



Consumer Federation of America

ANALYSIS OF ALLSTATE LETTER OF FEBRUARY 20, 2015 REGARDING THE USE OF PRICE OPTIMIZATION IN INSURANCE

The most notable element of Allstate's response is the one denial not made by the company. At the heart of the complaint I submitted is the well-supported understanding that Allstate's new rating component called "marketplace considerations" illegally uses some measure of consumers' elasticity of demand in its rate setting process. Allstate generally denies the claim of our complaint but strikingly does not dispute that elasticity of demand is captured in its new rating model.

This non-denial denial cannot be glossed over. In its attempt to distract from this problem, Allstate has provided the Wisconsin Insurance Department with a response rife with unsubstantiated claims and misdirection. Allstate's overarching theme is that its new rating structure remains tethered to risk analysis and the variance away from the mean cost estimate of a risk is introduced merely to soften the sharp edges of justified rate changes. This, however, is demonstrably false. In the sections below we address several of Allstate's claims.

CLAIM #1

We begin with Allstate's primary claim:

First and foremost, as we have explained in numerous other venues, Allstate's rating plans, including the Complementary Group Rating Plan (CGR), have been and continue to be risk based. CFA wrongly asserts that Allstate is applying market based consideration in a manner unlinked from risk. The CGR structure is designed to control the movement of premium from current rates to premium based on an updated loss estimate.

Even if we accept that Allstate is "Control(ling) the movement of premium from current rates to premium based on updated loss estimates," this is not risk-based pricing. And even if you were to accept that a transition to an updated loss estimate warranted some deviation from risk-based pricing to avoid rate shock, CGR does not provide that. The issue that must be examined is whether or not Allstate's method of departure reflects demand models unrelated to expected costs of the transfer of risk and are applied at such granular rating cell-levels that they amount to, as is clearly the case in this filing, modifying rates for individual households.

The Complementary Group Rating factor evaluates policyholders based on three criteria (quoted directly from the Allstate filing at Attachment V, Page 1, found at

page 189):

1. *Expected loss costs (from the loss model described on Page 1 of Attachment IA)*
2. *Policyholder disruption*
3. *Marketplace considerations*

Please note that “marketplace considerations” and “policyholder disruption” are separate and distinct criteria from “expected loss costs,” despite Allstate’s attempt to conflate them. While Allstate does not disclose its methodology for assessing “marketplace considerations” or “policyholder disruption,” we know that the former, at least, is an evaluation of non-risk related factors such as price elasticity of demand and other characteristics related to willingness to pay higher than actuarially sound rates, that is, price optimization. Notably, Allstate explicitly admitted the use of price optimization in its 2011 Form 10-K report, which states that one of Allstate’s “key goals” was to “improve auto competitive position through price optimization.” Moreover, they warned shareholders that the price optimization techniques it was incorporating into Wisconsin and other states’ rates were threatened by regulator and consumer group actions in the company’s *Notice of 2014 Annual Meeting, Proxy Statement and 2013 Annual Report*:

The potential benefits of our sophisticated risk segmentation process may not be fully realized.

We believe that our sophisticated pricing and underwriting methods (which, in some situations, considers information that is obtained from credit reports and other factors) has allowed us to be more competitive and operate more profitably. However, because many of our competitors seek to adopt underwriting criteria and sophisticated pricing models similar to those we use, our competitive advantage could decline or be lost. Further, the use of increasingly sophisticated pricing models is being reviewed by regulators and special interest groups. Competitive pressures could also force us to modify our sophisticated pricing models. Furthermore, we cannot be assured that these sophisticated pricing models will accurately reflect the level of losses that we will ultimately incur.

The filing with your department, which was submitted not long before this discussion above was laid out to shareholders, includes a matrix of approximately 100,000 “micro-segments” assigning policyholders to a particular complementary group according to four characteristics: Birthdate of the eldest driver named on the policy, Gender, Years of Prior Insurance and ZIP Code. There are, in fact, more micro-segments in Wisconsin than policyholders served by Allstate. It is Allstate’s intent that each household of Allstate Property and Casualty Insurance Company’s Wisconsin policyholders reside in its own micro-segment.¹ Individual policy rating cannot be risk-based for three reasons:

¹ In its Pennsylvania filings introducing these concepts, Allstate acknowledges that only about 1,800 of the company’s 300,000 policyholders (less than 1%) do not have their own unique micro-segment.

1. Actuarial standards would assign zero credibility to ratemaking based on one policy's experience.
2. On the other hand, individual household rating is precisely the approach used in deploying elasticity of demand models into the pricing process.
3. A micro-segment is not risk-based. Allstate admits it is only an identifier based on four characteristics.

Proof that Allstate's CGR aims for individual rating is found in one of the company's criticisms of CFA: "Some of CFA's conclusions appear based on a fundamental misunderstanding of our rate setting practices...(CFA) included an example intended to illustrate CFA's conclusions that a driver with a perfect driving record born on 1/28/68 'pays 29.5% more than the exact same driver would if he were instead born three months later on April 9, 1968'...We (Allstate) examined the 2 policies referenced in the CFA example. They are not identical...In fact one policy had one driver and one vehicle while the other driver had multiple drivers and 3 cars. These differences, among others, explain why 2 policies with first named insureds born 3 months apart would pay different premiums."

This response from Allstate is very illuminating and shows that we are correct in our analysis. First of all, the response makes crystal clear that the CGR approach does identify individual policies, which is a hallmark of price optimization, since it utilizes data on specific individual purchase habits to determine elasticity of demand on an individual basis. Second, the 29.5% differential is not at all explained by the Allstate response. We are confident that it is based solely on elasticity of demand factors. Risk factors (whether for one or three vehicles) are included in the pricing at steps 1 to 39 of the Premium Calculation so the 29.5% that would be determined at Step 40 is not risk-related. The Wisconsin Department should ask Allstate for the calculation of the CGR factors, including the underlying data and model used, that produce the 29.5% differential between these two insureds.

Complementary Group Rating is a new rating factor. The proof of that is shown in the attached pages from Allstate's Wisconsin filing. Page RP-2A is the Premium Calculation. Note that the risk factors are found in Steps 1 through 39. Step 1, for example is the "Territory Base Rate," which is determined actuarially in the filing. It includes all of the underlying risk factors for the territory and is purportedly risk-based². Steps 2 to 39 adjust that risk-based territorial price by various factors (all multiplicative as Page RP-2A shows). This includes all of the information about the driver and the coverage and the car such as the limits purchased (Step 3), the rating tier (Step 5), accident record (Step 22), tickets (Steps 23 and 24), model year (Step

In fact, in that state, Allstate has so many potential micro-segments that it needed to condense its micro-segment disclosure. Otherwise, "there would have been over 200,000,000 additional micro-segments listed, which would represent over 2,000,000 additional pages with each filing." (Attachment VII, Page 1).

² If I were doing an actuarial review of the Allstate filing I see things I would challenge in the "normal ratemaking" part of the filing that I would argue makes even that part of the filing problematic. But this is irrelevant to the price optimization aspect of the filing being discussed here.

25), deductible (Step 26) and other factors to adjust the territorial base rate (Step 1) for the specific driver's characteristics and coverage requested.

After the risk of the specific vehicle is determined in Steps 1 through 39, the Complementary Rating Group (CGR) Factor is applied at Step 40. How micro-segments are assigned to a specific Complementary Rating Group is important and ignored in Allstate's response. All micro-segments with a similar elasticity score (or "index") become a part of the same Complementary Group. Thus rate classes are all mixed up in any Complementary Group. The CGR factor is, thus, not risk-based. The CGR factor is applied multiplicatively. Another reason it cannot be risk-based is because all of the risk factors have already been applied in steps 1 through 39. Step 40 is the CGR applied multiplicatively as a non-risk-based rating factor. Application of a non-risk-based factor to risk-based rates moves the final rate away from risk-based levels. Further, since the Complementary Rating Group is made up of households not grouped by risk but by a non-risk attribute (elasticity of demand), the final prices will, by definition, be the same for households of different risk in that CGR. Equally certain is the fact that, through this process, people of identical risk, now scattered about into different CGRs based on their various elasticities of demand, will be charged different prices. These results show that the classic definition of unfair discrimination (charging different rates to people with the same risk) is assured in this Allstate filing.

Indeed, each Complementary Group has a rating relativity ranging from a low of 0.1066 to a high of 9.3823³ (so the high factor is a remarkable 88 times higher than the low factor). This factor is applied as Step 40 in the "Premium Calculation" and, importantly, is applied after all risk factors are applied. Though clearly a rating factor, Complementary Group is, explicitly, not a risk factor since the risk has already been factored in steps 1 through 39 of the Premium Calculation. It should be noted that if Allstate is right, and CGR is wholly risk-based, then there is a double counting of the risk through the Premium Calculation process, which would improperly intensify the impact of whatever risk factor CGR reflected and would therefore be unfairly discriminatory for a different reason.

CFA requests that you ask Allstate this question: "Is the CGR a risk-based factor? If the answer is "no," then the resulting rate is clearly unfairly discriminatory since it varies the price not based on risk. If the answer is "yes," the follow up is to ask how can grouping households into Complementary Groups based on elasticity, not risk, yield a risk-based result? Either way it is clear that the resulting prices are unfairly discriminatory.

CLAIM #2

Allstate next suggests that its CGR should be recognized as a benefit to consumers, because it helps to limit the impact of the new rating model:

³ See pages RP-4A-1 and RP-4A-15 from the Allstate filing, attached.

This approach allows us to minimize disruption for customers as we update our estimates of expected loss costs and expenses over time. While Mr. Hunter baselessly asserts that Allstate's rating practices will somehow adversely impact low-income customers, efforts to minimize rate swings that come with updating loss data and rating models should be particularly beneficial to citizens of Wisconsin living on a budget.

They are begging the question. One apparent reason there is a need to minimize disruption for low-income consumers is that they have installed a new non-risk (i.e. marketplace consideration) tool for raising rates. Allstate is claiming that the policyholder disruption feature of CGR is a consumer protection, but they hide in this claim the acknowledgment that their unsupported "rating models" are the source of the underlying problem. Most oddly, the Allstate letter avoids the CFA claim of the Allstate rates reflect unfair discrimination. They avoid talking about how the CGR is built and how the CGR factor, being not risk-based, must produce unfair prices.

Presumably, though not harmlessly, the "policyholder disruption" criterion is constructed to address these rate swings. Even if we assumed that this particular criterion was not derived using elasticity of demand models (an assumption we do not make), Allstate's CGR factor explicitly goes beyond disruption abatement to include "marketplace considerations," which we believe to include, in some manner, an evaluation of consumers' price elasticity of demand (and which, it seems, Allstate does not dispute). Since demand models clearly have disparate impact on low-income and minority communities because of less competition in areas predominantly served by "non-standard" insurers, it is unclear how Allstate can make their claim. Further, studies show that lower-income drivers shop less than other economic groups (Brookings, 2006). Allstate also, in this point, returns to its earlier theme that CGR rating is simply a form of rate capping where selected rates are between current and indicated rates. Again, this is unsubstantiated. It is likely that some selected rates are above indicated rates. Further, while consumers whose rate increases are capped benefit from such capping, consumers whose rate decrease are capped do not benefit. More importantly, perhaps, is the question of why the rate swings are occurring. Is it solely because of changes in loss costs or do the swings also result from these unidentified "rating models" and/or marketplace considerations? The Department should require Allstate to provide a list of each current policyholder premium compared to the premium based on indicated and on selected rates. The Department should also determine if Allstate is treating new business consumers and existing policyholders of the same risk differently. This could be very important since agents from Allstate tell us that new business rates are shockingly low and unfair when compared to the rates being paid by long-term "loyal" customers.

CLAIM #3

Another unfounded and disprovable claim in Allstate's response is that the CGR system does not result in unfairly discriminatory prices. The company admitted just

the opposite (if only implicitly) when responding to a recent Maryland Insurance Administration request for information. Allstate was asked whether two policyholders “with identical risk characteristics will be rated differently” and responded as follows:

The extent to which a micro-segment moves towards indicated premium is influenced by the retention model, which evaluates the micro-segment’s responsiveness to price change. If micro-segments have identical indicated premiums, but either different current premiums and/or retention model predictions, they may receive different Complementary Group assignments. However, most of the characteristics used in the current premium calculation (our rating structure in place today) and in the retention model are also characteristics used within the loss model used to derive the indicated premium; therefore, micro-segments with identical indicated premiums will generally have similar current premiums, expected retention and Complementary Group assignment. (Emphasis added)

Allstate acknowledges three vital things here:

1. Illegal unfair discrimination exists in the filing according to this answer. People with the same risk can and do receive different Complementary Group assignments and, often, different rates.
2. They also admit here that a "retention model" contains price elasticity factors ("responsiveness to price change").
3. Not all of the characteristics used in Allstate’s “retention model” are characteristics used in the “loss model used to derive the indicated premium.”

CLAIM # 4

Allstate tries to turn the Casualty Actuarial Society Statement of Principles on its head by citing a section of it without the necessary full context, which reveals that it is not actuarially sound to use non-risk related factors. Allstate quotes parts of the 1988 CAS Statement of Principles Regarding Property and Casualty Insurance Ratemaking, but, incredibly, excises the Principles themselves. Here are the current CAS Principles of Ratemaking (entire section reproduced below):

PRINCIPLES

Ratemaking is prospective because the property and casualty insurance rate must be developed prior to the transfer of risk.

Principle 1: A rate is an estimate of the expected value of future costs. Ratemaking should provide for all costs so that the insurance system is financially sound.

Principle 2: A rate provides for all costs associated with the transfer of risk.

Ratemaking should provide for the costs of an individual risk transfer so that equity among insureds is maintained. When the experience of an individual risk does not provide a credible basis for estimating these costs, it is appropriate to consider the aggregate experience of similar risks. A rate estimated from such experience is an estimate of the costs of the risk transfer for each individual in the class.

Principle 3: A rate provides for the costs associated with an individual risk transfer.

Ratemaking produces cost estimates that are actuarially sound if the estimation is based on Principles 1, 2, and 3. Such rates comply with four criteria commonly used by actuaries: reasonable, not excessive, not inadequate, and not unfairly discriminatory.

Principle 4: A rate is reasonable and not excessive, inadequate, or unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer.

It is clear that a rate can be reasonable, not excessive, not inadequate and not unfairly discriminatory only if Principles one through four are met. Then the rate can be called “actuarially sound.” Allstate’s Wisconsin rates obviously do not comply with these actuarial standards.

Even the CAS material Allstate quotes sharply restricts the use of “marketing goals, competition and legal restrictions” only to “the extent they affect the estimation of future cost associated with the transfer of risk,” not to enhance profits by raising prices above the cost-based level and certainly not through non-risk-related price optimization methods.

CLAIM #5

Another claim is that insurers have always adjusted prices away from the point estimate for particular business reasons; we are just doing it better by computerizing it.

While it is correct that insurers have deviated from indicated rates in the past, that deviation has not been anything like what Allstate does in this filing. Historical deviation from rates has typically been an insurer selecting a lower rate than the indicated rate. Regulators have not routinely approved insurer requests for, say, a 20% rate increase when the insurer’s indication is for a 5% rate increase. Historical deviation from indicated rates has almost always been a lower selection than indicated and the lower selection has been across broad risk groups. For example, the indicated rate change is +20%, but the insurer selects a base rate increase of 5%. After review of thousands of auto rate filings in my career, I can only think of a handful of instances in which an insurer asked for any rate to be higher than the indicated rate (and, as I recall, these were disapproved). Indeed, Allstate implies

(though for obvious reasons does not state outright) in its letter that the purpose of its CGR is to moderate rate increases in the traditional manner, but the rate relativities in the filing prove that implication is false.

Allstate claims that they did this before...e.g., capping price increases, are not true. They never capped by micro-segment in groupings such as the CGR made up of households of different risk, they previously capped only by risk-class. Capping by risk class does not produce unfair discriminatory results. Capping through CGR grouping does.

Allstate's approach is new on both quantitative and qualitative bases. It employs consumer-specific information to deviate from indicated rates not by broad risk groups but by the individual consumers' household and those deviations are as likely or more likely to be higher than indicated rates than lower than indicated rates.

The engine of price optimization is price elasticity of demand – Allstate has changed the name to "Marketplace Considerations" or "Retention Model" – meaning the rate charged is dependent on the consumer's likely response to a higher rate. Allstate will charge a higher rate to a consumer for whom the retention-scoring model indicates the higher rate will not prompt the consumer to shop for insurance from other providers. This is not a symmetrical exercise in which some consumers will see lower rates while others will see higher rates. Price optimization, as Allstate does it here, is an altering of prices for the purpose of maximizing profit. Unnecessarily higher prices will be assessed on those consumers the insurer believes will accept prices greater than the expected and indicated cost of the transfer of risk.

CLAIM #6

Allstate conflates the new capacity to adjust risk analysis quickly through technology and the unrelated technology of retention modeling to justify the latter by the former:

Over time, the CGR process produces more actuarially sound rates especially when compared to other less refined methods of responding to marketplace considerations. First, it is more responsive to changing loss information. Re-assignment of micro-segments to different complementary groups can be filed regularly as the understanding of expected losses changes. Second, the rating structure is more stable. The CGR process reflects an understanding that no loss estimate is perfect, and the previous loss estimate used to calculate rates has a measure of validity. The use of more frequent loss estimates with tempered movement in the direction of the updated loss estimate will provide greater stability in the ratemaking process. Previously, customers would experience more significant gyrations in rate when a rating plan was overhauled or replaced every 5-7 years. Now, data can be updated more quickly so the rates reflect more current information.

Allstate provides no support for these claims. Moreover, it is contradictory (and actuarially impossible) to claim that selecting rates different from indicated rates produces more actuarially sound rates. What Allstate is doing is to achieve unfair discrimination more efficiently. Whether or not Allstate has technology that is more responsive to changing loss information does not alter the fact that the price optimization technology is installed with a different purpose, namely, to deviate from cost-based indications.⁴

The statement presumes that over time rates go up and go down in equal amounts. In fact, over time, rates go up far more often than they go down. Allstate's reference to rating plans being overhauled every 5-7 years is also without support. Since Allstate has been using generalized linear modeling of rates for nearly a decade, rating plans are revised frequently and rating factor relativities revised even more frequently.

CLAIM #7

Because the CGR structure guides the movement of rates between loss estimates, CGR cannot be used to raise a customer's rate above the most current loss estimate.

It is essential to understand that rates today are produced from modeling and not the historical approach of simply looking at historical experience. Modeling depends on a variety of assumptions, including choice of probability distributions and the parameters of the distributions used. With such modeling, indicated rates can be manipulated in a way not possible with historical methods. Again, it is essential for the Wisconsin Department to require Allstate to produce a list of each current policy premium and the corresponding premium under the CGR-based rates. It is also important to determine if the new loss models rely only on the filed rate classification scheme and no other factors. It is only with this information that some of Allstate's claims can be assessed or verified. Allstate, it must be noted, appears to have begun to use the term "loss estimate" in a manner that may exceed its technical bounds. The rates between which CGR guides movements are influenced by the impact of CGR's non-risk related criteria on the rate itself through the CGR factor. Therefore, it seems Allstate's claim can only be true if loss estimates are defined to include non-loss related information, which is not the case here.

Further review is necessary.

In addition to challenging the claims of the Allstate response, we suggested several

⁴ Towers-Watson defines price optimization as "a systematic process for suggesting adjustments to theoretical cost-based prices that better achieve business objectives, subject to known constraints. The key objectives are embodied in portfolio-level key performance indicators such as volume, premium revenue, profit, lifetime value, etc." [Towers-Watson presentation to the NAIC Auto Insurance (C/D) Study group on July 28, 2014.]

items that the DOI should investigate in the body of this analysis. Additionally, the model used for price elasticity is not shown in the filing, and you should obtain it by order. The Department and public ought to know what the "marketplace considerations" and "policyholder disruption" criteria are and how they are mathematically determined in the filing. We urge you to ask for the calculation, including data and assumptions, that produced the approximately 1,000 "Complementary Group Rating (CGR) Factors" found on the 16 pages of factors contained in filing exhibit RP-4A.