lower actuarial value plans are permitted, 1.2 million more lives are covered by self-insured plans as compared with the standard Scenario C assumptions, and average self-insured single premiums are about $360 lower, family premiums about $670 lower (Exhibit 7). Note that these premiums represent a mixture of high-deductible and more comprehensive self-insured plans. The resulting premiums are higher than under the standard Scenario C, but the difference is smaller than between lower risk aversion and standard Scenario C. The results of this high-deductible simulation do not differ substantially from the standard Scenario C because many of the same employers benefit under both scenarios, but the magnitude of the savings for some of those employers differs between the two.

Scenario D: No Risk to Employers

At the end of the stop-loss spectrum is the case in which the attachment point is $0. Employers thus bear

Exhibit 7. Reinsurance Scenario C (Self-Insured HDHP Plan Available)

Reinsurance parameters		
Specific stop-loss		$10,000
Aggregate stop-loss the maximum of	Flat	$20,000
	Per member	$2,000
	% E[claims]	no min.
	Self-insured high-deductible plans available	

C **High-Deductible Plans**

	Self-insured			Fully insured	
	Number (thousands)	Average total premium	Share of total market	Number (thousands)	Average total premium
Single policies (12,194 total policies)					
1–9	650	$1,667	21%	2,502	$5,804
10–24	815	$3,458	24%	2,577	$5,562
25–50	1,416	$3,646	52%	1,320	$5,361
51–100	1,969	$3,756	68%	945	$5,367
Total	4,850	$3,394	40%	7,344	$5,583
Family policies (6,118 total policies)					
1–9	445	$7,326	29%	1,100	$14,178
10–24	430	$10,286	28%	1,099	$14,584
25–50	808	$10,752	56%	645	$14,394
51–100	1,097	$10,699	69%	494	$14,258
Total	2,780	$10,111	45%	3,338	$14,369
Percent by which average fully insured small-group premiums are higher than under NAIC actuarial subgroup's recommended updates:				Single	**14.9%**
				Family	**9.8%**
			Total	Self-insured	Fully insured
Covered lives (millions)			30.0	12.9	17.1

Note: NAIC = National Association of Insurance Commissioners.
Source: Health Insurance Policy Simulation Model (HIPSM), The Urban Institute, 2012.
Simulations done as if the Affordable Care Act was fully implemented in 2012.

no risk of increased claims costs by self-insuring than they do when fully insuring. This is essentially traditional health insurance marketed as stop-loss insurance, providing small employers with an experience-rated product that is not subject to many of the Affordable Care Act's other small-group insurance reforms either. If a state does not regulate stop-loss deductibles, nothing would prevent such plans from being sold. In such a case, our model estimates that more than 60 percent of lives covered by small-firm plans would be covered by self-insured plans (Exhibit 8). In particular, self-insurance would dominate in firms employing 25 or more workers. Single fully insured premiums would be nearly a quarter higher than under the actuarial subgroup recommendations, and family premiums would be nearly a fifth higher.

The total number of people covered by small-firm plans exceeds that under the actuarial subgroup recommendations modestly—30.1 million, or an additional 400,000 as compared with Scenario A (Exhibit 2). However, this 1.3 percent increase in enrollment is primarily a shift from nongroup or large-firm employer coverage, rather than a reduction in the number without insurance (data not shown), and thus does not suggest that widespread self-insurance leads to more insurance coverage on net.

DISCUSSION

Significant reforms to the way that small-group health insurance is sold and priced will be implemented starting January 1, 2014. Many of these reforms are intended to broaden the way health care risk is shared across small employers. These changes will end insurer price discrimination against small groups with higher-than-average expected health costs and those with prior experience with higher claims. The reforms will

Exhibit 8. Reinsurance Scenario D (No Additional Risk to Firms)

Reinsurance parameters		
Specific stop-loss		$0
Aggregate stop-loss the maximum of	Flat	no min.
	Per member	no min.
	% E[claims]	no min.

D

	Self-insured			Fully insured	
	Number (thousands)	Average total premium	Share of total market	Number (thousands)	Average total premium
Single policies (12,266 total policies)					
1–9	1,409	$2,701	44%	1,776	$6,271
10–24	1,862	$4,374	55%	1,535	$6,151
25–50	1,853	$4,361	67%	901	$5,958
51–100	2,191	$4,352	75%	739	$5,911
Total	7,315	$4,042	60%	4,951	$6,123
Family policies (6,134 total policies)					
1–9	810	$8,471	50%	794	$15,244
10–24	849	$12,287	55%	682	$15,974
25–50	1,023	$12,256	72%	403	$15,903
51–100	1,176	$12,248	75%	397	$15,924
Total	3,858	$11,465	63%	2,276	$15,698
Percent by which average fully insured small-group premiums are higher than under NAIC actuarial subgroup's recommended updates:				Single	**24.8%**
				Family	**19.1%**
			Total	Self-insured	Fully insured
Covered lives (millions)			30.1	18.6	11.6

Note: NAIC = National Association of Insurance Commissioners.
Source: Health Insurance Policy Simulation Model (HIPSM), The Urban Institute, 2012.
Simulations done as if the Affordable Care Act was fully implemented in 2012.

also promote transparency and accountability among insurers in this market, encouraging competition based on efficiency and quality, as opposed to avoiding risk. However, these new federal regulations do not apply to self-insured plans, regardless of employer size, and they do not apply to reinsurance, the product that makes it feasible for small employers to contemplate self-insurance as an option. Thus, a significant migration of small employers with healthier-than-average risks to self-insurance from fully insured plans has the potential to undermine the effectiveness of the Affordable Care Act's small-group reforms and to destabilize the market. Our analysis demonstrates, however, that federal or state regulation of the definition of reinsurance can be effective in mitigating these problems.

Most states do not currently regulate reinsurance, either by restricting the size of the employers to whom it may be sold or setting minimum attachment points. Consequently, without further action, reinsurers can market policies consistent with our Scenario D presented above, which requires no additional risk to small employers of self-insuring, and would lead to significant erosion of and adverse selection in the fully insured small-group market. Because the Affordable Care Act requires fully insured small-group coverage to be sold guaranteed issue and without preexisting condition exclusion periods beginning in 2014, small employers could conceivably purchase experience-rated reinsurance and self-insure at times when their groups' health care profile has been relatively healthy and enter the modified community-rated pool when denied coverage or "rated up" by reinsurers.

Our results indicate that the reinsurance parameters included in the recommendations of the NAIC actuarial subgroup (Scenario A), which require a minimum specific stop-loss attachment point of $60,000 and an aggregate stop-loss determined as the maximum

of a flat $60,000 amount, $15,000 per member, and 130 percent of expected claims, would go a long way toward bolstering the ongoing strength of the small-group insurance market. If this approach is adopted uniformly across the country, the fully insured small-group market would be roughly 1.5 times as large and the average fully insured small-group premium would be at least 20 percent lower than if reinsurance effectively acts as unregulated insurance (Scenario D). These concerns could also be addressed by prohibiting the sale of reinsurance to employers of 100 or fewer workers.

Uniformly implementing regulatory safeguards across the country requires federal action. Absent such action, states can take the initiative to do so individually, following the recommendations of the NAIC's actuarial subgroup.

METHODS

The decisions of firms to offer their workers self-insured plans, commercial plans, or no coverage at all and the decisions of workers to enroll in plans offered to them are computed using HIPSM.[11] HIPSM is a microsimulation model designed to estimate the consequences of health policy changes for health insurance coverage and health care costs. The core of the model is a nationally representative population of individuals and families, together with their health care costs.[12] The base population is drawn from the March 2009 and 2010 Current Population Survey Annual Social and Economic Supplement (CPS–ASEC) combined. Health care costs are taken from three years (2008—2010) of the Medical Expenditure Panel Survey–Household Component (MEPS–HC), with corrections to certain categories of expenditures known to be underreported. The data are augmented with immigration status, eligibility for various Medicaid/Children's Health Insurance Program (CHIP) programs, and other data elements needed to simulate the Affordable Care Act, as described in the HIPSM Methodology Documentation. Then, data are aged to the year of interest, taking into account demographic and economic changes.

In order to compute firm-level premiums for employer-sponsored coverage and to model firm decisions of whether to offer insurance or not, and if offering, the type of health insurance coverage they provide, workers are grouped into simulated, or "synthetic," firms. The distribution of synthetic firms mimics the known distribution of employers by size, industry, region, and baseline insurance offer status. Workers matched into each firm are those reporting employment in the same type of firms. For fully insured small-group plans, costs at the various Affordable Care Act actuarial value tiers (60 percent, 70 percent, 80 percent, and 90 percent) are constructed, and premiums are based on the insured costs of those currently covered by such plans. We implement modified community rating, with premiums variation limited to age and tobacco use at ratios not exceeding 3:1 and 1.5:1, respectively. The Affordable Care Act includes an insurer fee that applies to commercial policies, but not to self-insured ones. The effect of this provision will be to add a premium surcharge on commercial policies. We model a surcharge of 3 percent, which is in the range of several analyses.[13]

Fully insured small-group plans are constructed based on plans typical of those currently offered by small employers, using data on deductibles, out-of-pocket maximums, and coinsurance rates from the Medical Expenditure Panel Survey–Insurance Component (MEPS–IC) and Kaiser/HRET Employer Health Benefits Surveys. For each firm-size group, we adjust the actuarial value of the plan so that the average premium computed (based on those covered by plans in the small-group market in the underlying survey data) is aligned to the average premiums reported by the MEPS–IC. The resulting actuarial values range from just over 70 percent for the smallest firms to just over 80 percent for those employing 50 or more, with deductibles averaging $1,000 for single policies and $1,900 for family policies. For self-insured plans offered by small employers, we use two insurance packages. The first is the typical fully insured coverage described above; this is available in all the simulations presented here. The second is a high-deductible plan,

which is made available to small employers in one of our sensitivity analyses, discussed above. The deductibles for the high-deductible plan are $2,300 single and $4,500 family.

We model several different types of stop-loss policies that self-insuring employers purchase to limit their exposure to claims costs. These are defined by specific and aggregate deductibles. The Background section of this paper describes how they are applied. Aggregate deductibles are specified by three conditions: a flat dollar amount, a dollar amount per covered person, and a minimum percentage of expected claims. These three are computed for each self-insured firm, and the firm's aggregate deductible is the largest of them.

Premiums of self-insured plans are computed as follows. A firm's stop-loss deductibles are applied to determine which costs are borne directly by the firm and which are covered by the reinsurer. The reinsurer charges a premium to cover its costs. A few states, such as North Carolina, require that stop-loss premiums follow the same market regulations as fully insured premiums. North Carolina also prohibits insurers from serving as third-party administrators for self-funded small employers. However, our intent here is to model the effect in states not regulating stop-loss coverage, so premiums in the simulations are experience-rated, the predominant situation nationally. This is done by taking into account both a person's expenses for the current year and the expected value of his or her expenses, with the average taken over age, gender, and health status. The total self-insured premium for a firm covers the stop-loss premium, claims costs not covered by stop-loss, and administrative costs.

Once fully insured and self-insured premiums for a firm are set, the firm can decide which type of coverage, if any, to offer to workers. We use an expected utility model, taking into account a number of factors:

- The expected utility of coverage (or remaining uninsured) to workers. This takes into account premiums, out-of-pocket costs, and risk of high insurance costs, in particular, the difference between self-insured and fully insured premiums.[14]
- Total worker compensation remains constant, regardless of the insurance decision. More spending on health benefits means lower wages, and vice versa.
- The tax exclusion for employer-sponsored insurance.
- Affordable Care Act employer assessments for firms of 50 or more employees that have at least one full-time worker obtaining a subsidy for the purchase of nongroup coverage through a health insurance exchange.
- Affordable Care Act premium tax credits for the smallest firms that qualify.
- The Affordable Care Act insurer fee, as described above.
- Administrative costs of offering insurance.
- For self-insured policies, the risk of additional claims costs to the employer.

The last factor is crucial in this analysis. We first look at the standard deviation of health care costs among covered lives in a firm as a measure of how much claims could reasonably rise from their expected values. The 90th percentile of a typical distribution of health care costs is roughly 70 percent of a standard deviation. We then apply this level of claims to a firm's stop-loss deductibles to determine how much of this additional cost will be borne directly by the firm. If a firm's expected claims are already in excess of the deductibles, for example, the additional cost will be borne by the reinsurer to be covered through premiums. The willingness of firms to take risks is not precisely known, so we perform a sensitivity analysis. Current patterns of stop-loss insurance show clearly that the willingness of employers to risk self-insurance and the willingness of reinsurers to offer coverage both increase with firm size. The default level is calibrated to take into account that the model being considered

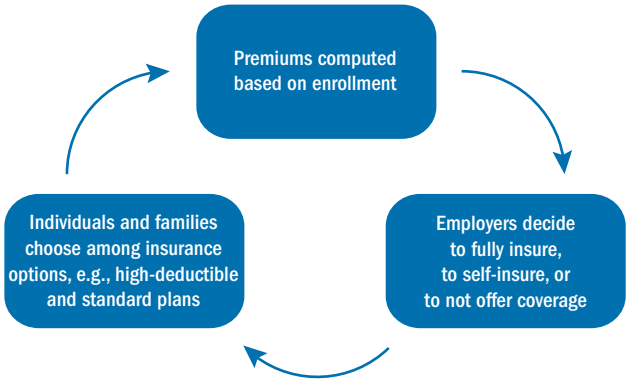
by the actuarial subgroup of the NAIC requires a self-insured employer to take on much higher risk than many stop-loss policies currently offered to small firms. Note that the results shown here assume implementation of the Affordable Care Act. Provisions such as the insurer fee do not currently exist, so the levels of self-insured coverage reported in this paper will not necessarily match current patterns.

A firm offers coverage if the employees' combined value of the offer exceeds the offering costs, and there are enough employees who gain from having the offer. A firm will offer a self-insured policy if its value (i.e., expected utility) to the firm and its workers outweighs the value of commercial coverage. For example, if experience-rating in the stop-loss market allows a firm of particularly healthy workers to purchase coverage comparable to a fully insured plan more cheaply, the employer spends less providing health care benefits. Keeping total compensation constant, this means a rise in wages for workers, so they gain.

The interaction between how much a firm would benefit from self-insuring and whether it would be willing to bear the resulting risk is particularly important for understanding the results of our high-risk stop-loss scenarios. The update recommended by an actuarial subgroup at the NAIC (Scenario A) tripled most of the stop-loss deductible parameters from the current NAIC Model Act (Scenario B). While the risk involved in Scenario B is high enough to discourage most small firms, the risk is so much higher in Scenario A that only a very small minority would consider self-insurance. While, in general, firms with the most persistently low-cost workers would tend to gain the most from self-insuring, those who gain the most would not necessarily be those facing the lowest risk or those willing to take substantial risk. Because of random variation in health care costs, the smallest firms would have a greater chance of having only very healthy workers, but they are highly unlikely to self-insure under the NAIC actuarial subgroup recommended parameters. Besides that, those with the lowest claims will often be furthest from their deductibles, and may have a high standard deviation of costs. Thus, their risk in self-insuring may be greater than that of some firms with somewhat higher claims costs.

Once employers have made their decisions about offering coverage, workers and their families decide what coverage, if any, to take up. This decision includes alternatives to their firm's offer, such as offers of coverage from a spouse's employer, subsidized exchange coverage if the employer's offer is deemed unaffordable and the worker is income eligible, public coverage such as Medicaid or CHIP, or remaining uninsured. Once decisions have been made, premiums are updated to reflect changes in enrollment. The cycle of decision-making is repeated until the model reaches equilibrium (Exhibit 9). We then analyze the resulting small-firm insurance coverage, both self-insured and fully insured. Each of the seven stop-loss scenarios presented here require a separate simulation. For all scenarios, we simulated the Affordable Care Act as if fully implemented in 2012.

Exhibit 9. A HIPSM Simulation Cycle for Families with Small-Firm Workers



Note: HIPSM = Health Insurance Policy Simulation Model.

NOTES

1 Agency for Healthcare Research and Quality, Center for Financing, Access and Cost Trends. 2011 Medical Expenditure Panel Survey-Insurance Component. Table I.A.2.a.

2 Kaiser-HRET Survey of Employer-Sponsored Health Benefits 2012 (Menlo Park, Calif.: Henry J. Kaiser Family Foundation), Exhibits 1.5 and 1.6, http://ehbs.kff.org.

3 Chris Carlson, *Estimated Premium Impacts of Annual Fees Assessed on Health Insurance Plans, Oliver Wyman,* 2011. Also, forthcoming analysis by R. Winkelman, M. Buettgens, and D. Myers.

4 T. S. Jost and M. A. Hall, "Self-Insurance for Small Employers Under the Affordable Care Act: Federal and State Regulatory Options," *New York University Law Review,* forthcoming.

5 Ibid.

6 http://www.naic.org/documents/committees_b_hcra_wg_120606_milliman_interpretations.pdf.

7 C. Eibner, C. C. Price, R. Vardavas et al., "Small Firms' Actions in Two Areas, and Exchange Premium and Enrollment Impact," *Health Affairs,* Feb. 2012 31(2):324–31.

8 Online statements by reinsurers include examples of specific stop loss deductibles of $5,000, for example. See http://www.img-stoploss.com/about-img-stop-loss/IMG-sl-advantage.aspx. A discussion of increased marketing of stop loss to small firms will appear in Jost and Hall, "Self-Insurance for Small Employers," forthcoming.

9 J. T. O'Connor and E. C. Huth, *Statistical Modeling and Analysis of Stop-Loss Insurance for Use in NAIC Model Act*, Milliman, 2012, http://www.naic.org/documents/committees_b_erisa_millman_naic_final_report.pdf.

10 See note 6 above for an example of a plan currently offered with a much lower attachment point.

11 For an overview of the model's capabilities and a bibliography of research using it, see "The Urban Institute's Health Microsimulation Capabilities," http://www.urban.org/uploadedpdf/412154-Health-Microsimulation-Capabilities.pdf.

12 For more detail, see "HIPSM Methodology Documentation: 2011 National Version," http://www.urban.org/UploadedPDF/412471-Health-Insurance-Policy-Simulation-Model-Methodology-Documentation.pdf.

13 Carlson, *Estimated Premium Impacts,* 2011.

14 For details, see HIPSM Methodology Documentation, http://www.urban.org/UploadedPDF/412471-Health-Insurance-Policy-Simulation-Model-Methodology-Documentation.pdf.

About the Authors

Matthew Buettgens, Ph.D., is a mathematician and senior research associate in The Urban Institute's Health Policy Center. He leads the development of the Urban Institute's Health Insurance Policy Simulation Model. The model has been used to provide technical assistance for health reform implementation in Massachusetts, Missouri, New York, Virginia, and Washington, and to the federal government. His recent work includes papers analyzing aspects of national health insurance reform. Topics have included the costs and savings of health reform for federal and state governments, state-by-state analysis of changes in health insurance coverage and the remaining uninsured, the effect of reform on employers, the role of the individual mandate, the affordability of coverage under health insurance exchanges, and the implications of age-rating for the affordability of coverage. Dr. Buettgens received a Ph.D. in mathematics from the State University of New York at Buffalo.

Linda J. Blumberg, Ph.D., is an economist and senior fellow in The Urban Institute's Health Policy Center. She is an expert on private health insurance, health care financing, and health system reform. Her recent work includes a variety of projects related to the analysis of health reform as well the provision of technical assistance to states in their efforts to implement the Affordable Care Act. These include: a large multiyear quantitative and qualitative analytic effort monitoring and evaluating the effects of the Affordable Care Act; analysis of the number of people potentially affected by individual mandate penalties; analyses of the effects of policy design options under the law nationally and in three states; an explanation of incentives structures under the law and how they interact with employer decisions to offer coverage to employees; analysis of essential health benefit options available to states and their implications for consumers; and an analysis of the potential roles of insurance exchanges under health care reform. Dr. Blumberg is a member of the *Health Affairs* editorial board and is frequently consulted by members of Congress and their staffs on issues related to insurance and health care reform. She received a Ph.D. in economics from the University of Michigan.

Acknowledgments

We would like to acknowledge the valuable comments provided by Timothy Stolzfus Jost, Sabrina Corlette, and Kevin Lucia.

Editorial support was provided by Deborah Lorber.

www.commonwealthfund.org