

EE481: Industrial Economics

Cartels

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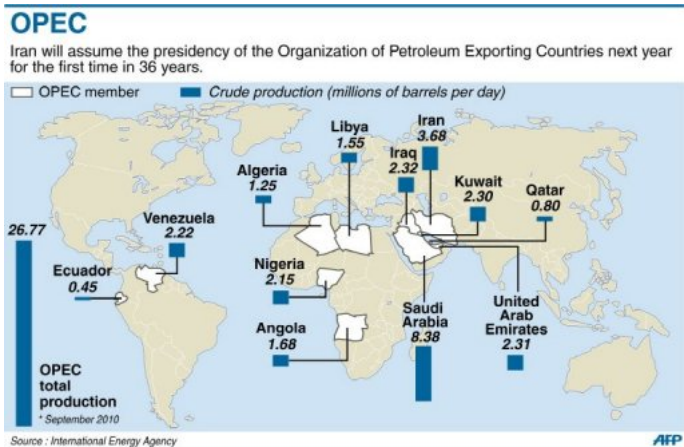
6 February 2019

Why Cartels Form

- To maximize the “Joint Profit”.
- Without coordinating on their production and pricing activities, it is not possible to achieve this maximum “Joint Profit” because each firm would have an incentive to cheat.
- So, maximizing the joint profit is NOT a Nash Equilibrium.
- To achieve maximum joint-profit outcome, firms need to coordinate and enforce the coordination agreement.

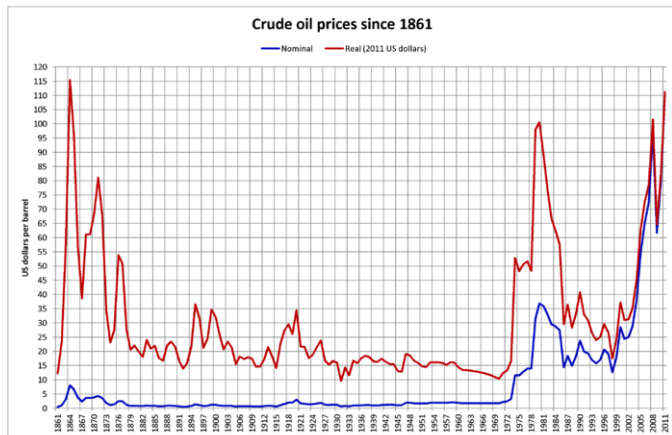
An example of cartel - OPEC

- A global-level oil cartel.



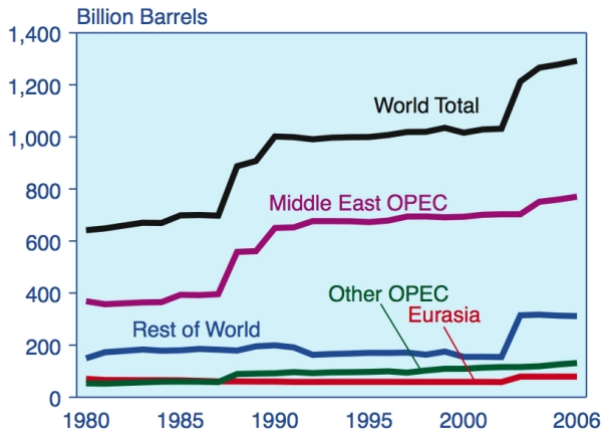
An example of cartel - OPEC

- Oil price increased after the formation of OPEC in 1970s.



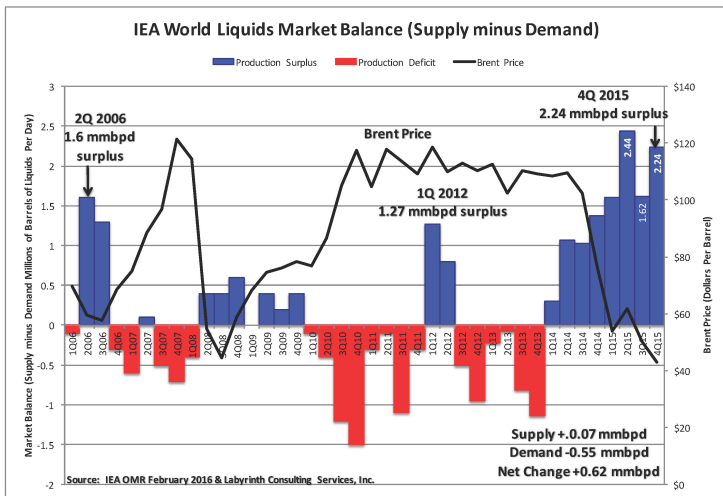
An example of cartel - OPEC

- Total production among OPEC countries has been kept low.



An example of cartel - OPEC

- Until 2014.



Why Cartels Form (Mathematical Exercise)

- ① Suppose there are 4 firms in the market. EACH faces the following individual demand curve:

$$p = 100 - 2q.$$

- ① If all 4 firms act like a monopoly in this market, and $mc = 10$, calculate how much joint-profit they can make.
- ② Calculate the joint-monopoly price and quantity.
- ③ If they agree to split the profit equally, how many unit should each firm produce?
- ④ If one of the firms decides to increase the quantity by 50% (while others produce the same amount), what would be the market price now?
- ⑤ From problem 4), calculate how much profit each firm makes.
- ⑥ Do you think acting like a joint-monopoly is a Nash Equilibrium? Why or why not?

Factors that facilitate the formation of cartels

- The ability to raise the market price
 - Low price elasticity of demand (steep demand curve)
 - Small number of competitors or high seller concentration. No threat of entry
- Low expectation of severe punishment
 - In most industrialized countries, there exists an anti-trust law.
 - Thailand also has an anti-trust law since year 1999, but cannot be enforced.
- Low organizational costs

Enforcing a Cartel Agreement

- Firms need to be able to detect others when they cheat
 - Few firms, prices do not fluctuate independently, prices are made public (example, have an online store).
- Incentive to cheat is small
 - Firms face diseconomy of scale when increases output or face capacity constraint.
 - There are not many customers in the market.
- Firms are able to use methods to prevent cheating
 - Most-favored-nation clause
 - Meeting Competition Clause

Consumers gain as cartels fail

- Illustrate through a model of dominant firm vs. competitive fringes
- Suppose there are 50 identical firms in the market (no more entry)
- Suppose n firms in this market do not follow the cartel agreement
- The rest $50 - n$ firms act together like 1 dominant firm

Consumers gain as cartels fail (Graph)

Antitrust Laws (Thailand)

- For firms with market turnover $> 1,000$ million/year AND have at least 50% of market share.

According to Section 50 and Section 51 of Thailand's Competition Act, B.E.2561, Firms are not allowed to or make an agreement to limit competition in any of the following ways:

- 1 Fix buying or selling price, fix buying or selling quantity
- 2 Make an agreement to control the market
- 3 Make an agreement for bid rigging
- 4 Make an agreement for market sharing
- 5 Limit quality of the product
- 6 Give the right to sell to a sole agent, etc.

Antitrust Laws (Thailand)



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Antitrust Laws (Thailand)

หมวด ๓

การป้องกันการผูกขาดและการค้าที่ไม่เป็นธรรม

มาตรา ๕๐ ห้ามมิให้ผู้ประกอบธุรกิจซึ่งมีอำนาจเหนือตลาดกระทำการในลักษณะอย่างหนึ่งอย่างใดดังต่อไปนี้

- (๑) กำหนดหรือรักษาระดับราคาซื้อหรือขายสินค้าหรือค่าบริการอย่างไม่เป็นธรรม
- (๒) กำหนดเงื่อนไขในลักษณะที่ไม่เป็นธรรมให้ผู้ประกอบธุรกิจอื่นซึ่งเป็นคู่ค้าของตนต้องจำกัดการบริการ การผลิต การซื้อ หรือการจำหน่ายสินค้า หรือต้องจำกัดโอกาสในการเลือกซื้อหรือขายสินค้า การได้รับหรือให้บริการ หรือในการจัดหาสินค้าจากผู้ประกอบธุรกิจอื่น
- (๓) ระบุ งด หรือจำกัดการบริการ การผลิต การซื้อ การจำหน่าย การส่งมอบ การนำเข้าเข้ามาในราชอาณาจักรโดยไม่มีเหตุผลอันสมควร ทำลายหรือทำให้เสียหายซึ่งสินค้า ทั้งนี้ เพื่อลดปริมาณให้ต่ำกว่าความต้องการของตลาด
- (๔) แทรกแซงการประกอบธุรกิจของผู้อื่นโดยไม่มีเหตุผลอันสมควร

Antitrust Laws (EU)

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Antitrust Laws (EU)

Article 101

(ex Article 81 TEC)

1. The following shall be prohibited as incompatible with the internal market: all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the internal market, and in particular

- (a) directly or indirectly fix purchase or selling prices or any other trading conditions;
- (b) limit or control production, markets, technical development, or investment;
- (c) share markets or sources of supply;
- (d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;
- (e) make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no other object than the subject of such contracts.

2. Any agreements or decisions prohibited pursuant to this Article shall be automatically void.

3. The provisions of paragraph 1 may, however, be declared inapplicable in the case of:

- any agreement or category of agreements between undertakings,
- any decision or category of decisions by associations of undertakings,
- any concerted practice or category of concerted practices,

which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefits and which does not:

- (a) impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives;
- (b) afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question.

Reference and Further Reading I

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