

Review, Final Quiz
 Managerial Economics: Eco 685
 Quiz Date: Friday March 4 from 8 am to 10 am.

The quiz covers the business strategy notes: pages 51-69. We skipped section IV(a) and (b), which correspond to repeated games. All questions come from the class notes. The chapter in the book is 12. Additional study materials: study guide, list of definitions, homework 3, and this review sheet. Note: this review sheet covers only material since the last homework. There are no equations on this quiz (!).

Question 1

Economists testifying for Microsoft at the anti-trust trial claimed that although Microsoft had more than 90% market share in the PC operating systems market, they could not charge prices like a monopoly. Explain why.

Question 2

We have seen in general that threats of retaliation are often not credible because retaliating can hurt both players. But taking pre-emptive actions can put the other player in the position of having to make non-credible threats of retaliation against the pre-emptive action. For each of the following situations, give a pre-emptive action that can deter the opponent from playing the given action.

- a. Intel would like to deter NEC from entering the chip market.
- b. Company A would like to deter Company B from renegotiating a contract which gives Company B the right to be the sole supplier to Company A.
- c. Folger's, which supplies coffee primarily to the East coast, would like to deter Maxwell House, a West coast supplier, from launching an East Coast ad campaign and entering the East Coast market.
- d. A union would like to deter a firm from taking a hard line in negotiations.
- e. Home Depot would like to deter other hardware chains from building stores in towns that can support at most one store.

Question 3

A union and a firm have an adversarial relationship. The union and firm initially move simultaneously. The union can either build a strike fund or not, the firm can either build up inventories to prepare for a strike or not. After the simultaneous game, the union decides to strike or not.

The game is thus:

		Union	
		Build Strike Fund	Don't Build Strike Fund
Firm	Add Inventory	A1 or A2	B1 or B2
	Don't Add inventory	C1 or C2	D1 or D2

Here “1” signifies the union strikes and “2” signifies no strike. The payoffs are:

- If the union builds a strike fund and the firm builds inventory, then if the union strikes the payoff is $A1 = (-5, 5)$, and the payoff if the union does not strike is $A2 = (-2, -2)$.
- $B1 = (-2, -10)$ and $B2 = (-2, 0)$.
- $C1 = (-10, 10)$ and $C2 = (0, -2)$.
- $D1 = (-5, 5)$ and $D2 = (0, 0)$.

- a. Find all (if any) sub game perfect equilibria.
- b. Can the union get to a better equilibrium by promising not to strike if the firm does not increase inventories in preparation for a strike?

Question 4

Transport Equipment (TE) sells buses to schools. The Santa Barbara County School District (SB) wants to reduce pollution by requiring buses to be run on electric power. This would require TE to construct a specialized facility to make buses for which SB is the only buyer. TE knows that SB could attempt to renegotiate the price after the facility is built (it would be difficult to sue the government for breach of contract, and a public relations problem to sue a school district in any event).

- The cost of the facility is \$100 million.
 - The proposed contract gives TE \$200 million in profits (over and above all costs EXCEPT the cost of the facility).
 - The proposed contract gives SB a payoff equal to the difference between the next lowest bid, equal to \$300 million and the bid of TE (\$200 million).
 - SB could renegotiate the contract after the facility is constructed so that TE gets \$50 million in profits.
 - If the contract is not signed, both players get zero.
- a. Construct the tree diagram for the game where TE moves first by signing or not signing the contract and SB moves second (if necessary) with the decision to renegotiate or not and TE moves third (if necessary) by either accepting the renegotiated contract or not.
 - b. Find all (if any) Nash Equilibria. According to the Nash Equilibrium concept, is a promise by SB not to renegotiate credible?
 - c. Find all (if any) Sub Game Perfect Equilibria. According to the sub game perfect concept, is a promise by SB not to renegotiate credible?

- d. In general, give one way TE and/or SB could get a better outcome (hint: find the root cause of the problem).