EC 360: Industrial Organization
Lecture 3 - antitrust

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Antitrust

- This lecture introduces antitrust and its evolution over the last 150 years
  - **Antitrust** refers to laws and regulations designed to mitigate market power of monopolies, with the intent of making markets more competitive
- Antitrust conduct falls into two categories
  - Per se: price fixing, market division
  - Rule of reason: most everything else
- In order to understand why current laws are the way they are, we need some background
  - Why society wanted regulation
  - How these regulations were flawed (from an economic efficiency perspective)

Antitrust background: pre-Civil War

- Prior to the Civil War, monopolies didn't cause many problems
  - Transportation infrastructure could not facilitate enough competition
  - Thus, regulating industries could not improve social outcomes
- During the war, demand for products such as guns, shoes, and machinery skyrocketed
  - Economies of scale in certain industries led to an increase in concentration
  - Surprisingly, firms still generally behaved competitively

Antitrust background: post-Civil War

- After the Civil War, many farmers and small businesses became unprofitable
  - Railroads gave bulk discounts to large firms
  - Railroads priced competitively if there were multiple railroads servicing specific routes; however, they increased prices in cities without competition
  - Local grain elevators behaved similarly based on the degree of competition nearby
- Public opinion began to turn against big businesses
  - Many big businesses used predatory pricing (i.e. Standard Oil)
  - Political corruption became apparent
- Farmers and small businesses started to lobby the government for regulation

Antitrust background: cartels

- Profits of big businesses increased even more with the formation of cartels
  - **Cartels** are agreements between firms to collude
- Cartels operated in various forms across a wide variety of industries (i.e. oil, railroads, alcohol, metals, coal, lumber, meat)
  - **Price-fixing agreements** where firms agreed to set prices arbitrarily high
  - **Mergers** where multiple firms become one

Antitrust background: cartel cheating

- Cartels typically don't last long
  - Firms in the cartel could cheat by undercutting the cartel price
  - Results in an unraveling of the cartel
- Cartels tried to prevent cheating
  - A **pool** is a cartel agreement where all members combine and split their profits
  - Pools did not mitigate all incentives to cheat

Antitrust background: trusts

- While pools worked in some cases, they weren't very effective
  - They were replaced by **trusts**, a group of firms that allow a third party to make the majority of operating decisions
  - Designed to allow the group of firms to behave like a monopoly without merging
- The general public hated trusts
  - Trusts used their market power to charge exceptionally high prices
  - Trusts corrupted public employees and lawmakers, who then enacted protective tariffs to further increase the market power of the trusts
  - Resulted in trusts having substantial power over communities by controlling the factories and plants

Sherman Antitrust Act

Sherman Antitrust Act

- Trusts were finally limited by the **Sherman Act of 1890**
  - The main provisions of the Sherman Act are contained in the first two sections
  - **Section 1**: forming a trust, or attmepting to form a trust between firms is illegal
  - **Section 2**: forming or attempting to form a monopoly is illegal
- Taken together, this outlawed specific firm behavior
  - Cartels were explicitly banned
  - Mergers that increased efficiency were allowed, while mergers that increased market power were not
  - Thus, a natural monopoly does not violate the Sherman Act

Issues with the Sherman Act

- The Sherman Act is (intentionally?) vague
  - What constitutes a contract or conspiracy “in restraint of trade”?
  - How can one determine if a firm is acting as a monopoly or attempting to monopolize?
  - When is it a conspiracy?
- Regulators face a difficult job of detecting and punishing monopolitisic behavior
  - Are firms exhibiting non-competitive activites, or are they just more efficient than other firms?
  - Is the monopoly using their market power to discourage competition, or are they merely a natural monopoly?
  - Will regulation disincentive competition?

Sherman Act: penalties and sanctions

- Enforcing the Sherman Act was difficult
  - Enforcement was deferred to the courts
  - They created guidelines for determining whether firms are in violation of the act
- Initially, the penalty for a violation was a maximum of $1b for firms, and up to 10 years in prison and over $1m in fines for individuals

Sherman Act: penalties and sanctions

- What if a firm can make an extra \$1b by acting as a monopoly?
- In order to incentive legal firm behavior, Congress passed the **Criminal Fines Improvement Act**, allowing regulators to fine offenders up to twice the value of the firm's pecuniary gains
- However, firms know that they will not always be caught

Sanctions example

- Let's consider an example where a firm is trying to decide whether to act competitively or behave as a monopoly
  - Suppose that if a firms acts as a monopoly, it can earn $60m in profit
  - The firm believes there is a 40% chance that it will get caught (violating the Sherman Act)
  - If it is found guilty, it will have to pay $3m in legal fees and the CEO will go to jail for 10 years, which she values at $12m
- What is the firm's expected (additional) profit by acting as a monopoly?

Sanctions example

$$\begin{aligned}
\mathbb{E}\left[\Pi\right] &= \mathbb{P}\left(\textit{not caught}\right) \cdot \Pi_{monopoly} + \mathbb{P}\left(\textit{caught}\right) \cdot \left(\Pi_{monopoly} - \textit{fines}\right) \\
&= .6 \cdot \left(\$60m\right) + .4 \cdot \left(\$60m - \$120m - \$3m - \$12m\right) \\
&= \$36m - \$30m \\
&= \$6m
\end{aligned}$$

- Notice the firm expects to make more profit if they act as monopoly, relative to competitively (zero profit condition)

- Recall firms are self-interested and profit maximizing

- Thus, the firm will illegally act as a monopoly

Intent of the Sherman Act

- The intent of the Sherman Act was to deter monopoly behavior, not punish it
- Let's dive deeper into its original intent as well as two influential interpretations of the act
  - Robert **Bork**: the intent of the Sherman Act was to promote consumer welfare through allocative efficiency
  - Robert **Lande**: the intent of the Sherman Act was to prevent firms with market power from unfairly transferring wealth from consumers to themselves

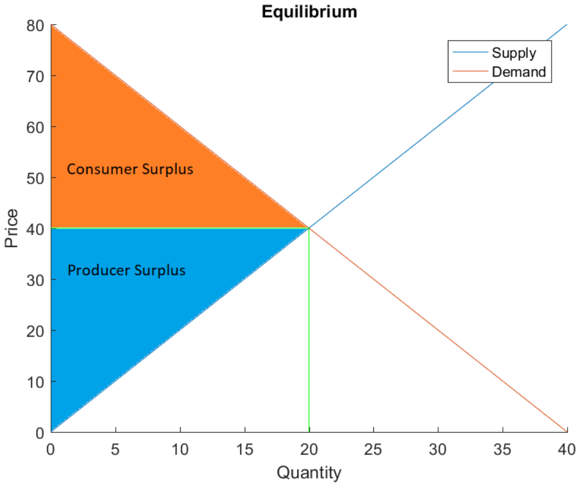
Bork interpretation

- While lobbying for the bill, John Sherman's main concern was with business behavior that prevents "full and free competition" and raises prices for consumers
  - Bork discussed the closure of fish, deli, and produce markets in favor of supermarkets
  - Supermarkets would not be a violation of the Sherman Act, since although supermarkets may force out smaller, specialized markets, they increase efficiency in a way that benefits consumers (i.e. cost savings can, in theory, be passed on to consumers)

Lande interpretation

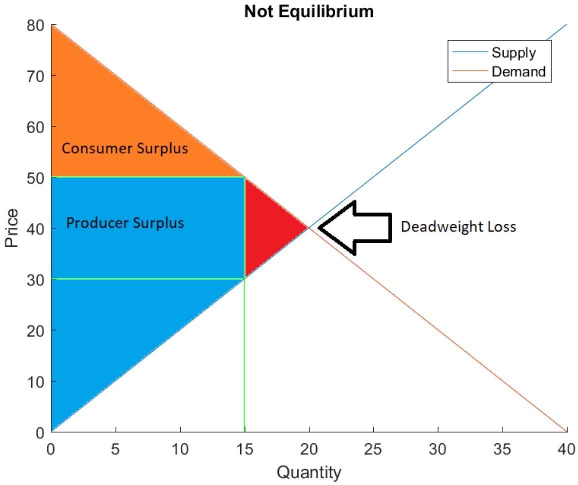
- Lande believed the intent of the Sherman Act was to prevent unfair wealth transfer from consumers to producers
  - As in, the writers of the act did not care about economic efficiency, but rather wanted a law that favored consumers over producers
  - It's important to note that economists in the 1890's did not have a solid grasp on how monopolies decreased economic efficiency

Differences between Bork and Lande: a graphical example



- Consider a market that is currently at its competitive equilibrium
- Now, suppose that a group of firms forms a trust and sets a higher price

Differences between Bork and Lande: a graphical example



- Bork believed Congress only cared about deadweight loss
- Lande believed Congress cared about the surplus that producers extract from consumers

Consequences of varying interpreations

- Under the previous example, both Borke and Lande believed the firm activity violated the Sherman Act
  - This is not always the case
- Consider a profit maximizing natural monopoly
  - Recall natural monopolies occur because they are more efficient than many smaller, competitive firms
  - Due to the market power of monopoly, the firm can price as a monopoly and extract more wealth from consumers (relative to competitive markets)
- Borke believed this natural monopoly is legal, since it's more efficient than competition
- Lande believed this natural monopoly is illegal, since it's still tranferring money from consumers to the firm

Early enforcement

Early enforcement of the Sherman Act: Peckham Rule

- Between 1897-1899, Supreme Court Justice Rufus Peckham wrote five opinions that became known as the **Peckham Rule** in antitrust cases
  - The rule stated that any business practices designed to restrict output were illegal
- “The natural, direct and immediate effect of competition is, however, to lower rates, and to thereby increase demand for commodities, the supplying of which increases commerce, and an agreement, whose first and direct effect is to prevent this play of competition, restrains, instead of promoting trade and commerce.”
  United States v. Joint Traffic Assoc. (1898)

Early enforcement of the Sherman Act: problems

- Early enforcement of the Sherman Act had many problems
  - Many businesses did not know if they were at risk of prosecution due to the vagueness of the law
  - Since the law was so general, enforcement was often left to the judge's discretion
  - Firms are crafty, and can often find ways to work around the Sherman Act, in ways where anticompetitive effects aren't as clear cut

Early enforcement of the Sherman Act: reaction

- The Sherman Act was almost immediately identified as flawed
- Teddy Roosevelt opposed all coalitions and proposed a solution
  - Create a list of all impermissable business practices
  - Give a license to businesses to do anything not on the list
- This proposed "solution" is also flawed

Early enforcement of the Sherman Act: Rule of Reason

- The **Rule of Reason** is a heuristic for enforcing the Sherman Act, and comes from the case of *Standard Oil Co. v. United States* (1911)
  - Every case under the Sherman Act must be viewed independently
  - Contracts or conduct to exclude rival firms was illegal; however, being a monopoly was not illegal per se
- Despite the new heuristic for determining antitrust, the Sherman Act was still criticized
  - Viewed as giving too much power to judges
  - Viewed as an attempt at fixing monopolization, as opposed to preventing it from occurring

Clayton Antitrust Act

Clayton Antitrust Act of 1914

- Unlike the Sherman Act that punishes observed monopoly behavior, the Clayton Antitrust Act explicitly outlaws specific behaviors
  - Price discrimination
  - Exclusionary practices
  - Mergers
- It was designed to prevent monopolies from forming, rather than dissolve existing monopolies
  - "An Act to supplement existing laws against unlawful restraints and monopolies, and for other purposes"

Price discrimination

- **Price discrimination** is the act of charging different prices to different customers, where the different prices do not reflect different costs of providing the good or service
  - The Clayton Act forbids price discrimination when "the effect of such discrimination may be substantially to lessen competition or tend to create a monopoly"
  - A seller is also not allowed to discriminate through indirect means (i.e. offering rebates to only one buyer)
- However, there are allowable ways to price discriminate
  - Discrimination based on cost savings is allowed (i.e. bulk discounts)
  - Good faith price discrimination is allowed: if a rival firm offers your current customer a lower price, you are allowed to match that price to that customer, without matching it for all other customers

Price discrimination

Also covers **monopsony**, a market with many sellers and a single buyer (i.e. NCAA)

- The NCAA is (one of) the only buyer of “amateur” athletic labor
- The NCAA members act like a cartel that can restrain competition and suppress wages: Blair and Whitman (2017)

Exclusionary practices

- **Exclusionary practices** are any activities that have an adverse effect on competition
  - Tying arrangements: only allowing a buyer to purchase product A, if they also buy product B
  - Requirement contracts: forcing a buyer to buy all requirements for a commodity from a single seller
  - Exclusive dealing: buyer agrees to not buy competing merchandise
  - Territorial confinement: buyer is not allowed to resell product outside of their territory

Mergers

- Recall that while the Sherman Act punishes monopoly behavior, the Clayton Act outright forbids specific monopoly behavior
  - Section 7 of the Clayton Act forbids mergers that significantly lessen the competition in the market
  - Applied to both horizontal mergers (i.e. Starwood Marriott)and vertical mergers (i.e. Amazon Whole Foods, AT&T Time Warner)
  - Activities that appear to lead to monopolies are forbidden
- In practice, IO economists conduct analysis to determine the market effects of mergers

Federal Trade Commission Act

Federal Trade Commission Act

Although the Sherman Act helped to establish antitrust laws, the public was dissatisfied with its implementation

- This led to the creation of the **Federal Trade Commission (FTC) Act**
  - Passed on September 26, 1914, the FTC Act established the **Federal Trade Commission**
- The FTC was given power to discipline unfair business behavior
  - “Unfair methods of competition in or affecting commerce, and unfair or deceptive acts or practices in or affecting commerce, are hereby declared unlawful”
  - The FTC received power to eliminate monopolies that persisted due to “unfair” practices
  - The FTC Act does not apply to foreign trade

Extraterritorial antitrust

Extraterritorial antitrust

Do antitrust laws apply to international commerce?

- The Webb-Pomerene Act (1918) exempted certain exporters' associations from certain antitrust regulations
  - Allows companies to avoid antitrust prosecution as long as they do not harm US consumers
- The Foreign Trade Antitrust Improvement Act (FTAIA) of 1992: anticompetitive conduct occurring overseas is outside the reach of antitrust laws, unless it directly harmed competition in the US
  - However, if the action restrains trade in the US, then foreign companies operating in foreign countries could still be liable for antitrust violations
  - *Hartford Fire Insurance Co. v. California* (1993): the courts ruled "it is well established by now that the Sherman Act applies to foreign conduct that was meant to produce and did in fact produce some substantial effect in the United States"

Enforcement

Enforcement

- There are two federal authorities who have different power to prosecute antitrust behavior
  - Antitrust Division of the Department of Justice (DOJ):
    can press both civil and criminal charges
  - Federal Trade Commission (FTC):
    cannot press criminal charges; however, they can implement the Clayton Act and assess the legality of mergers
- Formal procedures ensure the two offices coordinate effectively

DOJ

Table: Number of DOJ Antitrust Cases

Year	Number	Fortune 500
1987	17	0
1988	20	2
1989	15	5
1990	29	5
1991	36	6
1992	25	2
1993	29	6
1994	35	9
1995	25	2
1996	32	9
1997	26	4
Total	**289**	**49**

DOJ success

Table: DOJ courtroom success rate

Year	Percent won
1987	93%
1988	86
1989	83
1990	87
1991	91
1992	100
1993	92
1994	94
1995	90
1996	96
1997	90
Average	**91**

DOJ Antitrust Division

- The DOJ aims to deter potential offenders, rather than punish defenders
    - Punishments are often harsh
    - Criminal sanctions have become less common, relative to civil sanctions
- Results are mixed
    - The number of DOJ antitrust cases remains relatively constant
    - But a high DOJ success rate may deter future monopoly behavior

Criminal case stats

Table: Average Prison Sentences

Year	Number	Avg. Sentence (months)
1987	29	2.90
1988	12	2.08
1989	10	7.50
1990	13	7.62
1991	15	7.20
1992	4	8.50
1993	3	5.67
1994	2	3.50
1995	1	3.00
1996	3	8.67
Total	**92**	**5.20**

Criminal case stats

Table: Nominal Individual Fines

Year	Number	Avg.Fine	Total Fines
1987	42	$38,950	$1,635,900
1988	53	37,660	1,995,980
1989	54	53,560	2,892,240
1990	30	30,570	917,100
1991	37	75,840	2,806,080
1992	27	47,220	1,272,940
1993	45	41,510	1,867,950
1994	33	37,580	1,240,140
1995	25	48,440	1,221,000
1996	16	98,250	1,572,000
1997	17	73,350	1,246,950
Total	379	-	18,660,280

Criminal case stats

Table: Nominal Corporate Fines

Year	Number	Avg.Fine	Total Fines
1990	73	$310,400	$22,659,200
1991	55	319,500	17,572,500
1992	45	498,400	22,428,000
1993	64	631,700	40,428,000
1994	59	660,900	38,993,100
1995	32	1,256,900	40,220,800
1996	31	814,800	25,258,800
1997	30	6,797,700	203,931,000
Total	389	-	411,492,200

Criminal Case Stats

Table: Civil v. Criminal Cases

Year	Civil	Criminal	Both
1987	7	10	0
1988	10	9	1
1989	6	9	0
1990	13	16	0
1991	13	23	0
1992	11	14	0
1993	8	21	0
1994	25	10	0
1995	14	11	0
1996	24	6	2
1997	21	4	1
Total	152	133	4

Exemptions

Exemptions

- The main “goal” of all antitrust legislation is to protect consumer welfare
- Thus, there are some notable exemptions to antitrust laws
  - Labor
  - Agricultural co-ops
  - Regulated industries
  - Patents

Exemptions: labor

- Labor unions act as trusts by collectively striking, demanding higher wages, etc.
  - Although unions technically count as trusts, Section 6 of the Clayton Act declares "the labor of a human being is not a commodity or article of commerce"
- However, labor unions' powers are not absolute
  - If the union deviates from the interest of its members and attempts to drive a specific company out of business, the union may be prosecuted by antitrust laws

Exemptions: labor but not firms

However, firms that engage in anticompetitive practices in the labor market may be subject to antitrust laws

- No solicitation agreements
  - *US v Adobe et al (2010)*: civil class action lawsuit against several Silicon Valley companies for alleged "no cold call" agreements, which the plaintiffs allegged lead to the tech companies restraining the recruitment of each other's employees
- Non-compete agreements
  - Jimmy John's employment agreements include a "non-competition" clause, which requires workers to not work at one of the sandwich chain's competitors for a period of two years following employment
  - There's evidence these types of agreements supress wages of low-wage workers: Lipsitz and Starr (2019)

Exemptions: baseball

Baseball is the only sport that is exempt from antitrust

- *Flood v. Kuhn* (1972): prohibited free agency
- *Miranda v. Selig* (2017): MLB is allowed to restrain horizontal competition between franchises and depress minor league salaries

Exemptions: agricultural co-ops

- Agricultural co-ops are groups of farmers who collectively agree to set the same price for their perishable goods
  - The Clayton Act exempts co-ops due to the nature of agricultural industries
  - Co-ops are **NOT** allowed to collude with other co-ops
  - The Secretary of Agriculture oversees co-ops to ensure the prices are not set too high

Exemptions: regulated industries

- Some industries give rise to natural monopolies
  - If the industry is more efficient as a natural monopoly, enforcing antitrust laws does not increase welfare
- Thus, these monopolies are allowed to exist and are regulated by the government
  - Examples include telecommunications, utilities, and transportation

Exemptions: patents

- A **patent** is a legal claim to be the sole seller of a new, innovative product for 20 years
    - Patents are awarded to firms to encourage innovation, allowing the firm to have a 20 year monopoly in order to recoup the (substantial) cost of research and development
    - After 20 years, the technology becomes available to the public
    - Very common in pharmaceuticals