EE481: Industrial Economics

Strategic Behavior (Read Chapter 11, Carlton and Perloff)

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Strategic Behavior

Please read Chapter 11 of "Modern Industrial Organization" by Carlton and Perloff of this lecture.

- A set of actions a firm can take to influence the market environment so as to increase profits.
- Market environment = all factors that influence market outcome.
    - i.e. prices, quantities, profits, welfare
    - beliefs of customers, competitors
    - production capacity
    - costs of competitors, competitors actions, etc.

Noncooperative Strategic Behavior

Firm can use strategic behaviors to harm its rival and benefit itself. For a strategic behavior to work, firms need to have the followings:

1. Advantage - the firm that uses strategic actions should have some "advantage" over its competitor(s). For example, lower cost, more loyal customers, and higher production capacity.
2. Commitment - to succeed, firm should be able to commit to its behavior (credible threats). Otherwise, the competitors would not believe and the strategic actions would not result in desirable outcomes for the firm that use it.

Predatory Pricing

- A firm lowers its price below the rival's marginal cost.
- If there is no capacity constraint, all units in the market would be sold at low price. If this price is below the rival's MC, the rival would shutdown or exit.
- After the rival exits, the firm has a choice to increase its price.
  - firm can increase its price in the long-run only if the potential rivals believe that it would do predatory pricing again once there is new entry.
  - If firms have to always keep price low to discourage entries -> more efficient -> good for the consumer.
  - But **less** competition may mean less innovation ? (depends)

Predatory Pricing: identical firms

How possible for predatory pricing to succeed if firms are identical (same cost, same capacity)?

- If firms are identical, then they have as much advantage as the others. They have the same cost, same capacity, same reputation, etc.
- The incumbent's threat is as credible (or non-credible) as the entrant's threat.
- So, lowering price below cost is unlikely to be credible if firms are identical.

Predatory Pricing: one firm with advantage

- Advantage = lower MC, higher capacity to produce, better reputation, more loyal customers, etc.
  - Lower MC: when under-cutting price, the predating firm wouldn't lose much. This is because predatory pricing is costly (price too low). Thus, the lower the MC, the less money firm loses from doing predatory pricing.
  - Higher capacity constraint: when price is low, demand increase. The the predating firm has to have capacity to meet demand. Otherwise, the predatory pricing would not succeed.
- Predatory pricing is more likely to be successful if the predating firm has the advantages above.

Predatory Pricing: Legal Standards

Legal Standards of Predatory Pricing

- Usually, it is illegal if a firm conduct predatory pricing to

  "drive other firms out of the market and result in substantial lessening of competition".

- Usually, if $P < MC^{Short-run}$, then the competition authority would investigate the case. This is because when $P < MC^{Short-run}$, firm makes loss. It is not normal for firms to choose to make loss, unless they have a strategic intension.
- But $P < MC^{Short-run}$ does not necessarily imply predatory pricing. For example, giving free samples of new products to simply promote the products.

Limit Pricing (1)

- An incumbent sets a high quantity/low price as to deter entry.
  - When price is low enough, the entrant would find it unprofitable to enter.
  - When there is no demand left for the entrant, they would not enter.
- When does a firm choose to do limit pricing?
  - Firm has to compare profits among different scenarios. For example:
    1. profit from no entry (do limit pricing forever to discourage entry)
    2. profit when there is entry and firms cannot collude (charge Cournot price forever)
  - Firm do limit pricing if scenario 1. gives more profit.

Limit Pricing (2)

Strategic Investment

Firms can invest in order to gain competitive advantage over the competitors. This would allow them to successfully conduct strategic actions.

- Investment to lower production costs
- Investing in R&D (to lower cost)
  - R&D benefits customers.
  - But if the "cost of R&D" > "the gain from lower cost", firm may not invest in R&D.
  - However, if the lower cost can also prevent entry, firm may decide to invest in R&D.
  - The threat of entry increases R&D.

Strategic Investment (cont.)

- Learning by doing
  - Firm can learn to master their production (and lower cost) after some periods of time. Thus, the opportunity cost of operating unprofitably in the veryfirst periods can be viewed as investment.

Raising Rivals' Costs

- Direct method
  - Lobbying suppliers of the competitors to ↓quantity or ↑price
  - Ruining the competitors' reputation
- Interference through government regulations
  - Carbon tax, environmental regulations
  - City-planning regulations
- Tie-ins of other products
  - Sells animal feeds with chicks
- Raise switching costs
  - Mobile network providers in Thailand used to not allow customers to take the number with them when switching.
- Raise wages or other input prices
  - Capital-intensive firms may advocate the increase of the minimum wage if their competitors are more labor-intensive.

Advantage of Entrants

- More flexible
  - Can choose the more up-to-date technology
  - Can adapt to new regulations, consumer preference, etc.
- The entrant may choose to enter one of the geographical/product markets.
  - To avoid rigorous competition.
- The incumbent may not want to enter a price war if it covers a larger geographical/product market.
- But the incumbent may introduce a “fighting brand” to compete.
  - Or have promotions which are specific to the geographical market with competitors.

Welfare implications

- Predatory pricing, Limit pricing may or may not increase welfare.
  - price may be kept permanently low, which is good.
- If the strategy results it "more competition" -> "lower price and better quality", then it increases welfare.
- If the strategy "lessens competition", then it decreases welfare.
  - i.e. if firms successfully deter entry and then raise their price in the long-run.

Practice and facilitate collusion (Cooperative Strategic Behavior)

- Uniform prices
  - A firm charges to same price from everyone. Costly to lower the price.
- Penalty for price discounts
  - Most Favoured Customer Clause (MFCC)
  - Meeting Competition Clause
- Advance notice of price change
  - Supermarket's promotion leaflets, etc.
- Information exchange
- Standardized Delivered pricing
  - Sellers may disguise their discounts in the form of low shipping fee.
- Swap and Exchages
  - Have firms that are close to the customer ship to the customer.

Reference and Further Reading I

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