Market Definition and Market Power

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Introduction

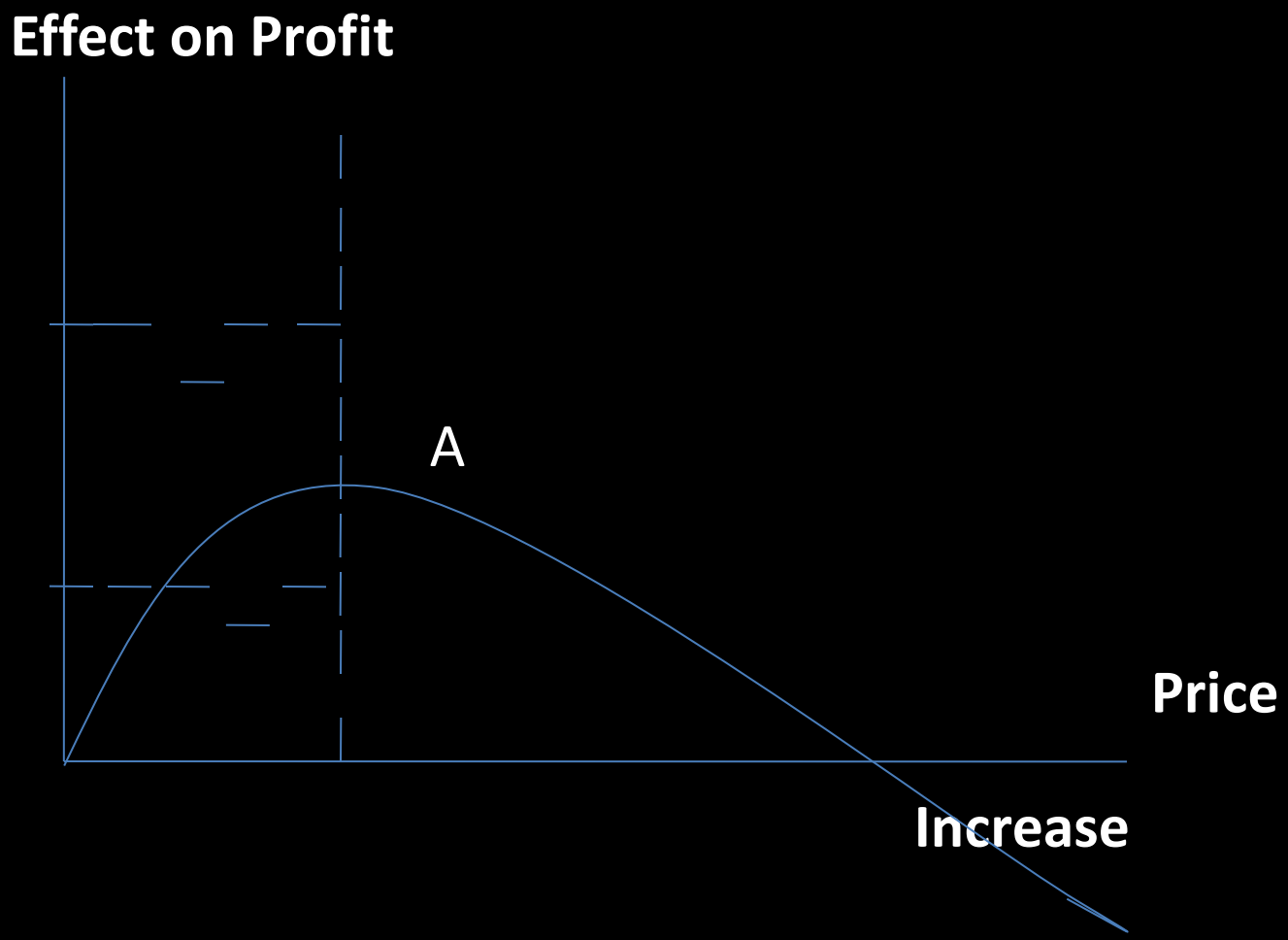
- It is very important for the subsequent assessment of the firms' position in the market;
- The objective Is to identify the boundary of competition: those actual competitors that are capable of constraining its behavior

Market Power

- Is the ability a firm or a group of firms within a market to raise its prices above the competitive level, without a loss in profits due to the loss of sales resulting from the increases in prices;

- Not all firms with market power have sufficient power to exercise their market power in antitrust sense;

Price & Profit Change and Substitution Process



Defining Relevant Market

- A product or group of products produced or sold in a geographic area in which not subject to price regulation.
- It combines the product and geographic relevant market;
- ***A relevant product market*** defined as a market which comprises all those products and or services which are regarded as interchangeable or substitutable by reason of the product characteristics, their prices and their intended uses;
- ***A relevant geographic market*** comprises the area in which the firms concerned are involved in the supply of products or services;

Defining Relevant Market

In US Merger Guidelines, such other terms added as:

….. *Such that a hypothetical profit maximizing firm, not subject to price regulation, that was the only present and future producer or seller of those products in that area would likely impose a "small but significant and non transitory" increase in price, the terms of sale of all other products are held constant.*

Testing the Relevant Market

(1) Cross Price Elasticity of Demand:

measures the responsiveness of the change in demand for a product, to changes in price of another product. It is defined as:

$$(\delta qi/\delta pj) / (qi/pj)$$

where qi and pj denote the quantity and price of products i and j respectively

The SSNIP Test (1)

The SSNIP Test, or Hypothetical Monopoly Test (HMT) is to identify those products and regions that provide the most important competitive constraints on the firms under investigation. The extent to which firms are able to increase prices above the price level appropriate for the particular inquiry depends on the availability of substitute products (***demand side substitution***) and the ability of other firms to begin supplying those products (***supply side substitution***).

SSNIP Test (2)

Steps to follow:

(1) Starts with type of products that the undertakings involved sell and the area in which they sell them;

(2) Engages in a thought-experiment the profit-maximizing price level of a hypothetical monopolist: determines the closet substitutes to which the consumers switch of the price-rise;

(3) Determines if the price-level in the hypothetical monopoly is at least 5-10% above benchmark price level, assuming the prices of all products remained constant;

(4) For merger cases, benchmark price is the current price. In case of alleged abuse of dominant, the benchmark price level may also be the competitive level of prices;

(a) *If No*, suppliers of other products also provide important competitive constraints. Adds tgese closet substitutes to the set of products and return to Step 2;

(b) *If YES*, the current set of products defines a relevant market and competition between suppliers of those products provide the main sources of competitive constraints;

SSNIP Test (3)

- For defining the relevant geographic market, you may proceed as above but iteratively adds regions instead of products;

- In practice, the product market tends to be defined first and then the extent of geographic market for those products is defined

Implementing the SSNIP: Critical Loss Analysis

- Asks how many sales a hypothetical monopolist could afford to lose in response to a price rise before the price rise becomes unprofitable. [Note that this approach does not answer the HMT. All it does is tell us what is the necessary condition for the HMT to be passed or failed].

Implementing the SSNIP: Critical Loss Analysis

- In order to answer SSNIP-test, we compare the critical loss (CL to the actual loss (AL) that is likely to occur in response to the price rise. The price rise of HM is unprofitable if the actual loss is larger than the critical loss (AL>CL). In this case, the candidate market is still defined too naroowly, and you must add the closest substitutes. Then, you performs the critical loss analysis for the wider market. The relevant market is found when the actual loss is no larger than the critical loss (AL < or equal to CL);

Implementing SSNIP: Critical Loss Analysis

- A formula for the critical loss can be found on the idea that profits prior to the price increase (π_0) must not exceed profits after the price increase (π_1:break-even-condition):

$$\pi_0 \leq \pi_1$$

$$(p0 - c) \cdot Q(p0) \leq (p0 + \Delta p - c) \cdot \{q(p0) - \Delta q)$$

$$\Delta q/q\,(p0) \leq t / (m + t)$$

$$AL \leq CL$$

Implementing SSNIP: Diversion Ratio

- Is a concept that is frequently used to measure the closeness of competition between two products in a differentiated products;
- A diversion ratio tries to answer: “ if the price of good 1 increase, what fraction of lost sales goes to good 2”

Implementing SSNIP: Diversion Ratio

- Consider demand curves for differentiated products:

$$q1\,(p1\,.\,p1) = a1 - b11\,p1 + b12\,p2$$

$$q2\,(p1\,.\,p2) = a1 - b22\,p2 + b21\,p1$$

- The coefficient b11 represents the loss of sales of good 1 that will be caused by an increase in p1 by one unit, i.e. one USD. The coefficient b21 represents the increase bin sales of good 2 caused by the same price increase;

Notes on CLA and DR

- As an alternative to critical loss, one can use the critical-elasticity of demand. However, it is often difficult to measure demand elasticity;
- A reasonable time period for assessing elasticity. Short run is larger than long run in many markets, especially in the case where consumer can stock up products;

Other Economic Tests

(1) ***Granger Causality Test***: testing the hypothesis that price movements in one geographic area or product have discernible effects on price movements in some other areas or products, e.g., a variable Y is "caused by some other variable X if one obtain significantly better predictions of Y when X is included. For e.g. cartel case on cooking oil.

Other Economic Tests

(2) Elzinga and Hogarty's Product Flows:

defining geographic markets based on product flows by arguing that "the only data required to estimate market areas are shipment data in physical terms. It measures the percentage of products consumed in an area that is produced there and the percentage of a product produced in an area that is consumed there. If both values are high test state that the geographic area in question should be regarded as a separate geographic market. But this has been criticized for many reasons;

Cellophane Fallacy (1)

- US case against Du Pont de Nemours (1956);
- Du Pont argued that cellophane was not a separate relevant market since empirical evidence showed that it competed directly with flexible packaging materials such as aluminium foil, wax paper, and polyetheline.
- But Du Pont argument was not sound. It was the sole supplier of cellophane. It is likely that Du Pont had raised its prices to the profit-maximizing level so that a further price increase would have been unprofitable;

Cellophane Fallacy (2)

- Applying the SSNIP-test would lead wrongly to define a wider market to include the set of products as described, although these do not belong to the relevant market;

- The elasticity of substitution increase with the price level:
  - If the initial situation is a monopoly one, the test lead to define false substitutes;
  - The idea is rather to find products that are substitutes to the original one at competitive prices;

Key Lessons to Cellophane Fallacy (1)

(1) Since the problem arises from starting the market definition exercise from an above-competitive price level, one might try to determine the competitive price level and start market definition from there. But this is impractical. It needs to know the relevant competitive constraints and model the industry in a competitive situation;

(1) To determine the case of exclusionary behavior, asking whether firms can exclude a rival and raise their prices above the current level;

Key Lessons to Cellophane Fallacy (2)

(3) Trying to circumvent the problem by deriving the market definition, e.g. from a geographically different market in the same products whose price is not elevated;

(3) If we cannot solve the problem, we can still use market definition to structure our thinking in economically coherent way (so, instead of viewing as a rigid set of sequential steps, it is better to view it as an organizational methodology);

Key Lessons to Cellophane Fallacy (3)

- As an organizational methodology, it is at least a way for us to to develop a consistent approach which is important to the courts to make sure that market defined in consistent and appropriate ways;

- However, there may be situation where there is direct evidence of market power, or no market power;

Other Notes on Methods for Defining Markets (1)

- Detailed analysis of the relevant market may be less important when there are clear pro competitive business justifications, or there is strong direct evidences;
- Two different products serve the same end use does not always mean they are in the same market, and two differentiated products does not always mean they do not compete;
- Price movements by themselves do not necessarily indicate that they are in the same market

Other Notes on Methods for Defining Markets (1)

- Differences in price levels do not always imply separate relevant markets. Differences in prices can be due to quality difference. It is not the level but the correlation of prices;
- The relevant geographic market is not bound to nation or regional-borders. For example, drivers may cross borders to buy cheaper;
- The absence of imports at current prices does not always imply separate relevant geographic markets. It is a matter of whether imports would occur if prices in one area were raised by 5 – 10%;

What happen if there is no data available to do market testing?

- (Separate) interview with those firms who supposedly compete in the market;
- Simple survey;
- Panel experts;
- Other support for evidences: corporate documents etc.

Final Remarks

- Relevant market defined to delineate market, to determine whether a firm has market power, and to support direct evidence of market power;
- A lot of methodology available but there is no one is perfect;
- Need to consider consider conditions in developing countries: lack of data, immature market (difficult to define relevant markets for emerging goods), high inflation rate making a 5 – 10% price increases should be adjusted;

Thank you

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