BUEC 311: Business Economics, Organization and Management
Government Intervention

Fall 2020

Outline

Government Intervention

- Now we will examine how/why governments intervene in the market.

- Two main motives for government response:
  1. Market failures caused by non-competitive market structures.
     - Response may be regulation, antitrust, or competition policy.
  2. Market failures caused by externalities.
     - A market failure that arises due to incomplete property rights.

- Idea: Government is trying to eliminate deadweight loss created by market failures.

Outline

Market Failure and Government Policy

- Recall: Perfectly competitive markets achieve economic efficiency and maximize total surplus.
- However, in practice, most markets exhibit market failures.
  - Implication: potential substantial welfare losses.
- Deadweight loss created by market failures creates a rationale for government intervention:
  - Try to reduce/eliminate market failure.
- But is government intervention desirable?

Market Failure and Government Policy

- Economists use metrics to evaluate government policy:
  1. Pareto principle: A policy is desirable if it yields a Pareto improvement.
     - A Pareto improvement is any reallocation of goods or productive inputs that helps at least one person, *without harming anyone else*.
  2. Cost-Benefit principle: A policy is desirable if its benefits exceed the costs.
     - Any policy that increases total surplus is desirable even if some will be harmed.
- Three points to note:
  1. Any policy that generates a Pareto improvement satisfies the cost-benefit principle, but the converse is not necessarily true.
  2. In practice, policies that have large net benefits and small distributional effects tend to have broad support. Policies with small net benefits and/or large distributional effects are likely to be contentious.
  3. Economists also devote substantial analysis to distributional effects and, while there are metrics for these considerations, they tend to be less formally analysed

Outline

Eliminating Market Failure Due to Imperfect Competition

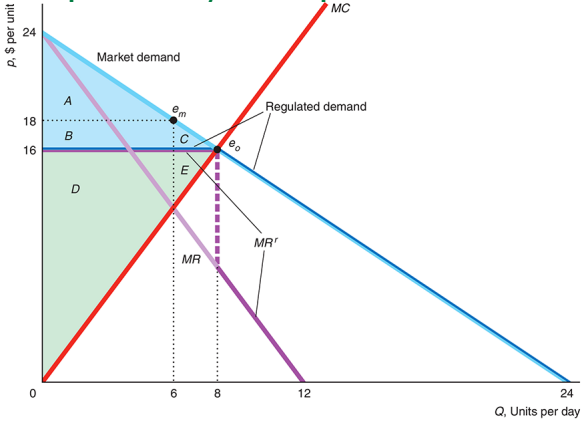
- Three approaches governments can use to address the market failure created by imperfectly competitive pricing:
  1. In the case of a monopoly: Own the monopolist and set relatively low prices.
     - Ex: Government ownership of electric power/water utilities.
  2. Regulate firms to prevent them from setting excessively high prices.
  3. Change market structure using antitrust or competition policy.

Regulation of Imperfectly Competitive Markets

- Most common approach to correcting market failure arising from imperfect competition: price controls.
  - Ex: Price caps are used to regulate telecommunications monopolies in 33 U.S. states, and Australia, Canada, Denmark, France, Germany, Mexico and the U.K.

- Idea: Government can eliminate deadweight loss by imposing a price cap equal to the price that would prevail in a competitive market.

Regulation of Imperfectly Competitive Markets



	Monopoly Without Regulation	Monopoly with Optimal Regulation	Change
Consumer Surplus, *CS*	*A*	*A* + *B* + *C*	*B* + *C* = Δ*CS*
Producer Surplus, *PS*	*B* + *D*	*D* + *E*	*E* − *B* = Δ*PS*
Total Surplus, *TS* = *CS* + *PS*	*A* + *B* + *D*	*A* + *B* + *C* + *D* + *E*	*C* + *E* = Δ*TS*
Deadweight Loss, *DWL*	−*C* − *E*	0	*C* + *E* = Δ*DWL*

Regulation of Imperfectly Competitive Markets

- Would a government always be able to eliminate deadweight loss using a price cap?

Regulation of Imperfectly Competitive Markets

- Regulation can be sub-optimal for several reasons:
  1. Poor information about demand and/or costs.
     - Limited information may lead to a price cap set above or below the efficient level.
  2. Inability to subsidize.
     - If a monopolist exhibits economies of scale, it may require a subsidy to produce the efficient level, which may not be politically viable.
  3. Regulatory capture.
     - Many firms engage in rent seeking (they devote effort and expenditures to gain a "rent" or profit from government actions) to capture the regulator.
     - A captured regulator will put industry interests ahead of the public interest.

Regulation of Imperfectly Competitive Markets

- Issues of information/subsidization/capture aside, it is important to recognize that regulating markets where $p > MC$ may still not be socially desirable because enacting regulation is costly.
  - Costs include gathering information, mistakes, regulatory capture/rent seeking.

- Governments should only regulate when doing so passes a cost-benefit test.
  - Typically this will be when market failures are large; in this case, the benefits from reducing a market failure will most likely exceed the costs.

Outline

5. Externalities

- An externality occurs when a person's well being, or a firm's production capability is directly affected by the actions of other consumers or firms rather than indirectly through changes in prices.
  - Effect is external because it occurs *outside* of the market and, hence, has not price.
- Externalities can be negative or positive.
  - A negative externality harms others:
    - Ex. A chemical plant that dumps waste into a lake, reducing the profits of a firm that rents boats.
  - A positive externality helps others:
    - Ex. A homeowner that invests a lot in landscaping on his/her property increases the value of neighbours' homes too.

Externalities

- When activities create externalities, the competitive market outcome will be inefficient.
- As an example, consider a competitive market in which firms produce paper.
  - Paper production creates pollution and greenhouse gas emissions as a byproduct.
  - Pollution harms people who live near paper mills, while greenhouse gas emissions cause climate change
- Assume, to start, that the paper mills do not have to pay for the harm that their pollution emissions cause.

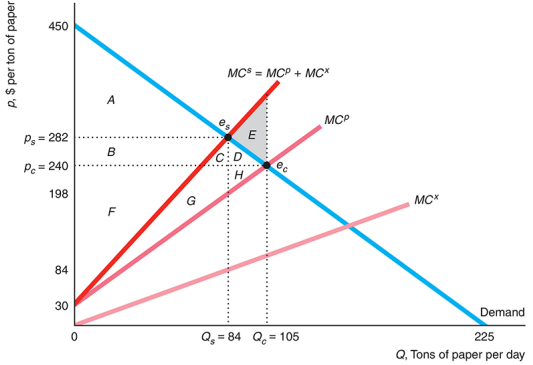
Externalities

- Because firms do not pay for the harm that their pollution causes, they only consider direct costs associated with production (labor, capital, energy, wood pulp, etc) when choosing how much to produce; the indirect costs created by the harm from the externality are ignored.

- The social cost associated with paper production is the sum of direct and indirect costs.
  - It is the total cost to society.

- If the firms do not pay for the harm that their pollution causes, the competitive market produces excessive pollution because *each firm's private, direct cost is less than the social cost*.

Externalities



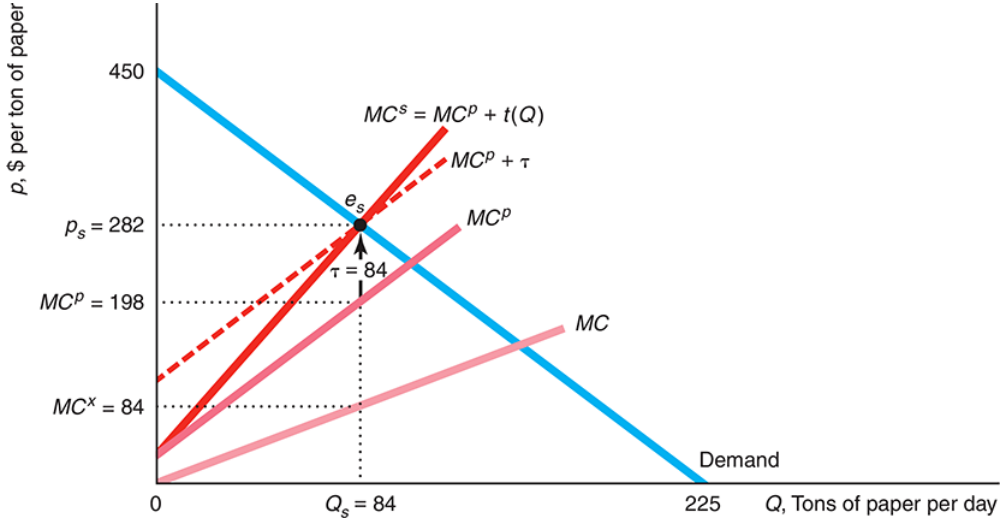
	Social Optimum	Private	Change
Consumer Surplus, CS	A	$A + B + C + D$	$B + C + D$
Private Producer Surplus, PS_P	$B + C + F + G$	$F + G + H$	$H - B - C$
Externality Cost, Cx	$C + G$	$C + D + E + G + H$	$D + E + H$
Social Producer Surplus, $PS_S = PS_P - Cx$	$B + F$	$F - C - D - E$	$-B - C - D - E$
Total Surplus, $TS = CS + PS_s$	$A + B + F$	$A + B + F - E$	$-E = DWL$

Externalities

- If the government has sufficient knowledge about the harm caused by pollution, the demand curve, costs, and production technologies, it can force a competitive market to produce the socially optimal level of output.

- The government can control pollution directly by:
  - setting emission standards, or by taxing pollution with an emissions fee or an effluent change
  - limiting outputs or inputs

Externalities



Internalizing Externalities in Practice

Outline

Open-Access, Club, And Public Goods

- The characteristics of goods and services can also create motives for government intervention.

- Goods and services differ in their rivalry and excludability.
  - Rivalry:
    - A good exhibits rivalry if its consumption by one individual means that no one else can consume it (ex: an orange).
    - A good is non-rival if its consumption by one individual means that anyone else can consume it (ex: clean air).
  - Excludability:
    - A good is excludable if the owner of a good can prevent others from consuming it.
    - A good is non-excludable if the owner of the good cannot prevent others from consuming it.

Open-Access, Club, And Public Goods

	Exclusion	No Exclusion
Rivalry	*Private good*: apple, pencil, computer, car	*Open-access common property good*: fishery, freeway
No Rivalry	*Club good*: cable television, concert, tennis club	*Public good*: national defense, clean air, lighthouse

Figure: Classification of Goods and Services

Open-Access

- Open-access common property is non-exclusive, but rival.
  - Typical of many natural resources.
    - Ex: An open-access fishery: Anyone can fish, but fish is rival.
  - Open access means that the resource is overexploited.
    - Ex: Each fisher wants to catch a given fish to gain property fights to that fish; they ignore the externality cost from reduced current and future fish populations. This leads to overfishing.
    - Similar problems arise with water, oil and natural gas, public freeways.
  - Government regulation can solve the overexploitation problem by restricting access to the commons.
    - Typical approaches: First-come, first-served; charging entry fee/tax.
    - Alternative approach: Assign property rights to create common property.

Club Goods

- Club goods are non-rival, but are subject to exclusion.
  - Common example: Golf or Country clubs.
    - Clubs exclude people who do not pay membership fees, but services provided (swimming or golfing), are non-rival until full capacity is reached.
    - Problem: The marginal cost for the club of accepting an additional member is close to zero, but clubs charge more than that. This is a market failure, creates a deadweight loss.
  - Another example: Cable TV/Streaming Services
    - Need to pay to access (exclusion), but one individual?s use does not affect another (non-rival).
    - Market failure from price above marginal cost.

- Government intervention to reduce deadweight loss from club goods is rare.
  - A firm may shut down if it is forced to sell at low (zero) marginal cost, creating larger deadweight loss.

Public Goods

- Public goods are non-rival and nonexclusive.
  - Ex: Clean air, security, national defence.
    - If a firm reduces its pollution (cleans the air), it provides a non-priced benefit to its neighbours; a positive externality.

- Public goods are typically undersupplied because of property rights are not clearly defined.
  - Issue: Because good is non-exclusive, individuals can benefit from the actions of others without paying.
    - People benefit from cleaning efforts of a firm without paying, so it is difficult for a firm to profitably provide clean air.
  - Consequence: Public goods are under-supplied by markets.

- Governments can eliminate the free rider problem by providing goods directly.
  - Other solutions require governmental or collective actions such as social pressure, mergers, privatization or mandates.

Outline

Intellectual Property

- Intellectual property: property rights over knowledge.
  - Issue: knowledge is a public good. It is non-rival and non-exclusive.
    - Creates a free rider problem; firms can benefit from discoveries of rivals without paying the research cost.
    - Such free riding limits the incentive to innovate.
- Typical approach to correct free rider problem: patents and copyrights.
- But intellectual property rights create an alternative problem: monopoly power.
  - To avoid this governments may fund research with the goal of making findings public or open source.
  - Another alternative: using innovation prizes.

Takeaways

1. Governments may intervene in markets to correct market failures arising from non-competitive market structures or externalities.
   - Characteristics of goods can also create a motive for government involvement in market.
2. Optimal intervention requires lots of information about the market.
3. Intervention should only occur if the benefits exceed the costs.