

Lecture 6

Market Failure & Government Intervention



Previously in E&S

- ★ Monopolistic Competition
- ★ Cournot Oligopoly
- ★ Bertrand Oligopoly
- ★ Collusion
- ★ Kinked demand model

Market Failure & Government Intervention



Market failure

- ★ Market failure is the situation when the market **outcome** is **socially undesirable**
- ★ Different societies have **different preferences**:
 - ▶ In Singapore **marijuana** is illegal
 - ▶ In L.A. marijuana is legal but **prostitution** is illegal
 - ▶ In Tehran marijuana is OK but **alcohol** is illegal
 - ▶ In Amsterdam **everything** is legal!!

Types of market failure

- ★ **Monopolies** are known to cause economic **inefficiency** and are socially **disliked**
- ★ But even in **perfectly competitive** markets, which exhibit **100% economic efficiency**, the society may **dislike** the PC equilibrium
 1. Market prices may fail to reflect the **real cost** or the **real benefit** of the product
 2. The market may fail to **allocate** the good to those who value it the most
 3. The market may fail to produce the good at the **min opportunity cost**
 4. The market may produce a good that fails to **cover the real needs** of the society
 5. The market may fail to control the abuse of **monopoly power**
 6. Consumers may **fail to evaluate the consequences** of the use of a product
 7. The market may fail to **equilibrate** for various reasons

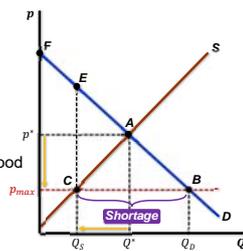
Regulation

- ★ Regulation is a **response** to market failure
- ★ Intervention may **lead to improvement** in social welfare
 - winners from regulatory intervention could **compensate** the losers and still be winners
- ★ **Two types** of regulatory intervention:
 1. **Direct government intervention:**
 - regulation may **target** prices, quality or product variety to **prevent** a failing market outcome (for example, price controls)
 2. **Changing market institutions:**
 - instead of targeting the market outcome, the regulator **alters the rules** of competition (for example, antitrust)



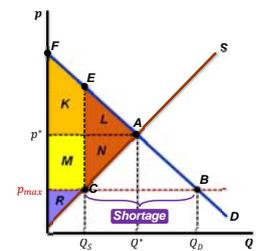
Price ceiling

- ★ Market equilibrates at A with price p^*
- ★ If a **maximum price** p_{max} is imposed:
 - ▶ Quantity demanded **increases** from Q^* to Q_D
 - ▶ Quantity supplied **decreases** from Q^* to Q_S
 - ▶ A **shortage** equal to $Q_D - Q_S$ is created.
- ★ Producers **sell less at lower price**
- ★ Consumers along **EA** can **no longer** buy the good
- ★ But **consumers along FE** are able to **buy it cheaper**
- ★ This policy creates **winners and losers**



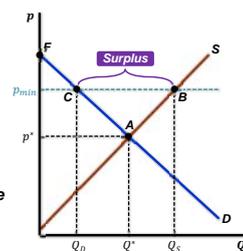
Efficiency of a price ceiling

- ★ At p_{max} only Q_S will be **traded**
- ★ **Consumer surplus:**
 - ▶ Was: $K + L$;
 - ▶ Gain = $M - L$
 - ▶ If demand is **sufficiently more inelastic** than supply, L can exceed M .
- ★ **Producer surplus:**
 - ▶ Was: $M + N + R$;
 - ▶ Gain = $-M - N$.
- ★ **Market efficiency:**
 - ▶ $DWL = L + N_s$



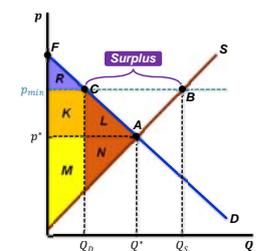
Price floor

- ★ Market equilibrates at A with price p^*
- ★ If a **minimum price** p_{min} is imposed:
 - ▶ Quantity supplied **increases** from Q^* to Q_S
 - ▶ Quantity demanded **decreases** from Q^* to Q_D
 - ▶ A **surplus** equal to $Q_S - Q_D$ is created.
- ★ Producers **sell less (Q_D) at higher price**
- ★ Consumers along **CA** can **no longer** buy
- ★ Consumers along **FC** are able to **buy but more expensive**
- ★ The policy creates **winners and losers**



Efficiency of a price floor

- ★ At p_{min} only Q_D will be **traded**
- ★ **Consumer surplus:**
 - ▶ Was: $R + K + L$;
 - ▶ Gain = $-K - L$.
- ★ **Producer surplus:**
 - ▶ Was: $M + N$;
 - ▶ Gain = $K - N$
 - ▶ If demand is **sufficiently more elastic** than supply, N can exceed K .
- ★ **Market efficiency:**
 - ▶ $DWL = L + N_s$



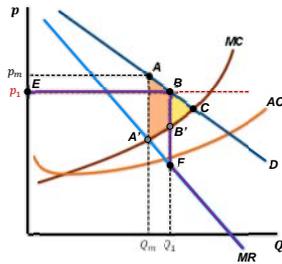
The efficiency of a competitive market

- ★ In the analysis of markets, we **often talk** about economic efficiency **maximization** of aggregate consumer and producer **surplus**
- ★ Policies such as **price controls** cause dead weight losses in the market
- ★ Intervention may **fix the failure** but this will come at an **efficiency cost** to the economy . .



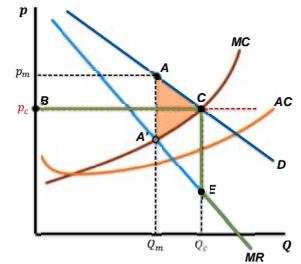
Price regulation in monopoly

- ★ If **left alone**, the seller charges p_m
DWL ACA' is imposed in the market
- ★ The regulator may **impose** max price p_1 :
 - ▶ To cause **price** to fall to p_1 ,
 - ▶ **Quantity** to increase to Q_1 ,
 - ▶ and **DWL** to decrease to BCB' .
- ★ The **MR curve** with regulation of p_1 :
 - ▶ **Above B**, the D does not apply, the monopolist is a **price taker**, so $MR = p_1$
 - ▶ **Below B**, the D and MR apply normally
- ★ Monopolist indeed **wants to price** at p_1 .



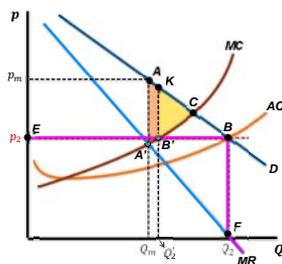
Elimination of DWL

- ★ If **left alone**, the seller charges p_m
DWL ACA' is imposed in the market
- ★ The regulator may **impose** max price p_c :
 - ▶ To cause **price** to fall to p_c ,
 - ▶ **Quantity** to increase to Q_c ,
 - ▶ And to **eliminate the DWL** entirely.
- ★ The **MR curve** with regulation of p_c :
 - ▶ **Above C**, the D does not apply, the monopolist is a **price taker**, so $MR = p_c$
 - ▶ **Below C**, the D and MR apply normally
- ★ Monopolist indeed **wants to price** at p_c .



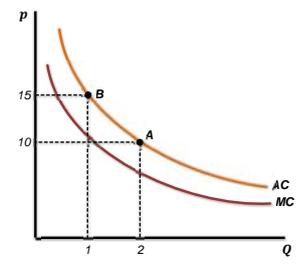
Price regulation overshooting

- ★ If **left alone**, the seller charges p_m
DWL ACA' is imposed in the market
- ★ The regulator may **impose** max price p_2
to cause **quantity** to increase to Q_2
- ★ With regulation, **MR curve** becomes EBF
- ★ At Q_2 the monopolist has **zero profit**
- ★ Monopolist **maximizes profit** at Q_2'
- ★ Regulation is **unsuccessful**:
 - ▶ **Limits quantity** to $Q_2' < Q_c$
 - ▶ **Maintains significant DWL** KCB' . .



Natural monopolies

- ★ In some markets, it is possible that a single firm can produce the entire output at a **significantly lower cost** than if there were several firms
this happens when there are large **economies of scale**
- ★ **Splitting** the monopoly into two firms results in considerably **higher cost**:
 - ▶ With 1 firm, 2 units cost $2 \cdot 10 = 20$
 - ▶ With 2 firms, 2 units cost $15 + 15 = 30$.
- ★ **Examples**: metro, airports, utilities .



Price control Market power

Regulating a natural monopoly

- ★ Unregulated monopolist would produce Q_m and charge p_m
- ★ Regulation at p_s yields the **maximum market efficiency** but at **losses**
- ★ Regulation at p_e allows the monopolist to **break even** and offers **sustainability** however, a **lower quantity** is produced

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Antitrust

Abuse of dominant position

- ★ Mere existence of market power is **not a major concern**
- ★ Using market power to **eliminate, restrict or distort** competition **is a concern**
- ★ Authorities will **intervene** to control firm conduct whenever there is **abuse**:
 - ▶ "Excessive" prices
 - ▶ Strategies that deter entry or expansion of rivals
 - ▶ Price discrimination or tying
 - ▶ Predatory behavior
 - ▶ Vertical restraints

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Antitrust

Antitrust authority

- ★ In every country there is a **National Authority** for trade and antitrust in charge of protecting healthy competition
- ★ Most systems use **sequential mixture** of rules and discretion
- ★ In case the Authority **identifies** violation of rules:
 - ▶ It can propose to **settle** with the perpetrator with a fine or even jail time
 - ▶ Take the case to **trial** via the national judicial system

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Antitrust

The judicial system

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Antitrust

Burden of proof

- ★ In general, the **prosecution** carries the **burden of proof** for every case
- ★ Must provide **evidence beyond reasonable doubt** that the defendant has violated the law:
 - ▶ Expert testimony for **econometric evidence**
 - ▶ Hard evidence of **direct communication** between executives
 - ▶ Use of **facilitating practices**
 - ▶ Evidence that firms **acted contrary** to their unilateral self-interest (for instance, by raising prices during a recession)

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Defense

★ **Defense** of Antitrust cases can be at **5 levels**:

1. The alleged practice per se did **not occur**
2. The practice is **not against** the law
3. The practice has not resulted into **market power**
4. The practice has not altered the **market outcome**
5. The market outcome does not constitute **abuse**.

★ For example, **poking holes** to a price fixing scheme:

- ▶ Fixed price was a **reasonable markup**
- ▶ Without fixed prices across the industry, we cannot offer **pre-sale services**
- ▶ The efficiency gains **offset** the DWL...

Antitrust laws

★ **Rules and regulations** designed to promote a competitive economy by:

- ▶ Prohibiting **actions** that restrain or are likely to restrain competition
- ▶ Restricting the **forms** of allowable market structures.

★ Market power arises in a **number of ways**, each of which is **covered** by the antitrust laws.

Sherman Act (1890)

★ **Section 1**: Prohibits agreements, contracts, or conspiracies in **restraint of trade**:

- ▶ Explicit agreements to **restrict output** or **fix prices**
- ▶ Implicit collusion through **parallel conduct**.

★ **Section 2**: Prohibits conspiracies that result in **monopolization**:

- ▶ It is **OK** if a firm gets the entire market because of **superior skill and intelligence** when nobody else could do it as well as that firm
- ▶ It is **not OK** if a firm gets the entire market by the **use of means** which made it impossible for other firms to engage in fair competition.

Clayton Act (1914)

The Clayton Act updated the policy by **prohibiting**:

1. **Suppliers** to require buyers **to not buy** from a competitor
2. **Mergers and acquisitions** if they "substantially lessen competition" or "tend to create a monopoly"
3. **Predatory pricing**:
 - ▶ Predatory pricing is when a firm **prices below its cost** to drive competitors out of business
 - ▶ The predator firm takes advantage of the fact that has **deeper pockets** than its competitors
 - ▶ When the market is monopolized the predator tries to **impose barriers** and **raise the price**.

Federal Trade Commission Act (1914)

★ This act **created** the Federal Trade Commission (FTC) the first **independent** antitrust authority in the world

★ The FTC would undertake **additional duties** against monopolization and abuse of dominant position:

- ▶ Deceptive **advertising**
- ▶ Deceptive **labeling**
- ▶ Agreements to **exclude competing brands** from retailing...

Antitrust legislation in Singapore

★ The competition law that governs all non-state businesses in Singapore is the **Competition Act**

voted in 2004 – became *effective* in July 1, 2007

- ★ The act prevents **unfair trade practices** and restricts the **formation of cartels** and monopoly activity
- ★ It is **modeled after** the UK Competition Act of 1998
- ★ In Singapore antitrust is monitored and enforced by the **Competition and Consumer Commission of Singapore (CCCS)**.

Antitrust Singapore

The CCCS

- ★ The CCCS is a **statutory body** that investigates and adjudicates instances of violations of the Act
- ★ It has powers to **directly impose sanctions** that include:
 - ▶ Financial **penalties**
 - ▶ Force **structural changes**
 - ▶ **Terminate agreements** or business practices that deems anti-competitive.
- ★ In Singapore, the **burden of proof** falls on the defendant:
 - ▶ The CCCS can **unilaterally** impose sanctions
 - ▶ The accused can **appeal**
 - ▶ In the appeal, the accused must **make a case** for innocence.



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Antitrust Singapore

Section 34: Collusion

- ★ Section 34 directly **prohibits** anti-competitive activities:
 - ▶ Attending a **cartel meeting**, irrespective of agreement on the outcome
 - ▶ Agreements that directly or indirectly **fix purchase or selling price** or any other trading conditions
 - ▶ Agreements that **limit** production, technological progress, investment, sources of supply
 - ▶ The **sharing of markets** or sources of supply
 - ▶ **Bid rigging** or **collusive tendering**.

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Antitrust Singapore

Section 47: Abuse of dominant position

- ★ Section 47 **reveals the intent** of the legislator towards what constitutes abuse of dominant position:
 - ▶ **Prohibits** conduct that protects, enhances or perpetuates market power in **ways unrelated to competitive merit**
 - ▶ **Does not prevent** striving to achieve dominant position by offering cheaper or better products.
- ★ Specifically **prohibits**:
 - ▶ Predatory behavior
 - ▶ Agreements that **impose dissimilar conditions** to equivalent transactions with different trading parties
 - ▶ **Parallel conduct** from a group with the intention to influence a competitor's position.

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Antitrust Singapore

Section 54: Restrictions on mergers

- ★ Section 54 bars mergers and acquisitions when they **result in concentration** of high market power
- ★ Competition **concerns** from a merger will arise only when:
 - ▶ The merged entity will have a **market share of 40%** or more
 - ▶ The merged entity will have a market share of 20 - 40% and the market share of the **three largest firms** is 70% or more
 - ▶ The merger gives rise to **coordinated behavior** because the number of players in the market are reduced
 - ▶ The merger will result in **price increase** in the industry.
- ★ Interested parties are allowed to ask for a **confidential preliminary verdict** by the CCCS.

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Antitrust Singapore

External video

In this CNBC video, follow along a brief historical overview of antitrust. Everything will be familiar to you but you will see a different perspective of antitrust: its politics.



Google, Facebook, Amazon And The Future Of Antitrust Laws
 372K views • 10 months ago
 U.S. antitrust law dates back to 1890, but it's been largely out of the spotlight for twenty years. Now, with antitrust concerns swirling ...

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Internal video

This video goes over the economics of externalities. What happens when costs and utility do not stay entirely with those taking part in the market process, but fall on innocent bystanders? How can government solve externality failures?



Public goods

Public goods

- ★ A good is public when **two conditions** hold:
 1. The good is **non-excludable**
the owner **cannot exclude users** who **do not pay** for its use
 2. The good is **non-rival**
consumption of the good by one user **does not preclude** consumption of that good by other users
- ★ Private firms have **no interest** in producing such goods at least, for profit
- ★ The reason is the **free-rider problem**
users prefer to **use the good without paying**.

Government provision of public goods

Public goods

- ★ Government can **fund** public goods through **taxation**
- ★ The provision of public goods is one of the **fundamental reasons** for the existence of government in society
- ★ Prominent **examples** of public goods:
 - ▶ National defense
 - ▶ Internal security and order
 - ▶ Infrastructure
 - ▶ Judiciary system
 - ▶ Health system
 - ▶ Education

Thank you!

