

# Industrial Organization

Barriers to Entry

**Week 10**

# Barriers to Entry

**ENTRY BARRIERS: OBSTACLES OR HINDRANCES** THAT MAKE IT DIFFICULT FOR A **NEW FIRM** TO ENTER A MARKET AND COMPETE WITH ESTABLISHED COMPANIES.

## TYPES OF ENTRY BARRIERS

**Structural barriers to entry** – inherent features of a market that make it difficult for new firms to enter and compete.

Examples:

- Technology – economies of scale
- High sunk and fixed costs
- Exit barriers
- Network effects

**Strategic barriers to entry** – deliberate actions taken by existing firms to prevent or limit the entry of new competitors

Examples:

- Brand loyalty
- **Price limit strategy**

# Barriers to Entry

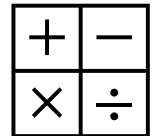
**PRICE LIMIT STRATEGY:** “PRODUCTS ARE SOLD BY A SUPPLIER AT A **PRICE LOW ENOUGH** TO MAKE IT **UNPROFITABLE FOR OTHER PLAYERS TO ENTER** THE MARKET” (SOURCE: LITERALLY WIKIPEDIA)

$\pi_I(q_E = 0) > \pi_I(q_E = q_E^{NE}) \rightarrow$  *The incumbent will **deter** E's entrance*  
 $\pi_I(q_E = 0) < \pi_I(q_E = q_E^{NE}) \rightarrow$  *The incumbent will **accommodate** E's entrance*

**This strategy (PLS) is more likely to be successful when:**

- When the incumbent has a cost advantage
- When there are high fixed costs

# Barriers to Entry



## EXERCISE

**3.** Imagine that the **demand** of some homogeneous product is given by  $P = 100 - 2Q$ . The total cost is given by  $TC = 10Q$ . Consider a **non-refundable cost of entering** the market of  $S = 100$ . Nowadays the market is covered by only one firm, but there is a potential competitor.

**(a)** How much will the first firm [*incumbent*] produce if it **remains a monopolist**?

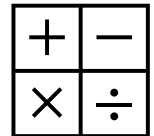
**(b)** Assuming that the potential competitor enters competing in a **Stackelberg** fashion, what are the profits for this competitor?

**(c)** If the original firm would like to keep the potential competitor out, how much would it need to produce? What about  $P$ ?

**(d)** Assuming that the first firm takes a **limit price strategy**, compute its **quantity and the market price as a function of  $S$** .

**(e)** What is the **value of  $S$  such that for values below it the first firm would prefer to avoid a limit price strategy**?

# Barriers to Entry



## EXERCISE

1. Firm 1 is the first firm in a given market. **Firm 1 can choose between one of two technologies available**, A and B, respectively the following cost function:

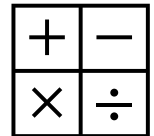
$$C_A = 60 + 2q_1 \quad C_B = 10 + 8q_1$$

The inverse demand curve is  $P = 20 - Q$  where  $Q$  is total output of industry.

**(a) Which technology firm 1 would choose** if monopoly lasts forever?

**(b)** Suppose that **firm 2 is considering the probability of entry** in this market and it can also adopt any of the aforementioned technologies. **If firm 2 enters, firms will compete à la Cournot.** Knowing this, **which technology should firm 1 choose?** In this model, what is the effect in welfare of the existence of a potential competitor?

# True or False



## EXERCISE (\*)

- ① “An incumbent can choose a quantity such that a new entrant prefers to produce nothing. Thus, the incumbent ensures itself the monopoly outcome.”
- ② “When a good has a perfect substitute, the way in which firms compete is irrelevant”

*(\*) These exercises are not in the exercise book*

# Recommended readings

CABRAL, LUIS MB. INTRODUCTION TO INDUSTRIAL ORGANIZATION. MIT PRESS, 2017.

- ✓ Chapter 14.1: Entry Costs and Market Structure
- ✓ Chapter 15.1: Entry Deterrence

