EE481: Industrial Economics

Dominant Firms

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Homework

Homework (Due before 1pm, Friday 24th August at the BE office)

1. If the demand curve is $Q(p) = 10 - p$ and the marginal cost is constant at 4, what is the profit-maximizing monopoly price and output? What is the price elasticity at the monopoly price and output?
2. Would a profit-maximizing dominant firm ever produce more than if it were a monopoly? *Hint:* Show the behavior of both a monopoly and a dominant firm (in the no-entry model) on the same graph and note where the marginal revenue curves cross.
3. How would the no-entry model diagrams (Figure 4.6, Chapter 4 of the Carlton and Perloff book) change if fringe firms had the usual U-shape average and marginal cost curves? Assume that because of a barrier to entry, there are only n fringe firms. Describe the types of possible equilibria.

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

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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 $S(p)$).

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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).

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The Model (No-Entry) - Graphs

The Model (No-Entry) - Results

Given that

- $\overline{p}$= 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.

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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.

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Reference and Further Reading I


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