# EKN-812 Lecture 8

## Non-Price Rationing; Monopoly (1)

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# Outline

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- what if prices don't adjust to clear markets?
  - we consider several allocation mechanisms and their welfare effects
- then, we study a different concept of equilibrium: monopoly
- this lecture: based on McCloskey, Ch. 16 and Ch. 17 - 18

# Nonprice Rationing

# Nonprice Rationing

- governments impose not just taxes and subsidies but also
  - compulsory services
  - costly regulations
  - price controls
  - rationing
  - constraints on entry (licensing)
- example: import quotas
  - must allocate the right to import - and earn the excess profits - somehow
  - if the quota binds, is this equivalent to a tax?

# Nonprice Rationing

- if markets don't clear in the usual sense, what happens?
  - a secondary "market" for the rents will develop
  - often, competition for these rents is itself socially wasteful
    - talent and time of lawyers, accountants, etc
    - wasted time (queuing)
    - violence
- why are these forms of competition wasteful relative to the price mechanism?
  - these are real resources being used up to allocate the good
  - by comparison, when people compete on price, the *process of payment itself* is not costly

# Nonprice Rationing

- example: restrictions on supply by licenses
  - how much should one be willing to pay for a licence?
- example: with a price ceiling, suppose consumers have to queue
  - how long will the queue be in equilibrium?
  - is the social loss larger or smaller than the tax that implements the regulated price as an equilibrium?
  - who bears the burden of the social loss?
    - what if suppliers served fewer than one buyer each?

# Unassigned Property Rights and "Externalities"

- why do we not worry about cows or pigs being hunted to extinction?
  - what is the social cost of slaughtering a marginal animal?
- example: noise pollution at airports
- Coase "Theorem" - Coase (1960)
  - the technological "cause" of an externality is not relevant for the economic or policy response
  - allow for side payments: trade in the right to use the resource
  - under some conditions, the assignment of property rights is irrelevant for the outcome
    - but, it will be relevant for the distribution of welfare!
- another way to think about Coase's insight is:
  - "externalities" are never just a technological phenomenon
  - they are just as much failures of the contractual environment

# Monopoly

# Monopoly: Basics

- if a firm faces a downward-sloping demand curve, MR $<$ price
  - of course, MR $=$ MC is the profit-maximizing rule
  - what makes competitive firms different?
- monopolists will never want to be on the inelastic part of the demand curve
  - how does this come out of the first-order conditions?
- example:
  - demand is $D(p) = d_0 q^{-\varepsilon}$
  - industry costs are

$$c(q) = \frac{c_0 q^{1+\theta^{-1}}}{1+\theta^{-1}}$$

# Monopoly: Basics

- can show that the monopolist's price is

$$p^M = d_0^{\varepsilon^{-1}} \left[ \frac{d_0^{\varepsilon^{-1}}(1-\varepsilon^{-1})}{c_0} \right]^{-\theta/(\theta+\varepsilon)}$$

- notice that there is *incomplete pass-through* of costs:

$$\frac{\partial \log p^M}{\partial \log c_0} = \frac{\theta}{\theta+\varepsilon} < 1$$

  - some subtle differences with the competitive case:
    - cost shocks at the *industry* level are also incompletely passed through under competition (why?)
    - on the other hand, *firm*-specific cost shocks are not passed through at all by competitive firms (why?)
    - see 2019 NBER lecture by Pinelopi Goldberg: "Firms in Developing Countries"

# Monopoly: Curiosities

- monopolists don't have a supply curve: why?
- some implications:
  - in some cases, price controls actually raise monopoly output
  - when will this be the case?
- can monopoly be "good"?
  - relative to an otherwise identical competitive industry, no: there is a social loss from reduced output
  - but, is this a reasonable counterfactual? monopolies typically exist for a reason
  - monopoly *may* be better than
    - a much less efficient competitive industry
    - average-cost pricing (e.g. in the regulated "natural monopoly" case)
  - it depends!
    - have to consider the specifics of demand and costs in each case

# Inferring Monopoly Behavior from Market Data

- can we infer or observe monopoly profits?
  - this is not an accounting category!
  - may be "buried" or "dissipated" in costs
- even apart from the accounting issues, can we be sure observed profits are not
  - temporary due to inelastic short-run supply? ("quasi-rents")
  - socially desirable "first-mover advantage"?
  - competitive rents due to superior productivity?

# Inferring Monopoly Behavior from Market Data

- barriers to entry *might* be evidence of monopoly power
  - but, how can they be distinguished from fixed costs in practice?
- is the number of sellers, or the distribution of market shares evidence of monopoly?
  - perhaps, but the threat of entry can mean competitive pricing even with few sellers
  - professional associations (e.g. in medicine) can help raise prices even though there are many sellers
- small, finite elasticities of demand facing a firm are certainly evidence of pricing power
  - but, how do we learn what these are?
  - suppose your competitors match your price
    - use the market-clearing condition to write

$$\varepsilon_i^D = \frac{1}{s_i}\varepsilon^D - \left(\frac{1-s_i}{s_i}\right)\varepsilon^S$$

    - here $\varepsilon_i^D$ is the elasticity facing firm $i$
    - $s_i$ is firm $i$'s market share
    - $\varepsilon^D$ is the elasticity of *market* demand
    - and $\varepsilon^S$ is the supply elasticity of everyone else (besides firm $i$)
- price discrimination (discussed later) is definitely evidence of pricing power

# Inferring Monopoly Behavior from Market Data

- as an example, suppose $\varepsilon^D = 0.5$ and $\varepsilon^S = 1$.
  - then, the elasticity facing a firm with 20% market share would be $\varepsilon_i^D = 6.5$
- is this large or small?
  - one thing we can say: it implies an 18% markup over marginal cost
  - we can also work out the implied welfare loss, using the Harberger approximation from last time
- in general, we don't observe marginal costs, so any claims about markups have to
  - rely on a model of market behavior and assumptions about demand and costs (which we may not trust)
- or, have to find some tricks for inferring marginal cost
  - e.g. if we observe a monopolist selling in two markets and we know he is a price-taker in one (e.g. export markets)
  - or, if there is a threat of competition from "nearby" suppliers
    - see fig. 18.2 of McCloskey (1985)
  - "nearby" can be interpreted broadly (not just as literal distance)
    - suppose there are some costs of finding another supplier
    - then each seller has a little monopoly power, but there are limits defined by these "search costs"

# References

Coase, Ronald H. 1960. "The Problem of Social Cost." *Journal of Law and Economics* 3: 1–44. http://www.jstor.org/stable/724810.

McCloskey, Donald N. 1985. *The Applied Theory of Price*. 2nd ed. New York: Macmillan.