

EE481: Industrial Economics

Dominant Firms

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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

Monopoly Behavior

Competitive Firms Behavior (Short-run)

Competitive Firms Behavior (Long-run)

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 original firm

The Model (No-Entry)

Assumptions

- One dominant firm with a lower production costs.
- Fringe firms are all price-takers.
- 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?
- 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) - Graph

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

- ...

Fringe Firms' Reasoning

- ...

Dominant Firm's Reasoning

- Same as before

The Model (Free-Entry) - Graph

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

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