Meng-Yu Liang

Comment to McAfee and Schwarz (AER,1994)

Marx and Shaffer (AER, 2004)

McAfee and Schwarz AER 1994: The upstream firm may sign a contract with a new downstream firm which will hurt the old contractors.

–Nondiscrimination (most-favored-customer) clauses do not generally restore the commitment solution.

Marx and Shaffer AER 2004:

McAfee and Schwartz proved that, even if the upstream seller offers a nondiscrimination clause, there cannot be an equilibrium in

which the efficient contract is offered to each firm and nondiscrimination clauses are not invoked. They interpret this as implying that nondiscrimination clauses do not prevent opportunism. However, they did not consider whether equilibria exist in which overall joint profit is maximized and nondiscrimination clauses are invoked. Our contribution is to show that this indeed occurs in equilibrium: given two downstream firms, the first downstream firm is offered an inefficient contract, but then (along the equilibrium path) invokes its nondiscrimination clause to obtain the efficient contract offered to its rival.

Suppose there are two firms.

- Let $W_1 = \{w_1, F_1) | w_1 \geq 0, F_1 = \pi_1(w_1, \infty)\}$ be the set of the wholesale prices and fixed fees for firm 1 such that firm 1 just break even if it were a monopolist in the downstream market.

- There is an equilibrium in which the monopolist offers $(w_1', F_1') \in W_1$ and a nondiscrimination clause to firm 1, and then offers contract (w^*, F^*) to firm 2.

- Given these contracts, if firm 2 accepts (w^*, F^*) , then firm 1 will invoke its nondiscrimination clause and switch to this contract. The reason is straightforward: by construction of (w_1', F_1'), firm 1's profit is negative once it faces competition from firm 2; whereas (w^*, F^*) yields zero net profit to both firms.

- The monopolist does not want to offer a contract to firm 2 such that firm 1 does not invoke its nondiscrimination clause.

proof: Suppose it did and the offer to firm 1 is (w_1', F_1'). Then the monopolist maximizes its payoff by choosing (w_2, F_2) such that F_2 extracts firm 2's surplus, i.e., $F_2 = \pi_2(w_1', w_2)$ and w_2 solves

$$\max_{w_2 \geq 0} (w_2 - c)\, q(w_1', w_2) + \pi_2\left(w_1', w_2\right) + F_1'$$

subject to the constraint that firm 1 does not invoke its nondiscrimination clause,

$$\pi_1\left(w_1', w_2\right) - F_1' \geq \pi_1(w_2, w_2) - F_2$$

If there is no interior solution, then the monopolist maximizes its payoff subject to firm 1's not invoking its nondiscrimination clause by not selling to firm 2. In this case, the monopolist has higher payoff with contract $(w^*,\ F^*)$. I

If an interior solution w_2' exists, then the maximum payoff of the monopolist is

$$\begin{aligned}&\left(w_2' - c\right) q(w_1', w_2') + \pi_2\left(w_1', w_2'\right) + F_1' \\ &= G\left(w_1', w_2'\right) - \pi_1\left(w_1', w_2'\right) + F_1' < G\left(w_1^*, w_2^*\right)\end{aligned}$$

Note that we have $F_1' = \pi_1(w_1', w_2')$ because firm 1 accepts (w_1', F_1') in equilibrium.