Industrial Organization micro3 2019 ENTRY AND EXIT

- Bain suggested 3 kinds of behavior:

  1) Blockaded entry. The threat of entry does not change the behavior of incumbent(s).

  2) Deterred entry. Changed behavior of incumbent(s) thwarts entry.

  3) Accommodated entry. Incumbent(s) find it more profitable to allow entry than to deter it.

Example: Strategic entry deterrence by capacity commitment

Let's assume a market with inverse demand curve $p = 1 - Q = 1 - q_1 - q_2$ and firm technologies with marginal cost of zero.

A monopoly firm's profit would be $\pi_M = \frac{1}{4}$ and each duopolist in Cournot competition would earn $\pi_D = \frac{1}{9}$. Check!

Say that in period one an incumbent (firm 1) can credibly commit to a capacity (quantity) and an entrant (firm 2) decides whether to enter. In the second period, in the above market either the incumbent or the duopolists supply the market. Entry cost is F.

Firm 1 knows its capacity affects the profits of the firm 2. It is a Stackelberg leader and thus for a given q_1,

$$q_2 = \frac{1-q_1}{2} \quad \text{implying} \quad \pi_2(q_1) = \left(1 - q_1 - \frac{1-q_1}{2}\right)\frac{1-q_1}{2} - F$$

Firm 1 is willing to deter the entry of firm 2 by a high capacity commitment as long as its profit is higher than under the duopoly under successful entry, $\pi_D = \frac{1}{9}$.

What is the max. capacity that firm 1 would commit to to remain a monopoly?

$$\pi_M = (1-q_1)q_1 > \pi_D = \frac{1}{9}.$$

Leads to 2nd degree equation, higher solution $q_1 = \frac{1}{2} + \frac{\sqrt{5}}{6} \approx 0.87$

$$\pi_2 \left(q_1 = 0.87 \right) \sim 0.009$$

Three cases a la Bain

- $0 \le F < 0.009$: Successful entry. Incumbent **accommodates** the entrant.
- $0.009 < F < \frac{1}{9}$. Incumbent **deters** entry by sacrificing some monopoly profits.
- $\frac{1}{9} < F$. Entry is **blockaded**. Incumbent maximises monopoly profits unrestrained.