Complaint Ratios and Property-Casualty Insurer Characteristics

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Abstract: We extend previous research by Doerpinghaus (1991) and others by examining relationships between private passenger auto insurance complaint ratios and insurer characteristics. Consistent with Doerpinghaus, results indicate that insurers with higher complaint ratios are more likely to write high-risk auto coverage. In addition, this study provides evidence that insurers experiencing relatively fewer complaints spend significantly less on legal and auditing expenses and have a larger share of the state auto insurance market under consideration. While the direct writer distribution system is associated with significantly lower complaint ratios in a three-factor model, the significance ceases when the model is expanded to include additional insurer characteristics. Results also vary somewhat across the two states examined (Illinois and Oregon), but findings for several variables are consistent across these states. Robustness tests highlight the importance of the complaint ratio definition and the need for consistent complaint reporting at the state level. [Key words: complaint ratio, service quality, auto insurance, distribution system]

INTRODUCTION

In 2001, the U.S. private passenger automobile insurance market totaled approximately $128 billion in net premiums written (Insurance Information Institute, 2003). Several characteristics in the industry's structure make intense competition more or less inevitable (see Dumm et al., 2003).[1] First, several hundred carriers actively write business in the U.S. auto insurance

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market. These carriers generally have large and underutilized capital bases, heightening competitive pressures for growth. Second, auto insurance affords very little opportunity for product differentiation. New product features introduced by one carrier tend to be copied almost immediately by competitors. Any attempt to build competitive advantage on the basis of superior product quality is difficult to sustain. Third, the barriers to entry are relatively minor: capital requirements are low; technology and expertise generally are available in the open market and can be obtained with little difficulty. Fourth, a 2002 report by Conning Research & Consulting titled *Caution Flag for Personal Automobile Insurance* (Conning, 2002) indicates that auto insurance is a mature market, reflecting slow growth in the number of potential insured vehicles and drivers in the United States. In such a competitive environment, service quality and customer satisfaction play increasingly important roles.

The insurance industry is placing greater emphasis on the importance of service quality and customer satisfaction both in commercial and in personal lines. For example, in the mid-1990s the Quality Insurance Congress initiated efforts to engender widespread insurer strategic focus on improving quality and customer satisfaction. Higher levels of quality and customer satisfaction should help insurers to retain customers which, in turn, should reduce insurers' overall costs, since the cost of acquiring new policyholders far exceeds the cost of retaining existing business. For example, Zeithaml and Bitner (2000) suggest that today's accounting systems do not fully capture the value of loyal customers, indicating that a 5 percent increase in customer retention (loyalty) rates can lead to dramatic increases in profits (from 35 percent and higher).

One manifestation of these realizations is the widespread development of service centers that provide prospective customers, policyholders, claimants, and insurance agents greater ability to communicate and conduct business. Reichheld and Sasser (1990) state "… service companies are beginning to understand what their manufacturing counterparts learned in the 1980s—that quality doesn't improve unless you measure it." One measure of customer satisfaction for personal lines insurers is the complaint ratio, often expressed as the number of complaints against an insurer each year per $1 million in direct written premium.

The goal of this study is to examine complaint ratios for private passenger automobile insurance and their statistical relationship to characteristics of property-casualty insurers. The determinants of complaint ratios, while not perfect measures of firm service quality, provide insight on the drivers of quality and customer satisfaction as insurers focus more seriously on these areas. The next section reviews the literature for this

analysis of the relationships between property-casualty insurer complaint ratios and insurer characteristics.

PRIOR RESEARCH

On the basis of 1987 state insurance department insurer complaint ratios as an empirical measure of firm service quality, Doerpinghaus (1991) found that the complaint ratio was significantly related to underwriting specialization—i.e., insurers specializing in high-risk drivers received relatively more complaints. Although independent agency system insurers often have higher expense ratios relative to direct writer insurers, the study found a negative and significant relationship between distribution system (where direct writers = 1) and the complaint ratio for California data. Findings for this variable were not significant, however, based on Illinois and New York data.

Wells and Stafford (1995) found that higher levels of perceived service quality are significantly related to lower complaint ratios, suggesting that complaint ratios are reasonable proxies of service quality. Barrese, Doerpinghuas, and Nelson (1995) provided evidence that insurers using the independent agency distribution system produce higher levels of service, but that the service differential decreased with insurer size. Stafford and Wells (1996) reported that differences in perceptions of claims service quality were not significant across policyholder gender, but that perceptions differed across age groups and education levels. Chan (1998) reported that private passenger auto insurance coverage provided to consumers in high minority zip codes has relatively lower quality than for other zip codes. Query and Hoyt (2003) found that differences in customer satisfaction were not significant across insurers in terms of insurer size, organizational form, and a measure of delay in the settlement of claims. The most important factor for explaining customer satisfaction in their study was the distribution system used. However, they found conflicting effects of distribution system on satisfaction, depending on how policyholder satisfaction was defined and what line of insurance was under consideration.

Venezian (2002) examined the way that various states report automobile insurance complaint data. Using a variety of techniques, the study suggested that virtually any complaint data reporting method yields a distorted view for consumers that choose to use the data. For example, a small insurer may have few policies in a state, increasing the likelihood that the insurer, having no complaints in a given year, will appear to have superior service. Venezian (2002) also questions the stability of the factors affecting complaints. Using an interstate test, Venezian shows that factors

important in determining complaint ratios in one state often carry little weight in others.

In 1998, state insurance departments across the U.S. reported a total of 405,323 consumer complaints. Beginning with information from these complaints, department analysts attempt to determine the relative merit of each complaint (see Klein and Schacht, 2001). As stated earlier, the present study is motivated by the desire to identify commonalities across insurers that tend to have lower complaint ratios.

The current study extends this research in several ways. First, we replicate the Doerpinghaus model and include more recent data to see if changes have occurred since the late-1980s when that study was conducted. In addition, the more recent dataset spans several years (1996–1999 versus 1987). We introduce several new variables to test hypotheses to explain variation in consumer complaints across the sample of insurers. The current study also tests for differences across states (Illinois and Oregon) and includes robustness tests using alternative definitions of the complaint ratio.

The aspects of an insurer's operations that, ex ante, would seem to relate to customer satisfaction include the timely payment of valid claims,[2] the insurer's commitment to the auto line, the insurer's distribution system, and financial strength, among other factors. The next section describes the current study's research hypotheses and variables.

HYPOTHESES AND VARIABLES

What drives "quality" in auto insurance? "Quality" has a number of definitions, both inside and outside the insurance industry, but insurance quality can be measured by sampling customers' reactions to their experience with the insurance product. Query and Hoyt (2003), Wells and Stafford (1995), and Barrese, Doerpinghaus, and Nelson (1995) focused on affirmative measures of customer satisfaction, where a higher number reflects higher levels of pleasure with the experience. Doerpinghaus (1991), Venezian (2002), and the present study approach quality by measuring customer *dissatisfaction* as measured by how frequently customers are sufficiently dissatisfied to complain. While automobile insurance *satisfaction* and *dissatisfaction* may be measured in different ways, they likely have similar origins.

In the present analysis, hypotheses are grouped in terms of service, commitment to auto line, operational makeup, financial strength, and other insurer characteristics as control variables. Each of these groupings—and variables within each grouping—draws from those areas specified in

previously cited literature on complaint ratios and customer satisfaction. Also, this study tests these hypotheses with the use of alternative variables where permitted by the data.

Service

Insurers providing consistently high levels of service are likely to receive relatively fewer complaints. The variables below attempt to capture important service dimensions in the insurance transaction.

Claim Delay (CLAIMDELAY). Excessive delay in paying valid claims is likely to lead to greater complaints. This variable is specified as a weighted average of the proportion of claims that are still outstanding relative to reported claims over a two-year period, with the weights increasing with time (i.e., the longer the claim has been outstanding, the larger the weight). Specifically, CLAIMDELAY = {propout2*3 + propout1*2 + propout0}, where propout2 is the proportion of claims still outstanding from period t-2 relative to the total number of claims outstanding; propout1 is the proportion of claims still outstanding from period t-1 relative to the total number of claims outstanding; and propout0 is the proportion of claims still outstanding from period t relative to the total number of claims outstanding. In most short-tail property claims such as auto insurance, complaints would be generated from claims that went unsettled in a matter of days, weeks, or months. However, the data to measure such short delays are not available. The variable described here likely serves as a proxy for a measure of outstanding liability claims; however, the data limitations bias against finding a statistically significant result. Alternatively, a finding that CLAIMDELAY has a statistically significant negative coefficient may suggest that some insurers delay claim payments for certain claimants, perhaps especially third parties or others who may be less likely to complain (see Stafford and Wells, 1996). Other personal biases also might enter into the claim settlement process (see Doerpinghaus, Schmit, and Yeh, 2003).

Legal and Auditing Expenses to Net Premiums Written (LEGALAUD-NPW). Insurers that spend more resources on legal and auditing expenses may do so as a result of denying valid claims or challenging a larger number of claims, thus resulting in more delay in the claims process. This variable is measured as the amount spent on legal and auditing expenses relative to the net premiums written in a given year on a national level. Alternatively, a finding that LEGALAUD-NPW has a statistically significant negative coefficient suggests that extra spending on legal and auditing expenses may indeed reduce complaints by reducing waste and fraud, which may discourage fraud in the long run and weed out fraud-motivated complaints.

Commitment to Auto Line

The importance and size of the auto insurance business to the insurer is likely to be related to the level of consumer complaints. These notions are captured by both the size of the auto premium written by the insurer in the state and the percentage of the state's auto insurance market written by the insurer.

Log Auto Premium (LogAUTOPREM). Insurers that have a greater share of the auto insurance market in a state have a greater commitment to the auto line and therefore likely also have a greater interest in providing excellent service and thus in minimizing complaints. Alternatively, a finding that LogAUTOPREM has a statistically significant negative coefficient could reflect that small niche insurers excel by providing excellent service. This variable is measured as the log of auto premiums received by the insurer (in the state studied).

Percent of Business Auto (PERBUS). If auto insurance premiums make up a large proportion of total premiums collected by the insurer, then that insurer has a greater interest in providing excellent service and thus in minimizing complaints. This variable is measured as auto premiums received by the insurer in the state relative to total premiums received by the insurer (in the state studied). Alternatively, a finding that either LogAUTOPREM or PERBUS has a statistically significant positive coefficient suggests that size or a large market share within the state may have led to insurer complacency or "depersonalization" and therefore more complaints.

Operational Makeup

Factors such as the organization form and distribution system of the insurer are likely to shape both the type of insureds and the business practices of the insurer. Additionally, the type of clientele is likely to affect the probability of consumer complaints. These fundamental operational traits are considered in relation to the complaint ratio.

High-Risk Auto Writer (HIGHRISK). Since the claims process provides ample opportunity for poor service to manifest itself, and because high-risk drivers are involved in relatively more accidents than other drivers, then insurers that write "high-risk" auto coverage would be expected to incur more complaints. Alternatively, a finding that HIGHRISK has a statistically significant negative coefficient suggests that more high-risk drivers may indeed reduce complaints since this clientele may accept a lower level of service without complaining. This variable is specified as an indicator variable, coded as one (1) with insurers that voluntarily write non-standard automobile insurance and as zero (0) otherwise.

Organizational Form (ORGFORM). Stock insurers have stockholders to satisfy in addition to policyholders, and thus may face constraints in providing superior service to their insureds, and thus may be more likely to incur complaints. In addition, mutual insurers are expressly formed for the benefit of their policyholders. According to this reasoning, mutual insurers would be likely to have lower complaint ratios relative to stock insurers. Alternatively, a finding that ORGFORM has a statistically significant negative coefficient suggests that stock insurers may be more motivated by the scrutiny and growth demands of stockholders (relative to mutual insurers) to deliver higher-quality service. This variable is specified as an indicator variable and is coded as one (1) for stock insurers and as zero (0) for mutual insurers.

Distribution System (DIST). Insurers using the direct writer or exclusive agency distribution system may focus their underwriting capacity on preferred risks (see Doerpinhghaus, 1991), thus producing a book of business that is less likely to have accidents and to produce complaints. Conversely, while the independent agency system has been criticized as being more expensive than the direct writer or exclusive agency distribution systems (see Joskow, 1973; Cummins and VanDerhei, 1979; and Pauly, Kunreuther, and Kleindorfer, 1986), the system has been justified on the basis of possibly providing higher levels of service (see Barrese, Doerpinghaus, and Nelson, 1995). From this perspective, insurers using the independent agency system might be expected to incur fewer complaints. The distribution system variable is specified as an indicator variable, with insurers using the direct writer or exclusive agent system coded as one (1) and insurers using independent agents coded as zero (0).

Financial Strength

Financial strength provides many benefits to an insurer, chief among them being the ability to promptly pay claims and the resources to provide exceptional service.

Underwriting Leverage (UWLEV). Insurers that are highly leveraged, as measured by total national net premiums written relative to surplus, have a lower tolerance for losses that are greater than expected. Therefore, these insurers are more apt to be stringent with regard to claims payments, and thus more likely to incur complaints. Doerpinghaus refers to this phenomenon as "strained financial capacity." Alternatively, a finding that UWLEV has a statistically significant negative coefficient suggests that high underwriting leverage may have led insurers to emphasize customer service to maintain their customer bases, resulting in fewer complaints. Also, highly leveraged insurers may not have the resources to fight "borderline" claims. This situation may lead to reduced levels of complaints.

Net Underwriting Gain to Premiums Earned (NUG-PE). Insurers that have practiced sound underwriting practices and that are not "strapped" for cash to pay claims are likely to provide higher levels of service and thus receive fewer complaints. This variable is measured as net underwriting gain relative to premiums earned. Alternatively, a finding that NUG-PE has a statistically significant positive coefficient suggests that insurers that focus on sound underwriting may have made some policyholders angry with underwriting practices such as "cherry picking" or "cream skimming."

Other Insurer Characteristics and Control Variables

In addition to the variables above that attempt to capture elements of service, commitment to the auto line, operational makeup, and financial strength, it is important to control for other aspects that likely relate to the insurer's position in the insurance marketplace, such as insurer size and trends in the industry not otherwise captured. For this reason, **Log of Net Premiums Written** (LogNPW), measured as the natural log of net premiums written on the national level, is included along with dummy variables for years (YEARDUMMIES).

METHODOLOGY, SAMPLE, AND DATA

Four broad categories are employed to characterize an insurer's ability to compete in the private passenger automobile insurance market: insurer service, commitment to the auto line, operational makeup, and financial strength. To examine the hypotheses discussed above in relation to the complaint ratio, the following model is used for each dataset (described below):

$$CR_{i\,j} = \alpha + \Sigma\beta\, V_{i,j} + \Sigma\beta W_{i,j} + \Sigma\beta X_{i,j} + \Sigma\beta Y_{i,j} + \Sigma\beta Z_{i,j} + \varepsilon_{i,j} \qquad (1)$$

where i and j represent the ith year and the jth insurer, and

$CR_{i,j}$ = natural log of the complaint ratio: the number of complaints per $1 million in written premium

$V^{i,j}$ = a vector of variables representing insurer j's service in the ith year (including CLAIMDELAY and LEGALAUD-NPW)

$W_{i,j}$ = a vector of variables representing insurer j's commitment to the auto line in the ith year (including LogAUTOPREM and PERBUS)

$X_{i,j}$ = a vector of variables representing insurer *j*'s operational makeup in the *i*th year (including HIGHRISK, ORGRORM, and DIST)

$Y_{i,j}$ = a vector of variables representing insurer *j*'s financial strength in the *i*th year (including UWLEV and NUG-PE)

$Z_{i,j}$ = a vector of variables representing control variables for insurer *j* in the *i*th year (including LogNPW and YEAR-DUMMIES)

$e_{i,j}$ = a random error term

The sample includes those firms writing auto insurance in Illinois and/or Oregon with complaint ratios in a given year. Complaint ratios are compiled by the respective state insurance departments. The dataset for Illinois contains complaint ratios only for those insurers with 10 complaints or more, while the dataset for Oregon contains all complaints. The complaint ratios from Illinois and Oregon were collected for the period 1996 to 1999. For consistency, the Oregon data for the complaint ratio were adjusted to conform to the Illinois method of including only insurers with 10 or more complaints in a given year. While many states publish information on complaint ratios, the states of Illinois and Oregon are utilized for several reasons. First, the basic manner in which the states calculate complaint ratios is the same. Further, the fact that Oregon captures complaint data for all insurers, even those with fewer than 10 complaints in a given year, allows for a test of the potential impact of the restriction of 10 complaints or more in Illinois, while still providing the option to create a similar ratio. Additionally, neither state is a no-fault state, thus the overall automobile insurance regulatory environment is similar.[3] While the addition of other states would provide some increased explanatory power, the difference in complaint ratio construction and regulatory environments makes it difficult to compare a large number of states in this manner.

The insurer financial dataset is from the *National Association of Insurance Commissioners Database* for the respective study periods. Insurers that write high-risk (non-standard) on a voluntary basis are identified using *Best's Insurance Reports*.

Table 1 provides a summary of the complaint data for Illinois and Oregon during the sample period. For Oregon, complaint data are presented both for the total number of complaints and for insurers with 10 or more complaints, in an effort to provide a better comparison with the Illinois data. The mean complaint ratio for Oregon (4.51) was much higher than the mean complaint ratio for Illinois (1.50), and we note that several insurers in Oregon had complaint ratios near the upper end of Oregon's annual range.

Table 1. Annual Premium Data and Complaint Ratios—Illinois and Oregon Private Passenger Auto Insurance

Year	# of Insurers with ten or more complaints (and total number of auto insurers)[a]	# of insurers with any number of complaints[b]	Minimum and maximum complaint ratios[c]	Mean complaint ratios[d]
		Illinois		
1996	33 (185)	N/A	.30 and 11.97	2.09
1997	20 (207)	N/A	.29 and 6.78	1.45
1998	18 (230)	N/A	.22 and 3.15	0.93
1999	22 (229)	N/A	.15 and 4.32	1.42
AVERAGE	23.25	N/A	.25 and 7.34	1.50
		Oregon		
1996	31 (104)	77	.25 and 16.59	4.84
1997	30 (129)	85	.29 and 17.28	3.47
1998	28 (132)	78	.20 and 42.36	5.61
1999	26 (128)	76	.77 and 30.34	4.16
AVERAGE	28.75	79	.37 and 26.15	4.51

[a]Total number of insurers for each state includes only those insurers with at least $250,000 in net auto premiums written for each year.

[b]Data for Illinois insurers with fewer than 10 complaints in a given year were not available.

[c]Only insurers with 10 or more complaints are included in the Illinois complaint database. The Oregon data are adjusted in accordance with this threshold.

[d]Complaint ratio is the number of complaints per $1 million of direct premium written in that state.

It should be noted that, for both states, the complaints are registered complaints. The insurance department does not differentiate between complaints in which the complaint was justified and/or the insured ultimately received some action for the insurer. While some insurers may argue that only confirmed or justified complaints should be recorded, it is likely that complaints in general have some level of cost to insurers, especially if complaints lead to lower customer retention rates (see Zeithaml and Bitner, 2000). Additionally, if summary data related to all complaints are published by the state, that number may work its way into the popular press and thus have an impact on insurers.

Table 2. Regression Results—Comparison of Results from Doerpinghaus (1991) with Results from the Present Study
(Dependent Variable: Number of Complaints Per $1 Million Written Premiums)

Independent Variables	(Doerpinghaus) California[a,b] (1987 data)	(Doerpinghaus) Illinois (1987 data)	(Present) Illinois (1996–1999 data)	(Present) Oregon (1996–1999 data)
Intercept	.81***	1.40	–.90***	.66**
HIGHRISK (+)	.33**	4.10**	.91***	.47***
DIST (–/+)	–.13**	.78	–.75***	–.87***
UWLEV	–.12	.30	.01*	–.09
R–Squared	.37	.29	.37	.17

*, **, and *** represent significance at the .10, .05, and .01 level, respectively.
[a]The complaint ratio for California is the number of complaints per thousand autos written.
[b]Doerpinghaus also examined New York data, and results did not indicate any significant relationships for that state. At that time (1987), New York included commercial with private passenger complaint data.

RESULTS

In order to provide a comparison to the results of a prior study, we first replicate the Doerpinghaus (1991) model. The results are shown in Table 2. Results for the present study using this three-factor model are quite similar to those found by Doerpinghaus, who used 1987 data for Illinois and California.

As shown in Table 2 above, the variable indicating that the insurer writes business in the non-standard auto market (HIGHRISK = 1) is positive and significant across all models. Thus, insurers voluntarily writing in the non-standard market are more likely to receive complaints than insurers not active in this market. The variable indicating that the insurer uses the direct writer or exclusive agency distribution method (DIST = 1), as opposed to the independent agency system, is negative and significant for California. Doerpinghaus suggested that selection of preferred risks by exclusive agents and direct writers resulted in fewer complaints. The DIST variable also is negative and significant both for Illinois and Oregon in the present study's three-factor model, providing support for this inference. The underwriting leverage variable (a proxy for output relative to financial capacity) is not significant in the Doerpinghaus models. However, underwriting leverage (UWLEV) is positive and significant for one of the states

Table 3. Regression Results
(Dependent Variable: Natural Log of Complaints Per $1 Million of Written Premiums)

Independent variables	Illinois	Oregon
Intercept	3.55***	4.29***
CLAIMDELAY	.59**	.27
LEGALAUD-NPW	22.86***	7.62**
LogAUTOPREM	–.08**	–.41***
PERBUS	–.57**	.34
HIGHRISK	.60***	.32**
ORGFORM	.00	.29*
DIST	–.72	–.37
UWLEV	.18	.01
NUG-PE	.00	–.00
LogNPW	–.14***	.15***
YEARDUMMIES	all***	all***
Adj. R-Squared	.66	.48
Model F	13.66***	8.83***

*, **, and *** represent significance at the .10, .05, and .01 level, respectively.

(Illinois) in the present study. Thus, some evidence is found that increased complaints may result from strained financial capacity.

The analysis above indicates that the findings of Doerpinghaus (1991) generally continue to hold true, over a decade later. It is likely that additional factors also play a role in the determination of complaints filed with state insurance departments. Thus, the analysis below builds on and broadens the set of variables included in the regression models.

Table 3 shows regression results for the two states examined here, Illinois and Oregon. The dependent variable is the natural logarithm of complaints per $1 million in written premium. As stated earlier, for consistency, the Oregon data for the complaint ratio were adjusted to conform to the Illinois method of including only insurers with 10 or more complaints in a given year. Variance inflation factors indicated that collinearity was not a significant concern, and the results have been corrected for heteroskedasticity.

The results in Table 3 demonstrate that three of the insurer characteristics considered in this study have a consistent and statistically significant impact on automobile insurance complaint ratios. First, insurers that experienced more complaints tend to spend more on legal and auditing expenses (LEGALAUD-NPW). Second, insurers receiving fewer complaints in a state tend to write more auto premiums (LogAUTOPREM) in that state. This finding may indicate a comparative advantage in customer service by these insurers or the presence of economies of scale. Third, consistent with prior research, insurers that receive more complaints are more apt to write non-standard auto insurance on a voluntary basis (HIGHRISK). Note also that insurers writing high-risk coverage tend to have relatively higher legal and auditing expenses (significantly correlated at the .01 level for both Illinois and Oregon).

For the other variables, the results are not as robust to variations across states. While delays in claims payment (CLAIMDELAY) appear to increase complaints in Illinios, the relationship is not significant in Oregon. This is not surprising given the limitations in the data construction for this proxy.

In Illinois (but not in Oregon), there is evidence that an insurer's focus on auto insurance—the percentage of an insurer's premium volume that comes from auto insurance (PERBUS)—appears to reduce complaint levels. This finding provides weak evidence that specialization in a given line of business may be related to an overall reduction in the level of complaints. As predicted, there is some support for the hypothesis that stock insurers (ORGFORM) have more complaints. It is interesting to note that while significant in the three-factor model, distribution system (DIST) is not significant in the expanded model. This result suggests that the distribution system was a proxy for other differences in the insurers that are now captured by the more inclusive set of firm characteristics. Control variables related to overall firm size and year controls also are significant.

Oregon also provides information on complaints for which an insurer took corrective action ("confirmed complaints"). In addition to the results presented in Table 3, we examined a modified complaint ratio that includes only confirmed complaints for 1999. The results (not shown) for Oregon were significantly different from those in Table 3 (only LEGALAUD-NPW and LogAUTOPREM were significant), illustrating the importance of examining differences in how the complaint data are compiled across states. The Illinois dataset does not contain information on confirmed complaints, and so a direct comparison between these two states is not possible. Chan (1998) notes that approximately 33 percent of complaints are "valid" on the basis of data for Missouri—i.e., eliminating "unconfirmed" complaints likely accounts for much of the differences in the Oregon results when comparing *all* complaints with *confirmed* complaints.

DISCUSSION

The results of this study help to shed light on the factors driving consumer complaints in automobile insurance. Complaints in auto insurance are positively related to spending on legal and auditing expenses and the decision to write high-risk auto coverage, but inversely related to the amount of premium volume an insurer generates in that state. While the spending on legal and auditing activities and the overall size of the insurers doing automobile writing in the state are new variables added in this study, the relationship between the decision to voluntarily write non-standard auto insurance and increased complaints provides confirmation of the results of Doerpinghaus (1991). This finding is particularly relevant for regulators to consider when evaluating complaint ratios of different insurers. It does not necessarily follow that an insurer with a higher complaint ratio is providing inferior service than another insurer with a lower complaint ratio, especially if the former insurer is writing relatively more high-risk auto coverage.

The evidence related to the importance of the speed of claims payment, specialization in automobile insurance, and organizational form are weaker and not consistent across the two states examined (Illinois and Oregon). These findings support Venezian (2002), who suggested that factors that drive complaints often are not consistent across states. Results provide support for several hypotheses as well as areas in which insurers and future researchers may wish to explore to better understand behavior related to consumer complaints. It is clear that both the characteristics of the insured (HIGHRISK) and the handling of claims (LEGALAUD-NPW and CLAIMDELAY) have some bearing on the overall level of complaints. This observation may lead some insurers to adjust their underwriting guidelines or the way in which claims are settled in terms of defense strategies. It also appears that an increased presence in a state's automobile market (LogAUTOPREM) may allow for economies of scale that help the insurer to better service its customers. Strategically and managerially, profit maximization may take precedence over complaint minimization, yet these two objectives are not necessarily at odds. Given the expense and publicity of complaints, it may make sense to pursue profit maximization along with a strategy that reduces reported complaints.

CONCLUSIONS

This study examined the relationship between auto insurance complaint ratios and insurer characteristics. Results indicate that insurers with

higher complaint ratios are more likely to write high-risk auto coverage and to spend significantly more on legal and auditing expenses. Further, this study provides evidence that insurers experiencing fewer complaints have a greater presence in the state auto insurance market under consideration. While the direct writer distribution system is associated with significantly lower complaint ratios in a three-factor model, the significance ceases when the model is expanded to include additional insurer characteristics. While some consistency in results was found for the Illinois and Oregon data, this research finds that factors that account for complaints in one state are not necessarily the same factors that are important in other states, a finding consistent with Venezian (2002). These findings highlight the importance of how the complaint ratio is defined and the need for consistent reporting across states.

Future research still is needed to investigate the ways in which claims are handled in terms of the quality of service for third-party versus first-party claimants. A large number of third-party complainants would affect the insurer's complaint ratio, but likely would have relatively less impact on the insurer's customer retention rate. Further, research in this area should explore the extent to which the complaint ratios are used by the public in their purchase and renewal decisions. Finally, future research should examine variation in complaint ratios across states and the factors (such as differences in the complaint filing process as well as the data collection process) that may lead to disparate levels of complaint ratios across states.

NOTES

[1] Bajtelsmit and Bouzouita (1998) find that concentration has a significant positive effect on insurer profitability, even after controlling for regulatory and cost differences, thus calling into question the competitiveness of the private passenger auto insurance industry. The paper indicates that an alternative explanation was stated by Demsetz (1973)—namely, that the higher profitability of insurers in states having greater concentration results from greater efficiency of large firms.

[2] Indeed, McCabe and Witt (1980) posit that the demand for an insurer's product will be a function not only of price but also of the average time the insurer takes to settle claims.

[3] Oregon has a mandatory add-on provision for first-party benefits.

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