

Consumer Information and Decisions to Switch Insurers

Harris Schlesinger
J.-Matthias Graf von der Schulenburg

ABSTRACT

This article examines the interaction of various factors in an individual's decision to switch insurers. In particular, expectations about insurer quality attributes as well as search costs and switching costs are modeled as affecting the consumer's switching decision. Data from a 1983 survey of 2,004 German individuals are used to determine consumers' impressions about the quality and price of their auto insurance policies. The empirical analysis shows how consumer informedness plays a key role in the switching decision. Factors affecting consumer informedness and the sources of consumer information also are examined.

Introduction

Undoubtedly, there is no other product for which consumer ignorance is so prevalent. Many consumers are unaware that there are price differences among insurance companies.... Comparative price shopping is very difficult since price differences for comparable coverages are not available in printed form.... Asking [the fellow in the next office] about his insurance is of little value since he is in a different risk class, lives in a different community, and drives a different kind of car (Joskow, 1973, p. 404).

Many markets are characterized by substantial differences in price, even though the good being sold is considered to be fairly homogeneous. One such

Harris Schlesinger is Samford Chair of Insurance at the University of Alabama and, currently, guest Research Fellow at the Science Centre in Berlin. J.-Matthias Graf von der Schulenburg is Professor of Economics at the University of Hanover.

Data used in this article were collected at the Wissenschaftszentrum, Berlin, under a grant from the Deutsche Forschungsgemeinschaft (German National Science Foundation). This research was begun while both authors were Research Fellows at the Wissenschaftszentrum. We are indebted to Jörg Finsinger, who organized the data collection, and to Rüdiger Grüne-Henze and Matthias Langer for their capable computer assistance. We also received helpful comments on an earlier draft from J. David Cummins, John Formby, Howard Kunreuther, Paul Thistle, and especially from Bev Dahlby. Remaining errors are our own.

market is that for automobile insurance. In many instances, identical policies issued to the same individual by different insurers will sell for dramatically different premiums. The reasons for this are mainly informational. As Joskow's quote above indicates, information is not easy to obtain in insurance markets. This article investigates the role of information in the decision to purchase insurance from a particular firm, paying special attention to the decision to switch companies. Our main contention is that consumers not only must incur search costs to obtain price information, but that they also must obtain information on product quality, which can be obtained only through experience. Furthermore, once an insurer is chosen, there exists a switching cost for changing companies, which reduces the propensity to switch. Consumer survey information from the Federal Republic of Germany is used in this article to support these contentions.

The fact that insurance *contracts* are identical does not necessarily mean that the insurance *product* is homogeneous among suppliers. Indeed, the quality of the company, its reputation, solvency characteristics, marketing methods, claims handling procedures, and so on make the insurance product different from firm to firm. Furthermore, much of the information about the insurance product's quality and other attributes is not available to the consumer at the time of purchase. For example, a consumer might need to wait until an accident occurs and a claim is filed before he or she has sufficient information on a particular insurer's claims service. This example highlights the "experience-good" nature of insurance, whereby many product attributes are learned only after the product has been purchased and "used."

Even if we ignore product differences, consumers typically must incur search costs if they wish to compare prices of insurers. Indeed, Joskow's quote is underscored by results of a 1973 U.S. survey (Cummins et al., 1974) which revealed that about one-half of all U.S. consumers surveyed had never compared prices for their automobile insurance policies. Several authors have expanded Stigler's (1961) explanation of costly search as a cause of price dispersion. Dahlby and West (1986) used data for compulsory third-party automobile liability insurance in the province of Alberta (Canada) and found empirical support for the "costly-search" argument in explaining price dispersion in this market.

The notion of "switching costs," or what Weizsäcker (1984) calls the "costs of substitution," recently has received a fair amount of attention in the literature, especially with regard to its effects on market structure (see, for example, Klemperer, 1987, and Farrell and Shapiro, 1988). The key idea is that buyers incur real costs for switching from one supplier (in this case, an insurer) to another, as explained by Williamson (1979). These costs enable the original supplier to exert some monopoly power over established customers. Thus, consumers have a reservation-price differential equal to the switching costs and will not switch to a new supplier unless the quality-adjusted price reduction exceeds this switching cost.

The purpose of this article is to examine the interaction of these components in the consumer's insurance purchasing decision. Using data from a 1983

survey of 2,004 German consumers, we examine their impressions of the quality of their automobile insurers. We then assess the informedness of consumers about insurance prices and other insurance market characteristics. We have data both on how expensive individuals perceive their insurer to be relative to other insurers and on the actual price differentials, which we use to examine the degree of accuracy of consumer perceptions. We later show how becoming "informed" appears to be more than just a consequence of socioeconomic factors and, hence, may be taken to imply some type of consumer search. We also develop a broader information index, which reflects the consumer's degree of overall informedness.

In the latter part of this article, we examine the consumer's decision to switch insurers. The empirical analysis shows how being informed affects the switching decision. Not only is the conditional probability of switching higher for informed individuals, but the price variables, which are shown to significantly affect the switching decision of the informed individuals, are insignificant in the switching decisions for the uninformed consumers. We also find a tendency to switch to lower-priced insurers, although this tendency is not as strong as reported in some of the previous literature.

Evidence of and Explanations for Price Dispersion

Price dispersion in the market for automobile insurance is pervasive and substantial. When one of the coauthors last searched for automobile coverage after purchasing a new car, the highest price quoted was more than double (147 percent more than) the lowest quoted price, from a sampling of five insurance agents (in Champaign, Illinois) who quoted prices. This is not out of line with other observations about automobile insurance prices. For example, Jung (1978) found the highest price to be 171 percent higher than the lowest price for an identical policy in the city of Chicago in 1976. A sampling of ten firms in New York State in 1983 by Berger (1985) shows a maximum price that exceeds the minimum by 106 percent within one geographic territory. Moreover, price dispersion is not limited to the U.S. market. For instance, prices obtained from 72 German companies showed average premiums ranging from DM 455 to DM 594, or about a 30 percent differential.¹

These dispersion figures are supported further by corresponding coefficients of variation for insurance premiums on identical policies. Coefficients of variation ranged from 10.95 percent to 16.62 percent among 40 territories in the state of Pennsylvania in 1982, according to data used by Berger, Kleindorfer, and Kunreuther (1989). Berger (1985) uses price data from ten insurers in New York State in 1983 with coefficients of variation ranging from 10 percent to over 20 percent among the 70 territories. Dahlby (1987) shows a coefficient of variation of 19.21 percent for automobile liability insurance premiums in

¹ The "average" premium was calculated by averaging the premiums for ten different policies across risk classes for each company. We should also point out that, throughout the article, Germany refers to West Germany as it existed prior to reunification.

territory 1 in Alberta in 1982. We thus see that price dispersion is very pronounced in the automobile insurance market.

Given the above evidence on price dispersion, a natural question is, how can this persist? One argument is that price dispersion is a disequilibrium phenomenon—a point made by Berger, Kleindorfer, and Kunreuther (1989). However, price dispersion does not appear to be lessening over time, and most explanations of price dispersion have focused on equilibrium models. Existing explanations include quality differences between policies, the costs of consumer search, and the costs involved in switching companies. We briefly discuss each of these below.

Quality Differences

In all of the empirical evidence mentioned above, the authors have (implicitly or explicitly) assumed that the product in question is homogeneous. Indeed, in all of the cases considered, the insurance *contract* under investigation is homogeneous. For example, Dahlby and West (1986, p. 419) are correct when they state, “the insurance policy that we examine, third-party liability insurance, is homogeneous.” However, the insurance *product* is itself a service, not just words on paper. The attributes of this product are very likely to be—or, more importantly, to be perceived as—different from company to company. An insurer that pays claims fairly and in a timely manner will likely be able to command a higher price than a competitor that pays reluctantly. Taking such a service-quality attribute into account, price differentials may be not only justified, but desirable in a population of heterogeneous consumers.

As another example, consider that insurance offered through local agents is usually more expensive than coverage sold only via mail and telephone. Yet many consumers apparently feel the value of a local agent is worth the extra premium. Of course, the quality of agents varies, as does the effectiveness of phone services. For example, one insurer might have a 24-hour toll-free claims number, while another does not; or one might have a 24-hour claims number, but it might always seem to be busy. The automobile insurance contracts that we consider below, in the empirical part of the article, are all identical; but their service attributes differ, and hence the insurance product is not homogeneous.²

Imperfect Information and Search Costs

Whether consumers buy at the lowest price depends in part on their knowing what the lowest price is. As pointed out by Stigler (1961), a positive cost of

² Smallwood (1975) first suggested that differences in the quality of service may explain price dispersion in the automobile insurance market. Service quality includes both the quality of claims services, which, although sometimes observable when friends and neighbors experience claims, are usually not learned until one experiences a claim, and the quality of nonclaims services, such as the quality of counseling in purchasing or renewing a policy.

information can lead to price dispersion in a market equilibrium, even in cases with a homogeneous product.

As stated above, prices in the automobile insurance market vary rather widely. Interestingly, although prices in the German market are somewhat more uniform than in the United States, a larger portion of German consumers seems to be aware of price disparities. Our German survey data show that 67 percent of those questioned thought there was "a price difference worth naming" between companies, whereas only 12 percent said there was essentially no difference. This compares to 45 percent in the U.S. market who thought there was a price difference and 45 percent who thought there was no price difference, according to a study by Cummins et al. (1974).³ However, this does seem surprising when one considers that less than one-half of all consumers in the U.S. survey ever compared the premiums of two or more companies. The higher awareness of price dispersion in Germany might also be due to the fact that door-to-door insurance salespeople are quite prevalent for automobile insurance in Germany and are probably a key mechanism for conveying price information.

Since Stigler's (1961) seminal article, several authors have modeled costly consumer search as a cause of price dispersion. For example, Butters (1977), MacMinn (1980), and Carlson and McAfee (1983) have shown that, if price information is costly, differences in production costs and in advertising expenditures among suppliers can lead to equilibrium price dispersion. Dahlby and West (1986) find empirical support for costly search as an explanation for price dispersion. In particular, they examine data for third-party liability insurance in the province of Alberta, Canada, and find that their data supports the model of Carlson and McAfee.

Taking into account that the product of insurance is not homogeneous, the problem becomes a two-dimensional search over price and quality. This type of search has been modeled quite well by Hey and McKenna (1981). Below, we present a simple model based on theirs, which tries to capture the essence of the two-dimensional search.

Switching Costs

As a consequence of costly search, many policyholders will be unaware of the relative price of their own insurer vis-à-vis other insurers (see Tables 6 and 7 below). Consumers that do search (or are at least informed about the relative prices) might not switch companies, even if they find a better price/quality combination. The reason for possibly not switching has to do with the cost of changing insurers—so-called switching costs. Many of these costs are monetary, such as foregone discounts and premium bonuses to established customers of a particular insurer. Some of these switching costs might be nonpecuniary, stemming from loyalty to a particular insurer which has

³The survey reported by Cummins et al. (1974) was administered to a representative sample of 2,462 individuals across the United States by Louis Harris and Associates in 1973.

developed during a long-term relationship.⁴ Quite often, for instance, the insurance agent is a friend or neighbor who might be receiving the family's insurance business more as an act of friendship than as any type of market-based decision. Moreover, insurers gain information on policyholders by insuring them over time. Some of this information is nontransferable (e.g., not captured in bonus/malus schemes), such as whether the customer pays premiums on time (see D'Arcy and Doherty, 1990). If insurers show favor toward customers revealed to be "better" by this private information, it would be another rationale for a reluctance to switch. Such consumers have substantial switching costs and would not change insurers unless the price saving and/or the quality improvement was substantial.

Empirical work by Berger, Kleindorfer, and Kunreuther (1989), using the data of Dahlby and West (1986) for Alberta, Canada, found that there was "substantial movement from very high to very low priced firms, with little movement in the intermediate range. The picture which emerges is that of a . . . reluctance to switch companies unless the cost savings are substantial" (p. 30). This finding certainly lends empirical support to the existence of switching costs in the automobile insurance market. The existence of switching costs is further evidenced by responses to the 1973 U.S. survey, in which 44 percent of consumers who responded said that it would take a premium reduction of 20 percent or more to get them to switch to a different (but equally good) insurer.

Several theoretical models of switching costs have been developed. Weizsäcker (1984) accounts for switching costs, which he calls "the costs of substitution," in an equilibrium model with differentiated products. Models by Klemperer (1987), Farrell and Shapiro (1988), and others have also examined how switching costs affect market equilibrium. A common theme of the various models is that switching costs enable suppliers to exert a certain amount of monopoly power over their existing customers.

Switching costs also affect the decision to undertake a price search. A consumer who finds it worthwhile to search for a lower price as long as there are no switching costs may decide not to search if switching costs are sufficiently large, an issue that we examine next.

A Simple Model with Search Costs and Switching Costs

If consumers had full information about the quality of their insurance policies and about prices relative to other policies, they could make informed purchasing decisions based on their personal tastes. However, not only are insurance quality characteristics unobservable prior to purchase, they are likely to be learned only as one "experiences" the insurance product. Such goods are referred to as "experience goods" by Shapiro (1983); and, given the nature of

⁴ Such loyalty might also extend across generations. Dahlby and West (1986), for example, find some empirical support for their conjecture that most young drivers first adopt their parents' automobile insurers, rather than finding their own.

the insurance product, one is not likely to ascertain enough first-hand information on quality until a claim has been filed.⁵

Our model is similar in spirit to Hey and McKenna's (1981) in that the search decision is regarded as a two-stage process. Consumers expect a certain quality to be associated with a certain price of insurance. The first stage involves finding an acceptable price. However, given the experience-good nature of insurance, consumers do not ascertain the quality level until sometime after the insurance is purchased. The second stage involves setting a reservation quality, such that a new insurer is sought if the realized quality falls below this reservation level. Our model differs from Hey and McKenna's in that we allow the consumer to "carry forward" information from previous searches—and, thus, a new insurer might be chosen without a new search. We also do not focus on the mechanics of the optimal searching rule, which is Hey and McKenna's main concern. We look at only the simple case where search involves a fixed cost and where a choice is made from available alternatives after having made this fixed-cost search. Our model also differs in that we include switching costs in our specification.

Consider a risk-averse consumer who buys one insurance contract per period. We assume that the available alternatives always include at least one contract that yields a gain in expected utility, so that the consumer always freely chooses to buy a contract. The consumer is assumed to have made a previous search (perhaps over only one insurer) and to have chosen a contract with price p_1 from insurer 1. The consumer expects a quality level $\bar{q}(p)$, associated with a given price p . We measure both p and q in utility, and assume the consumer's total utility is

$$U(q, p) = x + q - p. \quad (1)$$

Here, x represents utility without insurance. Obviously, q and p depend on x , but, since x is fixed in our model, we suppress this dependency. The linearity of U in q and p greatly simplifies our modeling.

Let $\bar{q}_1 = \bar{q}(p_1)$ denote the quality expected for the current insurance contract. Let p_2 denote the next best price available from the original search, from insurer 2. That is, $\bar{q}_2 - p_2$ is the highest available alternative after $\bar{q}_1 - p_1$. Note that p_2 can be generally greater than, less than, or equal to p_1 . Also, if no second alternative exists, assume that $\bar{q}_2 = p_2$ (i.e., no insurance is the next best alternative without additional search).

We assume the existence of a switching cost of s , measured in utility, for switching to any new insurer. Thus, based only on opportunities available in

⁵Of course, information about a neighbor's success or failure with one's insurer may be available. Also, consumers may be annoyed by nonclaims service characteristics, such as billing procedures. For example, in the United States, an insurer's rating policy on traffic violations might be learned following receipt of a traffic citation, even though there are no claims. However, this is not true in Germany, where only one's accident record and vehicle horsepower determine bonus/malus rating.

the original search, the consumer would switch if the realized quality on the original contract, q_1 , is such that

$$q_1 - p_1 < \bar{q}_2 - p_2 - s. \quad (2)$$

The consumer can search for a fixed cost c (in utility). Such a search yields a best opportunity of $\bar{q}_n - p_n$, which is random ex ante. The consumer would not search if

$$E[\bar{q}_n - p_n] - c \leq \bar{q}_2 - p_2, \quad (3)$$

where E denotes expectation of the best opportunity, taken over a price search. The consumer might or might not search if condition (3) does not hold. In particular, define $M = \max \{\bar{q}_2 - p_2, E[\bar{q}_n - p_n] - c\}$, and define the reservation quality q_0 such that $M - s = q_0 - p_1$. Thus, if $q_1 \geq q_0$, the consumer remains with insurer 1, and no further action is taken. If $q_1 < q_0$, the consumer switches to insurer 2 if inequality (3) holds. If condition (3) does not hold, the consumer enters a search which might or might not yield a suitable alternative.

If inequality (2) holds, the consumer prefers insurer 2 to his or her current insurer 1. If, at the same time, inequality (3) does not hold, the consumer searches to find an insurer better than insurer 2. In this case, even with an unsuccessful search, the consumer will switch insurers (to insurer 2). On the other hand, if both inequalities (2) and (3) fail to hold but $q_1 < q_0$, the consumer will search but will remain with insurer 1 if the search proves unsuccessful.

Note that the switching cost s has a direct effect, lowering the reservation quality, q_0 . The cost of search, on the other hand, might or might not lower the reservation quality q_0 , depending on the currently available alternative, insurer 2.

Information on Quality Differences

In this section, we examine some German survey data. Consumer perceptions about product quality as well as their knowledge of relative prices in the insurance market are examined. We also examine certain information about the effectiveness of claims handling for those consumers who filed claims.

Survey Description

Our data come from a 1983 consumer survey of 2,004 individuals in West Germany. The survey was administered by the Gesellschaft für angewandte Sozialpsychologie mbH (Society for Applied Psychology, Ltd.) on behalf of the International Institute of Management in West Berlin. Professional interviewers visited consumers and recorded their responses to a lengthy set of questions concerning their automobile insurance and life insurance policies. We concern ourselves here with only the automobile insurance section of the survey.⁶

⁶ A copy of the survey questions (in German) is available from the authors. A brief description

In Germany, the insurance market is directly regulated and is exempt from federal antitrust statutes, similar to the current situation in the United States. Insurance prices are relatively high. For instance, the total premium for automobile liability insurance in 1987 was about 36.2 billion deutsche marks, or roughly U.S. \$21 billion at current rates of exchange. This compares to \$49.2 billion in the U.S. market for the same year, even though the U.S. population was about four times as large.

The insurance coverage for German drivers is similar to coverage in the United States. Drivers can obtain liability coverage (*haftpflicht*), collision coverage (*vollkasko*), comprehensive coverage (*teilkasko*), and medical payments coverage (*unfall*). There is a limited no-fault liability for the owner of an automobile causing damages of DM 500,000 per person per accident, DM 750,000 for all injured persons per accident, and DM 100,000 for property damage per accident. At-fault drivers have so-called unlimited liability, which under the German system is actually a liability limited to DM 7.5 million.

German drivers typically purchase auto liability insurance for the DM 7.5 million limit, although the minimum legal liability insurance requirements are DM 1 million per person per accident, DM 1.5 million for all injured persons per accident, DM 40,000 for property damage per accident, and DM 40,000 for other wealth losses. Note that these are German federal requirements, as opposed to individual state requirements in the United States. Drivers also have a choice of deductible levels for their physical damage coverages. German insurance is on a strict bonus/malus rating system, and, hence, all drivers are insurable by all insurers, except several fraternal insurers that have a limited clientele. Policies cannot be canceled if premiums are paid.

Reasons for Choosing an Insurer

In the 1973 U.S. survey reported by Cummins et al. (1974), 40 percent of consumers indicated that the particular company was the single most important factor in choosing an insurance policy. This was followed by 29 percent who said the particular insurance agent was the primary factor and by 27 percent who said that price was of primary importance.

Some data from our German survey appear in Table 1. The table allows for more than one ground for choosing a particular insurer and has a finer partitioning of reasons than the Cummins et al. survey. In Table 1, we also separate the responses of those individuals who have always remained with the same insurer (nonswitchers) from those who have switched companies at some point (switchers). The relative ranking of reasons by nonswitchers and switchers is nearly the same, with a Spearman's rank-order correlation coefficient of 0.916. It is, however, important to note the difference between

of most of the questions (in English) appears in the Appendix. A total of 1,545 consumers in the survey had some form of automobile insurance. The International Institute of Management is a research unit at Berlin's Wissenschaftszentrum (Science Centre). The unit was renamed in 1987 the Research Unit on Market Processes and Corporate Development.

the two groups in claiming that a favorable premium was a key consideration (31.4 percent versus 45.3 percent).

Table 1
Reasons for Choosing One's Current Auto Insurer

<i>Reason</i>	<i>All Insureds</i> %	<i>Nonswitchers</i> %	<i>Switchers</i> %
Good Initial Counseling from Insurer	22.0	23.2	19.6
Favorable Premium	35.4	31.4	45.2
Recommended by Friends/Relatives	30.1	31.6	27.0
Recommended by Insurance Agent	13.3	15.1	9.5
Arranged Through Automobile Salesperson	5.3	4.2	8.0
Transferred from Previous Auto Owner ^a	4.5	4.8	3.8
Good Claims Service	6.7	7.5	5.2
Already Do Other Insurance Business with Company	14.1	14.9	12.5
Receive Dividends on Premiums	0.3	0.2	0.7
Other Reasons	9.3	9.0	10.3
N	1996	1392	601

Note: More than one reason per insured was possible.

^a Such transfer is allowable in Germany, subject to insurer approval.

Claims Performance

To ascertain "objective" quality differences among insurers, the German survey data are used to examine what we consider to be two reasonably objective measures of claims-service quality: whether a claim is fully paid and whether such payments are made within a reasonable length of time. Tables 2 and 3 provide this information. These tables consider *kaskoversicherung*, which is similar to U.S. insurance for physical damage to your auto and, as in the United States, is not mandatory. Over 70 percent of those surveyed had purchased physical damage insurance and nearly one-third of those who had such protection had filed a claim at some time.

The data presented in Tables 2 and 3 provide information about the consumer's last accident. Since we also had information on which insurer paid the claim, we split our responses from switchers into those responding in reference to their current insurers and those responding in reference to their previous insurers. Not surprisingly, current insurers provided uniformly better service. For example, calculating cumulatives in the tables, it follows from Table 2 that 14.3 percent of switchers who filed a claim with their previous insurer received an indemnity of less than 75 percent of the total insured damages (exclusive of applicable deductibles), whereas only 5.4 percent of switchers who filed with their current insurer received less than 75 percent of the damages. The corresponding percentage for nonswitchers falls between these two extremes at 7.6 percent.

Similarly, we can use the data shown in Table 3 to examine claims that took three weeks or longer to pay. For switchers, this was 52.5 percent of claims

Table 2
Amount of Claim Paid by Insurer for Auto Physical Damage

Percent of Claim Paid	All Insureds %	Nonswitchers %	Switchers	
			Current Insurer %	Previous Insurer %
Under 20%	0.8	0.0	1.8	1.6
20-50%	2.8	3.1	0.9	4.8
51-75%	4.6	4.5	2.7	7.9
76-90%	5.8	5.4	8.2	3.2
Over 90%	86.1	87.0	86.4	82.5
Mean (in % Paid)	94.5	94.9	95.1	92.1
N	396	223	110	63

Note: Claims are based on payments made for *kaskoversicherung*, which is roughly equivalent to the physical damage to your auto of U.S. policies.

Table 3
Time from Filing a Claim to Receipt of Payment

Time	All Insureds %	Nonswitchers %	Switchers	
			Current Insurer %	Previous Insurer %
1 Week or Less	21.5	18.6	26.1	23.7
1-2 Weeks	23.9	23.9	30.7	13.6
2-3 Weeks	16.1	19.2	13.6	10.2
3-4 Weeks	20.6	22.9	19.3	15.3
4-8 Weeks	11.1	10.1	8.0	18.6
More than 8 Weeks	6.9	5.3	2.3	18.6
Mean (in Weeks)	3.8	3.6	2.3	6.2
N	335	188	88	59

Note: Claims are for *kaskoversicherung* (insurance for physical damage of your car).

filed with previous insurers but only 29.6 percent of those claims filed with the current insurer. Once again, for nonswitchers, the rate is somewhere in between, at 38.3 percent. Clearly, for switchers, claims performance is better with the current insurers.

Satisfaction with Insurer Services

To ascertain a more subjective measure of quality, consumers were asked to rate their satisfaction with their insurer in obtaining their insurance policies, and those with claims experiences were asked to rate their satisfaction with their insurers' claims handling services. For insureds who had switched insurers at some point in the past, a rating was obtained for both their current and previous insurers. These results are reported in Table 4. Not surprisingly, we see very real differences in the personal satisfaction ratings of current and previous insurers. Looking once again at cumulatives, it is clear that satisfaction levels are generally higher with current insurers than with previous insurers. Thus, for example, 1.2 percent of consumers were generally

unsatisfied with their current insurers' nonclaims services versus 24.7 percent being unsatisfied with their previous insurers' nonclaims services. For claims service, the differential was even greater, 4.3 percent versus 36.5 percent.

Table 4
Satisfaction with Insurer Service

	Satisfaction with Obtaining Coverage		Satisfaction with Claims Service	
	<i>Current Insurer %</i>	<i>Previous Insurer %</i>	<i>Current Insurer %</i>	<i>Previous Insurer %</i>
Completely Satisfied	89.4	50.9	85.2	46.0
Mostly Satisfied	9.4	24.4	10.5	17.5
Mostly Unsatisfied	0.9	14.3	2.5	13.3
Completely Unsatisfied	0.3	10.4	1.8	23.2

From this survey information, we see that consumers perceive differences in the quality of service, both in terms of the objective measures in Tables 2 and 3 and in terms of the subjective measures in Table 4. However, the perception of differences is more pronounced among switchers, who obviously have points of comparison for their current policies. We now turn our attention to perceptions about price.

Information on Price Differences

As mentioned above, over 67 percent of those responding to our survey claimed that considerable price differences exist between automobile insurers. A breakdown of the responses for switchers and nonswitchers is found in Table 5. Almost 79 percent of the switchers believe there are price differences as compared with 62 percent of those who have never switched. Of course, given differences in quality and switching costs, it does not necessarily follow that a lower price leads to a switch. Similarly, some switching occurs even by consumers who do not perceive price differences. These consumers might either learn ("experience") that their policy's quality is lower than expected, or they find a policy with even better quality characteristics for a similar price.⁷

To see how well informed German consumers were about prices in the German automobile insurance market, they were asked to rank their current insurers' prices relative to the rest of the market. This was accomplished by forming five price groups ranging from most expensive to least expensive and asking consumers to which group their current insurers belonged. Because we knew the identity of the consumers' insurers, we could also obtain the actual price ranking of their insurers (at least for those consumers who knew their

⁷ Of course, personal reasons such as getting married or having one's brother enter the insurance business might also trigger a switch.

Table 5
Information about Price Differences

	Switchers	Nonswitchers	N
Price Differences Exist	78.8%	62.0%	1343 (67.2%)
Price Differences Do Not Exist or "Don't Know"	21.2%	38.0%	657 (32.9%)
N	604 (100%)	1396 (100%)	2000

Note: Numbers expressed in percent are relative to column totals.
Nonswitchers also includes those without any insurance.

Table 6
Subjective and Objective Ranking of Insurer Prices

		Subjective Price Ranking					Total %
		Most Expensive 1 %	2 %	3 %	4 %	Least Expensive 5 %	
Actual Price Ranking	Most Expensive	1	0.6	1.8	5.1	2.9	12.0
		2	0.5	2.4	5.9	1.4	11.0
		3	5.1	7.2	13.3	3.2	30.3
		4	0.1	0.6	3.9	4.5	11.3
Least Expensive		5	0.6	0.7	6.2	10.1	17.9
Total			6.8	12.7	34.3	22.1	24.2
							100.0

Note: Numbers in each cell represent the percent of the population, $n = 851$. Totals may differ from column and row additions due to rounding.

present insurers).⁸ A total of 851 consumers provided both a name and a subjective price ranking of their present insurer. These results are presented in Table 6.

Each cell in Table 6 represents a percent of the population. Thus, for example, 0.6 percent of the population claimed their insurers were in the most expensive category and actually were. Actually, 12 percent of the population was in the most expensive category, although only 5 percent of these consumers (0.6/12.0) were aware of it. Interestingly, the proportion of consumers in the most expensive group who thought they were in the least expensive group was higher than the proportion who correctly perceived their company's price ranking.

We can also observe the true distribution of consumers among insurers by looking at the right-hand column in Table 6. Consumer distribution is skewed toward the lowest-priced group of insurers, with 35.5 percent actually owning

⁸ Consumers were questioned, in particular, about their automobile liability coverage (*haftpflicht-versicherung*), which is mandatory in Germany. The tariff structure is fixed by law, so that each consumer classification pays a fixed percentage of a base rate. Insurance prices differ, then, via different base rates, which we compared to obtain the actual price ranking of the insurers.

policies in the lowest-priced group. On the other hand, only about half of these consumers (17.9/35.5) thought that they were in the lowest price category.

To see whether consumers have generally biased views on prices, we constructed a few simple measures.⁹ The first considers the average population misestimate,

$$B \equiv \sum_{S=1}^5 \sum_{A=1}^5 p_{SA}(S-A),$$

where p_{SA} is the population proportion with subjectively-ranked category S and actual price category A . For the population examined in Table 6, we obtain an average bias of $B = -0.034$, indicating that a random consumer would choose a category 0.034 too low (i.e., too expensive). This is further supported by the proportion of estimates that are too expensive (35 percent) versus too inexpensive (26.5 percent).

Although the evidence indicates a bias toward thinking one's insurer is relatively more expensive, most people are fairly accurate in estimating their actual price category. Indeed, although only 38.5 percent of the population referred to in Table 6 correctly identified their price category, 73.3 percent were correct to within one price category. And those who misestimated their price category by two or more quintiles were about evenly split between those responding "too expensive" (13.3 percent) and those responding "too inexpensive" (13.4 percent).

Table 7 presents the information from Table 6 separately for the populations of switchers and nonswitchers. Using a chi-square test, the differences between switchers and nonswitchers in Table 7 is significant at the 0.10 percent level. Calculating the bias measures in Table 7, we obtain $B = 0.004$ for switchers and $B = -0.033$ for nonswitchers. For switchers, there does not seem to be much bias at all. Indeed, looking at the percentage of switchers subjectively rating "too expensive" (32.9 percent) versus "too inexpensive" (24.8 percent), a bias toward rating "too expensive" appears. However, restricting ourselves to misestimations by two or more quintiles, we obtain a slight bias toward rating "too inexpensive" (13.4 percent) versus "too expensive" (11.1 percent). For nonswitchers, the bias is similar to that for the overall sample population: a bias toward "too expensive" estimates of one's own insurer's price category, but the bias mostly disappears when restricted to misestimations by two or more price quintiles. Overall, there does not seem to be any strong systematic bias in consumer perceptions of relative prices.

Using the data from Tables 6 and 7, as well as answers from 31 other questions, we constructed an information index for each consumer. For example, consumers who said they were aware that some insurers return part of the premium in the form of dividends were given one point, others received zero. A more complete description of the information index appears in the

⁹ We thank Bev Dahlby for suggesting this procedure.

Table 7 *for 1988*
**Subjective and Objective Ranking of Insurer Prices
 by Switchers and Nonswitchers**

		Subjective Price Ranking					Total %	
		<i>Most Expensive</i>				<i>Least Expensive</i>		
		1 %	2 %	3 %	4 %	5 %		
<i>Actual Price Ranking</i>								
Most Expensive	1	1.0	1.0	3.5	3.5	2.2	11.2	
		0.4	2.2	6.0	2.6	1.3	12.5	
	2	0.3	2.2	6.0	1.3	1.6	11.4	
		0.6	2.4	5.8	1.5	0.6	10.9	
	3	2.2	4.4	13.0	2.2	1.3	23.1	
		6.7	8.8	13.3	3.7	1.7	34.2	
	4	0.3	0.6	4.8	5.4	2.2	13.3	
		0.0	0.6	3.4	3.9	2.2	10.1	
	Least Expensive	5	0.3	0.3	7.9	11.7	20.6	40.8
			0.7	0.9	5.2	9.2	16.3	32.3
Total		4.1	8.5	35.2	24.1	27.9	100.0	
		8.4	14.9	33.7	20.9	22.1	100.0	

Note: The upper number in each cell represents the percent of switchers ($n = 315$), and the lower cell represents the percent of nonswitchers ($n = 535$). Totals may differ from column and row additions due to rounding. χ^2 statistic with 16 d.f. = 25.14 (significant at 0.10 level).

Appendix. A maximum score of 47 points was possible. The calculated indices ranged from a low of 22 to the maximum 47, with a mean score of 37.3. Some 55 percent of the population scored higher than the mean, while 45 percent scored below the mean. We classified these two groups as informed and uninformed, respectively—although we admit that this classification is rather primitive.

Analysis of the Decision to Switch

We ran a probit analysis (cf. Amemiya, 1981) to examine how several price and quality variables affect the probability of a consumer's changing insurers. Our population was limited, since many consumers had no accident experience while others had only liability insurance and not insurance for physical damage. We were also limited by incomplete information about former insurers and so on. We used the information index (described in the Appendix) to divide the population into informed versus uninformed individuals. Our feeling is that this split classification is highly correlated with whether consumers have searched for price information.

We employ the following variables:

Premium. The insurance premium is calculated as an arithmetic average of ten different auto insurance classifications for each insurer. The data are taken from the published prices of each consumer's listed insurer; that is, we use the actual price level of each consumer's insurer. The premium levels are gross premiums (in deutsche marks) and they do not take into account any return of

the premiums in the form of policyholder dividends. For drivers who had switched insurers, we use the premium level of their former insurer. We expect this premium to be positively related to switching, especially for informed consumers.

Dividend. The net price of an insurance contract is affected by the return of premium contributions in the form of policyholder dividends. This variable denotes the average policyholder dividend for the individual consumer's insurer. For drivers who had switched insurers, we use the dividend level of their former insurer. We expect a negative relationship between this variable and switching but expect only the most informed individuals to know much about dividends.

Percent paid. Consumers were asked to state the percentage of the claims they have submitted to their insurer, not including any deductibles, that was either not paid, or paid only after additional efforts on the part of the consumer. We then subtracted these amounts from 100 percent to yield *percent paid*. We expect this to be one measure of quality and thus expect fewer switches from individuals with a high *percent paid*.

Claims delay. With regard to the claims payment mentioned above, consumers were asked how long (in weeks) they had to wait between filing a claim and receiving payment from the insurer. As a negative indicator of quality, this variable and the probability of switching should be positively related.

Marketing. This is a dummy variable which is set equal to one if the consumer's insurer (previous insurer if they have switched) uses agents who visit prospective clients in their home or office. Such service (known as *aussendienst*) is common in Germany for automobile insurance, although it is much less common in the United States. Our reasons for including this variable are given after first presenting our results.

Nonclaims satisfaction. This variable is a measure of consumer satisfaction with those aspects of the insurer's service other than claims service. Consumers had four possible responses (see Table 4). These responses were transformed into numerical values from 1 (completely satisfied) through 4 (completely unsatisfied). Thus, a higher value represents a less satisfied customer. For consumers who had switched insurers, we asked them also to rate their former insurer and we used the former insurer rating in our analysis. Obviously, a high value of this variable should increase the likelihood of switching.

Claims satisfaction. This variable is identical to the previous one except that the satisfaction rating is based solely upon the insurer's claims services (see Table 4).

Our main results are summarized in the first three columns of Table 8. The population for this set of results is limited to those drivers who had filed an accident claim. Overall, both the *premium* and the *policyholder dividend* coefficients were significant and had the expected sign, although the magnitude of the dividend effect was relatively small. This was due mostly to the informed individuals in the group, as we see that both variables were not significant for the uninformed group. This would be expected if uninformed

individuals are indeed individuals who have not invested in search costs. Of course, even if all informed individuals had searched, not all of them would have alternatives with a better combination of price and quality, or at least not sufficiently better to warrant incurring any appropriate switching costs.

Table 8 *for Entry*
Probability of Changing Insurers

	I			II		
	All	Informed	Uninformed	All	Informed	Uninformed
Constant	-15.90** (2.51)	-17.91*** (1.86)	-14.51 (1.25)	10.07** (2.45)	-14.68** (2.53)	-2.30 (0.29)
Premium	0.038** (2.30)	0.057** (2.03)	0.024 (0.83)	0.026** (2.38)	0.047** (2.71)	0.006 (0.26)
Dividend	-0.014*** (1.65)	-0.030** (2.03)	0.003 (0.16)	-0.010*** (1.71)	-0.023** (2.19)	0.003 (0.02)
Percent Paid	-0.004 (0.01)	-0.002 (0.13)	-0.017 (1.31)	-0.005 (0.98)	-0.008 (1.10)	-0.003 (0.31)
Claims Delay	-0.007 (0.32)	0.007 (0.25)	-0.044 (0.42)	0.013 (0.62)	0.023 (0.80)	-0.012 (0.26)
Marketing (dummy)	0.382 (0.80)	0.428 (0.69)	-0.758 (0.75)	0.566 (1.63)	0.535 (1.20)	-0.533 (0.74)
Nonclaims Satisfaction	0.678* (3.73)	0.422** (2.00)	1.17** (2.21)			
Claims Satisfaction	0.394* (3.31)	0.430* (2.60)	0.445** (2.18)			
Likelihood Ratio	67.60*	34.83*	22.63*	25.23*	21.27*	0.758
N	235	123	70	333	173	95

Note: Probit analysis, absolute values of ratios of coefficient estimates to estimated standard errors are given in parentheses.

* significant at 0.01 ** significant at 0.05 *** significant at 0.10

Of the informed group, nearly half (49.6 percent) had switched to new insurers versus only 37.1 percent of the uninformed group. This lends support to our contention that the informed classification is indicative of searching. Of course, with the experience-good nature of the insurance product, the consumer might switch without additional search if the next best alternative from a previous search (insurer 2 in the notation above) is sufficiently good. In a more realistic setting, policies are canceled, consumers change addresses and autos, and policies are offered without solicitation to consumers (many of whom might not have searched) via employers, mail offerings, friends, and so on. All of these factors add noise to our model.

We added the *marketing* variable because we observed in the survey data that 91.9 percent of all consumers had an insurer with agents who visit homes and offices, either before they changed insurers or as their current insurer if they had never switched insurers. This drops to 59.5 percent for the current

insurers of those who had switched. However, this variable proved to be insignificant in our analysis.¹⁰

We were somewhat surprised to see that *percent paid* and *claims delay*, which we thought would be good measures of objective insurer quality, also were not significant, even for the informed group. On the other hand, both of our *satisfaction* variables were highly significant. We took this to imply that a subjective rating of product characteristics was more important than some easily quantifiable, linear measure of quality.

Since the subjective *satisfaction* variables might be picking up these and other objective quality measures, we ran the analysis a second time, omitting the two *satisfaction* variables. The results, which are shown in the last three columns of Table 8, were that the objective quality measures, *percent paid* and *claims delay*, both remained insignificant. The results for the uninformed consumers show that only the two subjective quality variables (i.e., *satisfaction*) were important. In our second set of probit results, none of the variables were significant in explaining the decision to switch for the uninformed group of consumers. Indeed, the low likelihood ratio for this particular analysis further supports this contention.

The data in Table 8 suffer from the fact that only consumers with claims experience could be included in the analysis. However, those individuals having no claims might behave differently than those with claims. This is one important aspect of the experience-good nature of auto insurance. In order to see how nonclaimants affect the analysis, we also ran a probit regression for the whole population of insureds. Also, since part of our information index is based on information acquirable through claims experience, we calculated a new price information index for each consumer. This index measures only how well consumers know the price category of their insurers, as shown in Table 6. The index itself is described in the Appendix. Once again, we labeled consumers whose price information index level exceeded the mean "informed."

Our results are given in Table 9. Once again we provide results for all insureds, as well as separate results for price informed and price uninformed individuals. *Premium* is once again negative and significant both overall and for the informed group. It turns out to also be significant for the price uninformed group. Since Table 9 includes individuals with no claims experience, we take this to mean that price is a relatively more important consideration for individuals who have switched, even if they do not know the relative price ranking of their current (and, by inference, for those who have switched, also their past) insurer. *Dividend* was significant, although positive both overall and for the price informed group. However, the size of this effect

¹⁰ Some other recent evidence from the United States indicates that direct-response insurers and insurers using either independent or exclusive agents are rated about equally well on service quality. Gallop/Best's Review Survey (1989) shows results from a Gallop Poll in which consumers saw virtually no quality differences. Doeringhaus (1991) finds little or no difference between complaints filed against both types of insurers.

Table 9
Probability of Changing Insurers III

	<i>All</i>	<i>Price Informed</i>	<i>Price Uninformed</i>
Constant	-9.50* (2.69)	-11.24* (2.94)	-9.94* (2.51)
Premium	0.14* (2.85)	0.16* (2.39)	0.15** (2.08)
Dividend	0.003*** (1.49)	0.009* (2.92)	0.001 (0.32)
Marketing (dummy)	0.042 (0.22)	0.215 (0.87)	-0.092 (0.31)
Nonclaims Satisfaction	0.80* (12.67)	0.83* (9.13)	0.74* (8.15)
Likelihood Ratio	229.76*	131.62*	93.57*
N	1204	585	619

Note: Probit analysis, absolute values of ratios of coefficient estimates to estimated standard errors are given in parentheses.

* significant at 0.01 ** significant at 0.05 *** significant at 0.10

Table 10
Premium of the Current Insurer
Compared to that of the Previous Insurer

	Premium of the Previous Insurer					<i>All Categories %</i>
	Most Expensive		Least Expensive			
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	
	%	%	%	%	%	
Switched to More Expensive Insurer	---	16	22	52	56	23
Within Same Price Category	14	10	26	11	44	22
Switched to Cheaper Insurer	86	74	52	37	---	55
	100	100	100	100	100	100

was extremely small. *Marketing* was insignificant once again, and *nonclaims satisfaction* was highly significant, with unsatisfied customers more likely to switch insurers. Of the population shown in Table 9, 42.7 percent of the price informed individuals had switched insurers compared with only 28.3 percent of price uninformed insureds.

Contrary to the previously mentioned results of Berger, Kleindorfer, and Kunreuther (1989), who used Dahlby and West's (1986) data to find a reluctance to switch except when the premium reduction is substantial, our survey data indicate that 45 percent of those who switched insurers changed to insurers in price categories that were at least as expensive as their previous insurers (see Table 10). As might be expected, consumers in the two most expensive price categories are the most likely to switch to lower-priced insurers. However, over half of those who switched from an insurer in the two lowest price categories changed to a more expensive insurer. Indeed, there seems to be some reversion toward the middle price range, since over 50 percent of switchers in each of the three most expensive price categories shifted to insurers with lower prices. Although the evidence shows

a somewhat stronger propensity to shift to a less expensive insurer (55 percent of all switchers), it appears that a lower price is not the only significant reason to switch. Since switchers know the prices of at least two insurers, the indication is that characteristics other than price—i.e., quality characteristics—also play an important role in the purchasing decision.

Factors Affecting the Information Index

Obviously, consumers are not homogeneous, and our classification of consumers as either informed or uninformed reflects socioeconomic factors such as education, sex, and income. If these factors are the primary determinants of the information index level, then our use of informed or uninformed as a proxy for search may be misguided. In order to see just how these socioeconomic factors affect the information index, we ran an ordinary least squares (OLS) regression with the information index as the dependent variable. The results are shown in Table 11. The education dummy variable is assigned a value of 1 if the consumer has passed his or her final high school examination.¹¹ The other variables are self-explanatory.

Table 11
Factors Affecting the Information Index

	<i>All</i>	<i>Switchers</i>	<i>Nonswitchers</i>
Constant	36.20* (41.42)	37.90* (23.74)	36.37* (35.78)
Years with Current Insurer	-0.06** (2.19)	-0.12** (2.00)	-0.04*** (1.44)
Income	0.16** (1.80)	0.30** (1.77)	0.12 (1.10)
Education ^a	1.17** (1.77)	-0.06 (0.05)	1.71** (2.10)
Female ^a	-2.22* (3.22)	-1.98*** (1.41)	-2.25* (2.82)
Self-Employed ^a	-1.56* (2.40)	-1.27 (1.03)	-1.71** (2.23)
Switcher ^a	2.36* (4.92)	---	---
F	10.53	2.01	4.05
R ²	0.05	0.02	0.02
N	1346	401	945

Note: Ordinary least squares analysis, absolute t-values are in parentheses.

^a Dummy variable

* significant at 0.01 ** significant at 0.05 *** significant at 0.10

The OLS results are shown in Table 11. Each variable is significant for the full sample at a 5 percent level or better. The results show that, *ceteris paribus*,

¹¹ In Germany, there are three levels of high school, the highest being a college-track level which includes a thirteenth grade. The *Abitur* is the country-wide final exam given to all graduating college-track high school students.

higher income, education, and being male tend to increase the information index; whereas more years with the current insurer, being self-employed (perhaps due to the higher opportunity costs of time spent searching), and being female tend to decrease the index. We interpret the low R^2 as implying that, although each of these socioeconomic factors is statistically significant, they are not very significant in a practical sense and do not help very much in explaining the overall level of the information index. Except for consumers very near the mean index score, we would not expect these variables to play a critical role in the informed/uninformed classification. We thus feel that becoming informed, the search step in the overall switching process, is captured reasonably well by our information index. Unfortunately, we have no way of discerning the timing of one's becoming informed, so that the individual may have become informed during a search for the original insurer, rather than during a new search. However, the U.S. survey reported by Cummins et al. shows a previous search of only one insurer in 50 percent of the cases.

Table 12
Information Sources and Information Level

	Probit Regression ^a	Percent of N Using Information Source		
		All	Switchers	Nonswitchers
Constant	-0.54 (9.45)			
Test Magazine	1.15 (6.64)	2.4	3.5	1.9
Capital Magazine	1.03 (3.76)	6.3	7.7	5.7
Consult Insurer	0.56 (5.22)	12.2	15.8	10.6
Consult Acquaintance	0.77 (8.79)	9.2	11.6	8.1
Consult Agent	0.57 (4.67)	21.0	20.9	21.0
Advertising	1.02 (7.40)	9.2	11.9	8.0
Member of Automobile Association	0.45 (6.43)	44.2	51.9	41.0
Likelihood Ratio Test	277.44			
N	1464	1464	430	1034

^a The probit analysis measures the likelihood of being "informed" (i.e., an information index above the mean). Absolute t-values are in parentheses. All coefficients are significantly different from zero at the 0.01 level.

If becoming informed is a search step in the switching process, a natural question arises as to how information is usually generated. Consumers in the survey were asked to identify sources of information from a list. Their collective responses are shown in Table 12. The last three columns in this table show the percentage of each respective population (all, switchers, nonswitchers)

who claimed to use a particular information source. The magazine *Test* evaluates and rates many consumer goods and services, and *Capital* is Germany's leading business magazine. Of those consumers whose responses appear in the table, 67 percent of the switchers were informed versus 48.5 percent of the nonswitchers. It is also interesting to note that a higher percentage of switchers than nonswitchers used each of the information sources except one: consult with an agent. Interestingly, about equal numbers of each type (80 percent) do not rely on an agent for information. Since individuals appear to be generally satisfied with their nonclaims services (see Table 4), we take this to imply that consumers probably do not expect unbiased general information from their agents. A probit analysis measuring the likelihood of being informed shows that the use of each source of information increases the likelihood that an individual is informed. Note that each of the variables used is a dummy variable in this regression. Also, the likelihood ratio test indicates that using information sources is highly correlated with being informed.

Concluding Remarks

We have examined the role of information in the consumer's insurance purchasing decision and have shown how price search, product quality, and switching costs affect consumers' decisions. In particular, search activity (becoming informed) was seen to increase both the likelihood of switching and the importance of price variables in the switching decision. We also have good evidence that consumers do not perceive of the insurance product as homogeneous, although only subjective assessments of satisfaction (and not objective measures of claims quality) seemed to play a statistically significant role in the decision to switch insurers.

Our model is limited to the extent that we do not capture any of the dynamics involved in the process. For instance, an individual who has searched and found a lower-priced insurer may decide not to switch, even in cases where the price saving exceeds any switching cost. The reason for this is that the consumer may expect to find an even better contract either through further search, or through dynamic market changes expected in the near future. If switching costs occur with each change of insurers, the consumer may decide to delay switching. Thus, some type of "option value" for delaying a switch would need to be added to the direct costs of switching.

Such dynamic effects, together with the experience-good nature of the insurance product, make it difficult to predict switching with much precision. Added to this are the many random noise factors that can trigger a switch, such as a change in marital status. One nonfactor in the switching decision in Germany is being terminated by one's insurer. While excessive tickets and/or accidents can lead to policy nonrenewals in the U.S. market (which, if excessive, may force a consumer into an assigned risk market), insurers are not allowed this option in Germany.

Despite these limitations, we feel that our analysis leads to a better understanding of the role of information in economic decision making, and we

hope that future data can further the results derived here in explaining how decisions concerning insurance purchases are made.

APPENDIX

Here, we describe the information index, which was used in the text to segment the population into informed and uninformed groups. Over one-third of the index score comes from the price information illustrated in Table 6. We examined the difference in the subjective price ranking, as provided by the consumer, and the objective price ranking of the consumer's actual insurer. We subtracted the square of this difference from 16, to yield a total score between zero (totally uninformed) and 16 (totally informed). Consumers who answered the relative ranking question with "don't know," were assigned a score of zero. This score represents the price information index used in deriving results in Table 9.

For an additional 31 questions, we assigned the consumer a score of one or zero as follows: If the question had a correct answer (e.g., see question 2 below), the consumer received a score of one only if he or she provided the correct answer. For questions where there was not a correct answer (or at least we had no way of knowing what the correct answer was), consumers received a score of one if they provided any answer, and a score of zero if they said "don't know." This included questions such as question 1 below (for which we couldn't check the answer) and question 3 below (which calls for an opinion). The 31 questions are summarized below. A copy of the actual questions is available from the authors (in German).

The total information index, as used to derive Table 8, was obtained by adding all of the points as described above. The maximum score was thus 47 (16 + 31). The mean score of the population was 37.3.

The Questions

1. How long have you been with your current insurer?
2. Is your current insurer a stock company or a mutual company? (L)¹²
3. Why did you choose your current insurer? (L)
4. How satisfied are you with your present insurer's nonclaims service? (L)
5. How satisfied are you with your present insurer's claims service? (L)
6. Have you ever switched insurers? (L)
7. Which company was your previous insurer?
8. When did you first obtain insurance from this insurer?
9. How satisfied were you with your previous insurer's nonclaims service? (L)
10. How satisfied were you with your previous insurer's claims service? (L)
11. Why did you leave this insurance company?
12. Did your current insurer send an agent to your home? (L)

¹² The inclusion of (L) after a question indicates that the consumer was given a list of responses from which to choose.

13. Would you prefer to have an agent visit your home or to visit the insurer's office? (L)
14. Would you switch to an insurer that did not have agents that visit your home if it resulted in a lower premium? (L)
15. How much of a premium reduction would be required for you to switch to a lower-priced insurer?
16. Is there a price difference worth mentioning between premiums of different insurers? (L)
17. From where did you obtain price information about the insurance market? (L)
18. Are you aware that some insurers pay a policyholder dividend? (L)
19. When was your last accident in which another driver was at fault?
20. Which insurance company paid for the damage?
21. How many weeks did it take to get paid?
22. How much of the damage (in deutsche marks) did the insurer pay?
23. How much of the repair cost was not paid by the insurer?
24. How much did the insurer pay for additional expenses such as rental cars?
25. How much of the additional expenses were not paid by the insurer?
26. Do you think the repair bills would have been lower if an insurer wasn't paying for them? (L)
27. If so, how much lower?
28. When was your last accident for which you put in a property damage claim with your own insurer?
29. Which insurer was that?
30. What percent of the claim (exclusive of any deductible amounts) was paid?
31. How many weeks did it take to pay the claim?

References

- Amemiya, T., 1981, Qualitative Response Models: A Survey, *Journal of Economic Literature*, 19: 1483-1536.
- Berger, L. A., 1985, Word of Mouth Reputations in Auto Insurance Markets, Ph.D. dissertation, University of Pennsylvania, Philadelphia.
- Berger, L. A., P. Kleindorfer, and H. Kunreuther, 1989, A Dynamic Model of the Transmission of Price Information in Auto Insurance Markets, *Journal of Risk and Insurance*, 56: 17-33.
- Butters, G. R., 1977, Equilibrium Distributions of Sales and Advertising Prices, *Review of Economic Studies*, 44: 465-491.
- Carlson, J. A. and R. P. McAfee, 1983, Discrete Equilibrium Price Dispersion, *Journal of Political Economy*, 91: 480-493.
- Cummins, J. D., D. M. McGill, H. E. Winklevoss, and H. A. Zeltin, 1974, *Consumer Attitudes Toward Auto and Homeowners Insurance*, Department of Insurance, Wharton School, University of Pennsylvania, Philadelphia.

- Dahlby, B., 1987, A Test of the Sheshinski-Weiss Model of Price Adjustment, Paper presented to the 1987 meeting of the American Risk and Insurance Association, Montreal.
- Dahlby, B. and D. S. West, 1986, Price Dispersion in an Automobile Insurance Market, *Journal of Political Economy*, 94: 418-438.
- D'Arcy, S. P. and N. A. Doherty, 1990, Adverse Selection, Private Information and Lowballing in Insurance Markets, *Journal of Business*, 63: 145-163.
- Doeringhaus, H., 1991, An Analysis of Complaint Data in the Automobile Insurance Industry, *Journal of Risk and Insurance*, 58: 120-127.
- Farrell, J. and C. Shapiro, 1988, Dynamic Competition with Switching Costs, *Rand Journal of Economics*, 19: 123-137.
- Gallop/Best's Review Survey, 1989, Policy Service Earns Applause, *Best's Review: Property/Casualty Edition*, 90 (September): 11.
- Hey, J. D. and C. J. McKenna, 1981, Consumer Search with Uncertain Product Quality, *Journal of Political Economy*, 89: 54-66.
- Hotelling, H., 1929, Stability in Competition, *Economic Journal*, 39: 41-57.
- Joskow, P., 1973, Cartels, Competition and Regulation in the Property-Liability Insurance Industry, *Bell Journal of Economics*, 4: 375-427.
- Jung, A. F., 1978, Automobile Insurance Rates in Chicago, Illinois, *Journal of Risk and Insurance*, 45: 507-515.
- Klemperer, P., 1987, Markets with Consumer Switching Costs, *Quarterly Journal of Economics*, 102: 375-394.
- MacMinn, R. D., 1980, Search and Market Equilibrium, *Journal of Political Economy*, 88: 308-327.
- Schulenburg, J.-M. Gf. v.d., 1987, Marktgeschehen bei unvollständigen Nachfragerinformationen, *Zeitschrift für Betriebswirtschaft*, 57: 699-719.
- Shapiro, C., 1983, Optimal Pricing of Experience Goods, *Bell Journal of Economics*, 14: 497-507.
- Smallwood, D., 1975, Competition, Regulation and Product Quality in the Automobile Insurance Industry, in: A. Phillips, ed., *Promoting Competition in Regulated Markets*, (Washington, D.C.: Brookings Institution), 241-299.
- Stigler, G., 1961, The Economics of Information, *Journal of Political Economy*, 69: 213-225.
- Weizsäcker, C. C. v., 1984, The Costs of Substitution, *Econometrica*, 52: 1085-1116.
- Williamson, O. E., 1979, Transaction-Cost Economics: The Governance of Contractual Relations, *Journal of Law and Economics*, 22: 233-262.

Copyright of Journal of Risk & Insurance is the property of Blackwell Publishing Limited. The copyright in an individual article may be maintained by the author in certain cases. Content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.