EE481:Industrial Economics

Dominant Firms

Pornthep Benyaapikul

Faculty of Economics, Thammasat University

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Objectives

1. Students understand the concept of "residual demand curve".
2. Students understand incentives of dominant firms and fringe firms.
3. Students can explain the pricing behavior of dominant firms in a systematic way.
4. Students can relate what is learned in class to real-life situations.

Homework

Due 24 January

1. Suppose the demand curve is $Q(p) = p^{\epsilon}$, what is the elasticity of demand? If marginal cost is \$1 and $\epsilon = -2$, what is the profit-maximizing price?
2. Suppose the demand curve for corn is $Q(p) = 10 - p$. Suppose that one firm owns all five units of corn in the world and has zero marginal cost. Does a monopoly sell less output than would be sold in a competitive market in which 100 firms each own 0.05 units?
3. Problem 8, Chapter 13 in Church and Ware (2000) (Church and Ware (2000) is an e-book and is available online).
4. (write about 0.5 page) Find 1 example of an industry that has a dominant firm. Describe what this industry is, which firm is the dominant firm, which firms are fringe firms (name the ones that you

Monopoly Behavior

Competitive Firms Behavior

Why some firms are Dominant

One big firm (dominant) and many smaller firms (fringes).

Why **dominant firm?**

- More efficient
- Enter earlier - become more efficient
- Enter earlier - had time to grow
- Government favor the orginal firm

The Model (No-Entry)

Assumptions

- One dominant firm with a lower production costs.
- Fringe firms are all price-takers.
- There are n fringe firms (no more entries).
- The dominant firm knows the shape of market demand curve $D(p)$.
- The dominant firm can predict the best action by the fringes. (knows the shape of fringes' supply curve $S(p)$).

The Model (No-Entry)

Fringe Firms' Reasoning

- Since I am a price-taker (perfectly competitive), my supply curve is $S(p)$ where $p = mc$.

Dominant Firm's Reasoning

- At what price (p) and quantity (q) should I produce?
- Not the monopoly p and q.
- If the fringe firms will produce some, then I should maximize profit for the left-over demand (residual demand).

The Model (No-Entry) - Graphs

The Model (No-Entry) - Results

Given that

- $\bar{p}$= minimum marginal average cost for the fringes, MC_f= the fringes' marginal cost
- $D(p)$ = market demand
- $S(p)$ = the fringe firms' aggregate supplycurve
- $D_d(p) = D(p) - S(p)$ =the dominant's residual demand curve
- MC_d= the dominant's marginal cost

We can get 2 types of results

1. If $MC_d < MC_f \rightarrow$dominant firm charges high price, the fringes get to produce.
2. if $MC_d \ll MC_f \rightarrow$dominant firm charges low price, the fringes shutdown.

The Model (Free-Entry)

Assumptions

- Same as before, but now fringe firms can enter freely.

Fringe Firms' Reasoning

- Same as before, but the aggregated fringes' supply curve is flat (from free-entry).

Dominant Firm's Reasoning

- Same as before.

The Model (Free-Entry) - Graphs

The Model (Free-Entry) - Results

- Now, no fringe firm can make a positive profit.

We can get 2 types of results

1. If $MC_d < \bar{p} \rightarrow$dominant firm charges high price, the fringes get to produce.
2. if $MC_d \ll \bar{p} \rightarrow$dominant firm charges low price, the fringes shutdown.

Reference and Further Reading I


Carlton, D.W. and J.M., Perloff.
Modern Industrial Organization. 4th Edition.
Pearson Addison Wesley Press, 2005.