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Measure Exposure For Premium Credibility

By PATRICK BUTLER

The automobile insurance industry admits that its credibility is seriously challenged by California's Proposition 103 and by enactment of similarly draconian but ineffective "reforms" in other states.

Like advocates of these reforms, however, the industry misidentifies the source of dissatisfaction as a problem of overall high insurance cost and "unaffordability."

In fact, the average premium paid per car-mile, depending on coverage and territory, ranges from about 2 to 10 cents. These costs are on a par with the car-mile costs, depending on price and fuel efficiency, consumers pay for gasoline.

Although the price of gasoline is an important affordability consideration for lower-income automobile users, there is no consumer revolt against the gasoline industry.

What is the difference?

While consumers cannot control gasoline prices, they can and do con-

trol what they spend on gasoline by the amount of driving they do. In contrast, consumers have no real control over their expenditures for automobile insurance.

They are given to understand that premiums somehow relate to the cost of individual risk, but without a believable translation to cost, premiums are perceived as arbitrary taxes on car ownership.

It would be logically accurate, however, to say that a company's costs depend on how much each car it insures is driven. When a car is not driven, no risk is transferred to the insurance pool. The more a car is driven, the more risk is transferred to the pool, mile by mile.

But this simple truth is not shared with consumers. Insurers occasionally acknowledge the connection between their costs and the amount of driving, but only on an aggregate level.

In response to Proposition 103's mandate for reduced costs, for

example, an official of the National Association of Independent Insurers protested that "We cannot tell motorists to drive less," and went on to suggest that society "may need to build better public transportation systems and create incentives to use them."

This statement is also an admission that class premiums provide no economic incentive for any motorist to drive less. Every car must pay the same premium as all others in its risk class, no matter how much or how little it is subsequently exposed on the road to the chance of accidents (Table 1).

Consumer resentment at having to buy something very expensive that can't be understood has encouraged a search for alternative payment methods that make more sense.

Collecting premiums by taxing gasoline has political appeal, especially in high cost territories, because consumers readily perceive that a car not being driven cannot have an accident.

The number of gallons used by a car would be the measure of the on-the-road risk it has transferred to the general insurance pool. The cents-per-gallon premium would be total insurance cost divided by total number of gallons used by all of the cars insured.

An insurance tax on gasoline has some practical drawbacks, however. Since the tax would approximately double the cost of gasoline, it would have to be implemented nationally. Otherwise, service stations near a

TABLE 1
CONSUMER'S COST WITH ANNUAL PREMIUMS

Miles driven (two odometer readings)	Sum of base annual premiums ¹	Class multi- plier ²	Consumer's Cost		
			Premium	Cents-per mile	
2,500	\$348	x .95	= \$331		13.2
5,000	\$348	x .95	= \$331		6.6
10,000	\$348	x 1.10	= \$383		3.8
15,000	\$348	x 1.10	= \$383		2.6
20,000	\$348	x 1.10	= \$383		1.9

Note: Class premiums & multipliers validated by a company actuary.

¹State Farm Mutual Insurance Company, 1986, for Harrisburg, Penns. (Territory 28), required coverages plus full comprehensive and \$100 deductible collision coverage of a 1985 model, rating group 9 car.

²Adult (driver sex not a factor), pleasure-use, single-car class. Discount (---0.15) applied for "low estimated future mileage" sub-class.

state line would not survive in any state that initiated the tax before adjacent states did.

Furthermore, since the insurance surtax would more than triple the current average gasoline tax of 25 cents per gallon, increased efforts would be needed to prevent fraudulent use of untaxed motor fuels.

There are insurance drawbacks as well. Without additional technology, premium payment at the gasoline pump would preclude risk classification of cars.

There could be no distinction in the cents-per-gallon rate for differences such as car value, amount of coverage, and the "type of miles" supposedly captured by the existing territorial and use classes. All cars would pay the same per-gallon rate.

The car-mile premium is an alternative to the gas-tax premium that is compatible with risk classification. Insurance texts describe the car-mile as an "exposure unit" to be pooled in risk classes.

According to a Chartered Property and Casualty Underwriter textbook, "an exposure unit is a measure of the loss exposure assumed by an insurer. The premium for a policy is calculated by multiplying the rate or rates by the number of exposure units."

The present premium system has no exposure unit to measure the amount of individual risk transferred to the risk pool by driving. Annual premiums simply represent the total cost of a class divided by the number of cars pooled in it.

Premiums therefore mix cost effects from two sources.

One is the average hazard of the driving conditions for the cars in the class, which could be expressed in terms of accidents or insurance cost per million car miles. Since accidents are random, the cost effects of dif-

ferent driving conditions cannot be quantified for individual cars but must be pooled for statistical credibility.

The other source of cost merged in class premiums is the on-the-road exposure of each car, which is individually measurable by the car-mile exposure unit.

Conversion of class premiums to the car-mile exposure unit is straightforward, as can be illustrated where existing premiums use separate expense fees.

The car-mile rate for on-the-road coverage equals the annual premium divided by a one-time assumed 10,000 annual mile average for the class (Table 2). Subsequent cents-per-mile rates would then be determined from class costs divided by total miles driven by the cars in the class.

Since car mileage has always been the basis for money transactions such as warranty determination and resale value, odometer fraud is punished by severe fines and jail under existing federal and state law.

Licensed private garages already test and read odometers during safety inspections done at a nominal fee. The odometer would be read initially for new customers and thereafter for each billing. Competition on service should obviously push development of convenient and efficient arrangements.

Any fears about mileage misrepresentation by customers (or agents) say more about today's "mileage" discount classes based on unverifiable estimates of future mileage, than about a system using verified odometer mileage to calculate premiums.

With the premium tied to exposure, the parties to the insurance contract — insurer and insured — would have an equal stake in an accurate, objective measurement of exposure.

Where agents are concerned,

the commission and fee-for-service systems should be compatible with premiums proportioned to odometer mileage.

At present, an agent's professional credibility is continually undercut by the necessity of trying to justify the calculation of automobile insurance premiums as a logical process related to individual risk.

Offering discretionary discounts to placate customers may be effective in deflecting demands for an explanation, but the practice increases consumer distrust in the validity of premium calculation. However rationally the system may relate to sales and marketing plans, customers correctly suspect that the system is illogical and arbitrary for themselves.

For a transaction to be successful, all parties must be convinced that the deal is on the square. The current system—a single premium for all cars in a class risk pool with no measure of individual exposure—puts the credibility of the entire insurance industry on the line.

When the failure of the Proposition 103 reform becomes undeniable, will the frustrated public vote to do away with insurance risk pools, and use gasoline purchase alone to measure exposure?

Or, will automobile insurers convert their pooling units from cars to car-miles to provide consumers with premiums credibly related to individual exposure to risk?

Setting rates for gasoline or for automobile insurance protection is not a consumer prerogative, but deciding how much of either to buy certainly ought to be. □

Mr. Butler is a sex discrimination issues analyst at the Washington, D.C., headquarters of the National Organization for Women (NOW).

**TABLE 2
CONSUMER'S COST WITH CAR-MILE RATES**

Miles driven (two odometer readings)	Car-mile rate ¹ (Cents)	Annual charge ²	Consumer's Cost	
			Premium	Cents-per mile
2,500	x 3.56	+ \$86	= \$175	7.0
5,000	x 3.56	+ \$86	= \$264	5.3
10,000	x 3.56	+ \$86	= \$442 ³	4.4
15,000	x 3.56	+ \$86	= \$620	4.1
20,000	x 3.56	+ \$86	= \$798	4.0

Note: Class premiums & multipliers validated by an ISO actuary.

¹Insurance Services Office, 1986, Harrisburg, Penns. (Territory 7): sum of base annual premiums for on-the-road coverages (liability + 1st party + UM + collision = \$356) times 1.00 multiplier for the Adult Pleasure-Use class and divided by an assumed 10,000 annual mile average for cars in the class in the Harrisburg territory.

²Sum of expense fees by coverage (\$70) + class multiplier times the comprehensive base rate per year (\$16).

³\$442 is the same premium that is assessed currently for all annual mileages for the Adult Pleasure-Use class.