

Behavioral Economics

Exercise 5 Behavioral Game Theory

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- Question 1 (a) Every type of seller chooses to disclose her own type $i = L, M, H$, and $p = v_i$.
If the seller disclosed her type, the buyer purchases iff $v_i \geq p$, otherwise purchase iff $\epsilon \geq p$.

When the type is concealed, rational buyer evaluates lemon by its expected value :

$$E(v) = v_L \cdot q_L + v_M \cdot q_M + (1 - q_L - q_M) > v_H = 1$$

and buy only if $E(v) \geq p$.

Then, type-H seller raise her profit by disclosing and set $p = 1$, and the buyer revises her belief

$$E(v) = v_L \cdot q_L + v_M \cdot q_M > v_M$$

Again, there is an incentive for type-M seller to disclose and set $p = v_M$, and finally, the buyer predicts the expected value $E(v) = v_L = \epsilon$, which makes type-L seller to disclose and set $p = \epsilon$.

- (b) When the buyer is fully cursed, she predicts the predicts the expected value if the private information was hidden is :

$$E(v) = v_L \cdot q_L + v_M \cdot q_M + (1 - q_L - q_M) \equiv E$$

and purchase iff $E(v) > p$.

Note that when the type was disclosed, the buyer purchase iff $v_i > p$.

In Stage 1, then,

- Type-H seller : $v_H = 1 > E$
She discloses her type and set $p = 1$.
- Type-L seller : $v_L = \epsilon < E$
She conceal her private information and set $p = E$.
- Type-M seller : $v_M \in (\epsilon, 1)$
Her strategy is conditional on the value of v_M .
If $v_M \geq E$, then she disclose her type and set $p = v_M$.
Otherwise, $v_M < E$, she conceal and set $p = E$.

(c)