Microeconomics, Module 14: “Collusion, cartels, and regulation” (Chapter 11)

*Homework*

(The attached PDF file has better formatting.)

The property-casualty insurance industry is highly regulated, has rating bureaus that sometimes set industry prices or loss costs, and is often accused of collusion. This homework assignment applies the topics in this module to the insurance industry.

Whether rating bureaus help or hurt consumers is much debated. We take no position on this debate, and the information here is not sufficient to judge the issue. The homework assignment asks you to explain the economic relations only.

Suppose that all insurers selling workers’ compensation charge premium rates set by an industry owned bureau. This is no longer the case, but it was partly true twenty years ago.

The workers’ compensation insurance marketplace is competitive. Barriers to entry are small, many firms provide insurance coverage, no firm has a large market share, most costs are variables, economies of scale are negligible, the policy language is largely identical (the coverage is mandated by the state), and insureds can easily switch from one insurer to another.

A. If all firms are competent at setting prices and no rating bureau exists, what is the expected profit from selling workers’ compensation coverage? (This is the economic profit, not the accounting profit. The economic profit is the accounting profit minus the return required by shareholders for providing capital.)
B. Suppose that some firms have trouble estimating the present value of future workers’ compensation benefits. In other industries, firms know their costs, but insurers are not always aware of the expected benefits over the lifetime of the policy. Of 100 insurers in the industry, 80 set adequate prices, 10 set inadequate prices, and 10 set redundant prices. What happens to the quantity sold by each insurer if the market is perfectly competitive? (A competitive firm faces a perfectly elastic demand curve. Insurers do not face perfectly elastic demand curves, since most consumers renew their policies, but the demand curves for new business are relatively flat.)
C. In other industries, a firm that under-prices quickly learns that its revenue does not cover its costs, so under-pricing from poor knowledge is quickly corrected. For workers’ compensation, a firm may not be aware of inadequate pricing for many years. In a competitive market, if some firms under-price, what must the other firms do to avoid losing market share? (In the short run, a competitive firm continues to produce as long as the market price exceeds its marginal cost.)
D. To avoid industry-wide rate inadequacy, some firms suggest that a rating bureau set rates to which all insurers adhere (i.e., which all insurers use). If the rating bureau is owned by the insurance industry, has no restraints on its pricing, and all firms use its price, what price might the rating bureau set? (This is the cartel discussed by Landsburg.) What happens to the quantity of insurance coverage provided? What are the net effects on consumers’ surplus, producers’ surplus, and social welfare?
E. Why do cartels rarely work? If a rating bureau set rates that were 10% redundant, and many insurers competed in the industry, what would some insurers do? (Each insurer pursues its own self-interest, which may not be to use the rating bureau’s price.)
F. In certain industries, one can identify retail firms that cheat on a cartel and offer the product for a lower price by examining the prices in retail stores or other public markets. Why is it more difficult to identify insurers that are selling the policy for less than the market price? Is there a retail store or public market for insurance where one can compare prices among different insurers? (How easy is it to compare life insurance rates or auto insurance rates among different insurers?)
G. If private firms cheat on a cartel, what is the one party that can keep all insurers charging the same rates?
H. The insurance rating bureau has two potential problems: (i) the rating bureau might set prices above the competitive level, thereby hurting consumers, and (ii) if the rating bureau sets proper prices, some firms might cheat on the cartel, hurting the industry. The first is the social welfare problem and the second is the cheating problem. To prevent the social welfare problem outlined above, the U.S. Congress permits

rating bureaus only if the states regulate insurance rates. Some states used to require insurers to use the rating bureau rates. To solve the social welfare problem, what is role of the rate regulator? (Does the regulator deal with the price set by the rating bureau or the price charged by private insurers?) To solve the cheating problem, what is the role of the rate regulator? (Does the regulator deal with the price set by the rating bureau or the price charged by private insurers?)

*Question:* In practice, what were the rating bureaus like (until about 20 years ago)?

*Answer:* Actuaries dispute whether rating bureaus helped or hurt consumers. You can post your view on this public policy issue on the discussion board, but this is not part of the homework assignment.

*Question:* What is a redundant rate?

*Answer:* A redundant rate is a rate higher than the competitive price; an inadequate rate is a rate below the competitive price. The competitive price gives zero economic profit and maximizes social welfare.

*Question:* What is the function of the rate regulator?

*Answer:* Property-casualty insurers may set rates in unison (with a rating bureau). This is cartel pricing, which is not permitted for most industries. Insurers can do this only if the rates are regulated by the states.

*Question:* Do we need knowledge of rating bureaus to complete this homework assignment?

*Answer:* This homework assignment applies the theory of cartel pricing and cheating to the insurance industry. We could have used another industry, but few candidates know much about the economics of any industry besides insurance. Life insurance has no cartels, so we used workers' compensation, where several strong rating bureaus operate.

The homework assignment leads you through the application of cartel theory to insurance. There is no correct solution; actuaries disagree about the effects of rating bureaus on rates, social welfare, competitive, and other economic matters. The homework should show that you have read the chapter and understand the basic concepts.