Microeconomics, Module 5: “The Behavior of Firms”

Application to Insurance

(The attached PDF file has better formatting.)

Consider a insurer selling auto insurance in a state where rate relativities are prohibited, so all consumers pay the same premium rates. The premium differs by the limits of liability and the amount of insurance, though not by driver characteristics. Define marginal revenue as the premium from the last policy written and marginal cost as the costs of the last policy written (including loss costs). Suppose the insurer first sells to married adult drivers with children who want high limits of liability and both liability and physical damage coverages, and it sells last to young unmarried male drivers who buy only basic limits for liability coverage and no physical damage coverages.

A. Does marginal revenue increase or decrease as the insurer’s volume expands?
B. Does marginal cost increase or decrease as the insurer’s volume expands?
C. At what point would the insurer stop selling auto insurance?
D. At the point at which the insurer stops selling auto insurance, it is making a profit, making a loss, or breaking even?

Part A: As business volume increases, marginal revenue decreases. The first consumers wish to buy high limits and more coverages; the later consumers wish to buy lower limits and fewer coverages.

Part B: As business volume increases, marginal cost increases. The first consumers are married adult drivers with children, who have few accidents; the later consumers are young unmarried male drivers, who have more accidents.

Part C: The insurer sells policies as long as marginal revenue exceeds marginal cost.

Part D: We can’t say if the insurer is making a profit or a loss.

If the fixed costs are high and the marginal costs are close to marginal revenue, the insurer may be losing money; if fixed costs are low and marginal costs are much lower than marginal revenue for the majority of drivers, the insurer may be making money. In a perfectly competitive market, insurer will break even over the long-term. In the short run, insurers may be profitable or unprofitable.