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# Adverse Selection: The Rothschild-Stiglitz Model

## Comprehension Questions

Review the basic assumptions of the Rothschild-Stiglitz model before answering these questions. Many exercises will refer to these basic assumptions.

1. In a Rothschild-Stiglitz model with asymmetric information and heterogeneous risk types, the frail population would be worse off if insurance companies were suddenly able to distinguish between the two types of customers, because they could no longer pretend to be healthy.

   **FALSE**. Frail consumers already have full and actuarially-fair insurance contracts. If insurance companies could suddenly distinguish between frail and robust customers, frail customers would remain insured and robust customers could become fully insured.

2. The Rothschild-Stiglitz model predicts that people who own life insurance should have fewer unobserved traits (that is, unobserved by insurance companies) that lead to a higher risk of death when compared against people with the same level of income but who do not own life insurance.

   **FALSE**. We would expect people with life insurance to have more unobserved risk factors – presumably that is why they want life insurance in the first place.

3. In a Rothschild-Stiglitz model separating equilibrium, there is a volume discount for insurance purchases – those who choose to buy more insurance pay

a lower per-unit price for it.

**FALSE**. There is actually a bulk markup for large amounts of insurance. Intuitively, this reflects the fact that insurers are suspicious of people who want a lot of insurance. The companies assume they are frail, and charge them a higher per-unit premium.

4. In a Rothschild-Stiglitz model separating equilibrium, low-risk consumers of insurance are quantity constrained. They cannot buy as much insurance as they want because the insurance company is worried it will lose money on them.

**TRUE**. Robust individuals would like to have full, fair insurance but the separating equilibrium offers them two less attractive choices: full insurance that is actuarially unfair or fair insurance that is partial.

5. Under certain circumstances in the R-S model, a separating equilibrium cannot exist.

**TRUE**. If there are enough robust people in the population, a pooled contract can be offered that will break the separating equilibrium.

6. In the Rothschild-Stiglitz model, an individual who is offered a choice between full insurance and no insurance will always choose full insurance if they are risk averse.

**FALSE**. An individual will choose to be uninsured if the full insurance contract lies below their indifference curve going through their endowment point.

7. A pooling equilibrium can exist if the contract being offered lies on the same indifference curve as the endowment point of the robust population.

**FALSE**. There exists a contract that can be offered that will attract the robust population away from the "pooled" equilibrium. In essence, a pooling equilibrium will never exist unless mandated.

8. Under the typical assumptions of the RS model, there is nothing that an insurance company can to do to distinguish between robust and frail customers.

**FALSE**. If firms offer generous insurance that lies below a robust individual's indifference curve through their endowment point, firms can indirectly distinguish between robust and frail customers because robust customers will not choose the generous insurance.

9. Private markets are powerless to combat adverse selection, so the only solution is a government-mandated insurance contract.

   **FALSE**. If health differences emerge only later in life, there are ways to design private insurance contracts that would eliminate adverse selection.

10. The main advantage of a Cochrane insurance contract over a guaranteed renewable contract is that it does not rely on a legally unenforceable binding lifetime commitment.

    **FALSE**. The main advantage of a Cochrane contract is that it is renegotiated each year, which allows competition between multiple insurance companies. Neither type of contract requires a binding lifetime commitment.