

Lecture XIV: Imperfect Competition – Monopoly and Monopsony

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Readings

A Story of Oil and Politics

Standard Monopoly

The Monopsony

Readings

- ▶ Becker 22
- ▶ Friedman & Friedman Chapter 3

A Story of Oil and Politics

- ▶ The story of oil and politics opens in the mid 1970s.
- ▶ For a variety of reasons, the Organization of the Petroleum Exporting Countries (OPEC) decide to reduce their exports to the west in general and the United States in particular.
- ▶ As depicted in Figure 1, the OPEC nations cut back their production from q_2^S to $q_2^{S/}$. We will discuss the why of this point later in this lecture.

OPEC Oil Embargo

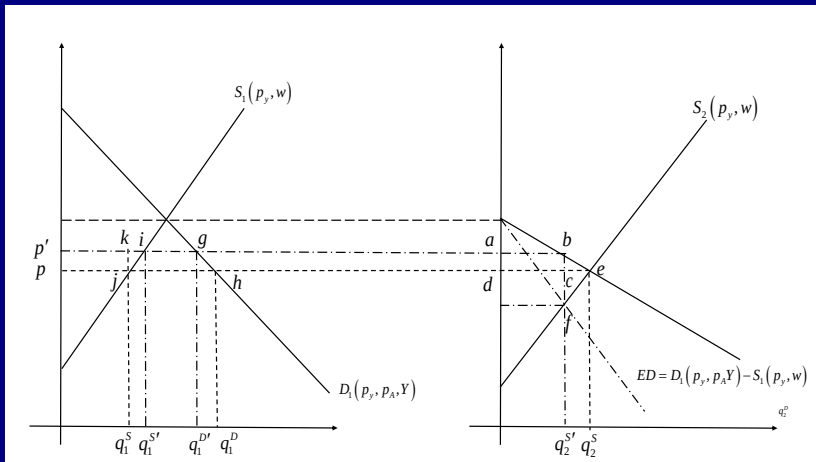


Figure : OPEC Oil Embargo

- ▶ This reduction in exports causes the price to increase from p to p' .
 - ▶ In the U.S. market, consumption falls from q_1^D to q_1^D' – gas lines expand as the price I paid for gasoline increased from 0.35 per gallon to 0.55 per gallon.
 - ▶ Production in the U.S. increases from q_1^S to q_1^S' .
- ▶ The producer surplus in the OPEC countries increase by $abcd - cef$.
- ▶ Consumers in the U.S. market lose $p'ghp$.

- ▶ The real story is what happened in to domestic supply.
 - ▶ Under our standard model domestic producers would gain $p'ijp$.
 - ▶ However, the Carter Administration proposed a Windfall Profit Tax – taxing the gains to all the wells that were already in production before the reduction in OPEC exports. The value of that tax would be $p'kjp$.
 - ▶ The argument was that the price increase (profit on new wells of kij) would be sufficient to bring new wells into production.
 - ▶ Essentially the supply response would not change. The only thing would be a transfer of "Windfall Profits" from the oil company to the federal government. The federal government needed these funds to help offset the shock (i.e., increased price of diesel used by the military).

Standard Monopoly

- ▶ The story of the monopoly model involves the derivation of marginal revenue.
- ▶ As depicted in Figure 2, the marginal revenue is the change in revenue for a single firm that faces the market demand curve.

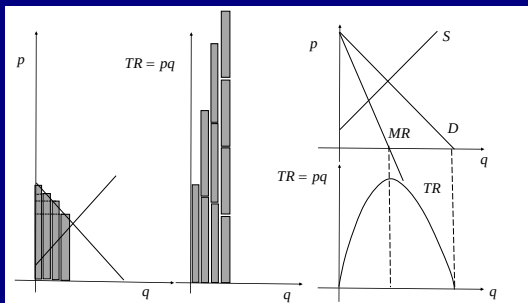


Figure : Derivation of the Marginal Revenue Curve

- ▶ The basic concept is that profit is maximized not where the price is equal to the marginal cost of production, but where the marginal cost of production is equal to the marginal revenue.
- ▶ The differences in this equilibrium are presented in Figure 3.

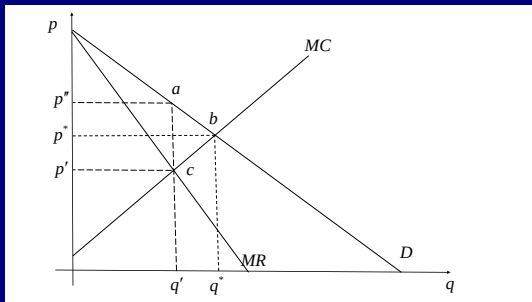


Figure : Monopoly Equilibrium

- ▶ The quantity produced by the monopolist is q' – determined by the fact that the marginal cost is equal to the marginal revenue at point c .
- ▶ Consumers are willing to pay p'' for this quantity of product.
- ▶ The monopolistic rents are $p''acp'$.
- ▶ However, the economic cost of this solution – the deadweight loss is abc .
- ▶ In the end, is there any difference between this deadweight loss and the deadweight loss to the government quotas on tobacco?

The Monopsony – A Case of a Single Buyer

- ▶ Suppose that a single buyer is purchasing all the output in a given market.
 - ▶ The cost for this individual can be written as

$$TC(q) = q \times S^{-1}(q) \quad (1)$$

where $S^{-1}(q)$ is the inverse supply function.

- ▶ Comparing this with the case of many buyers where the cost function is simply $TC(q) = q \times p$.

- At the margin, the cost of the last unit of product purchased by the buyer is

$$\frac{\Delta TC(q)}{\Delta q} = S^{-1}(q) + q \frac{\Delta S^{-1}(q)}{\Delta q} \equiv MIC(q). \quad (2)$$

The more the buyer purchased, the higher the price becomes - formally, this is the Marginal Input Cost (MIC).

Monopsony Model

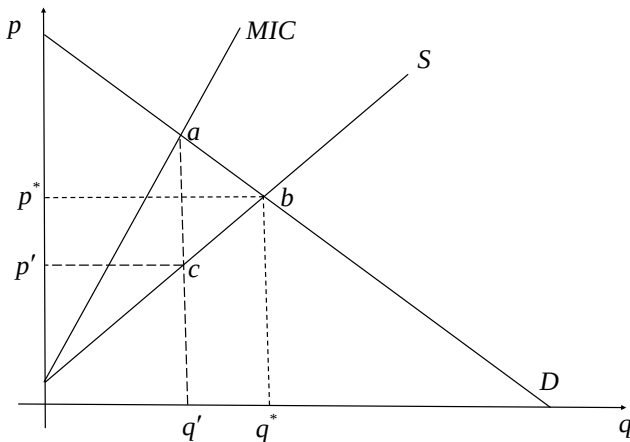


Figure : Monopsony Model

- ▶ The firm operates where the MIC equals the demand curve (or the marginal value product if the monopsonist is a firm demanded an input).
- ▶ At this quantity, the firm pays a price of p' .
- ▶ Like the monopoly model, the economic cost is abc .