Law and Econ Handout 7: Antitrust Law and Patents: To Reduce or Increase Monopoly Power?

I. RECAP: Civil Law, Public Law, and Economic Development

A. To this point, we have found that there are economic rationales for legal systems that (i) give use and exclusion rights to producers and over land, (ii) make those rights tradable rights for persons who produce goods and services, (iii) make promises (contracts) enforceable, and (iv) deal with accidents effectively.

i. Communities that have such systems will tend to be far more prosperous than those that do not.

ii. Other minor extensions of these ideas, such as the right to inherit property can also reduce overuse tendencies, and adding the right to sell physical assets can also increase "liquidity" and encourage commercial enterprises (trading companies and manufacturing).

iii. I would argue that torts have the smallest effect of these four essential areas of law, but nonetheless it seems clear that for many settings, torts will affect investment and economic growth rates by affecting risks. If done well, risks will be reduced by tort law and investment both greater and directed in a more productive ways.

iv. The advantages of economic wealth and income imply that these essential strands of law may be regarded as "natural rights," and will tend to be more or less similar in prosperous societies.

B. We also have explored that law enforcement makes such laws affect behavior by changing expected costs and benefits. The behavior induced by the core areas of civil law encourages economic development.

i. Penalties of various sorts are what cause laws to affect behavior. When penalties are imposed by an effective enforcement system they change the rates of return from different kinds of activities by threatening fines or imposing other fees and/or penalties on persons who violate (renege) on their promises (contracts).

ii. Because of the survival advantages of prosperity, those societies with better laws and enforcement systems do better in the long run (survive and are copied) than those with less economically efficient laws.

C. We have also shown that the optimal level of crime enforcement is less than perfect.

i. Note that crimes will occasionally pay in such an environment

ii. (On the other hand, not everyone is a criminal on every possible criminal dimension because economic opportunity costs and internalized norms vary among individuals.)

iii. Once at the "optimal level," crime cannot be reduced further without paying more for reductions than one saves in reduced damages.

D. Although modern civil law systems have stood the test of time, there are other ways to solve the problems that civil law systems address.

i. One possible alternative is "private law," the use of contract to create mechanisms for contract enforcement and court proceedings (arbitration).

ii. For example, contracting and tort disputes can also be addressed through arbitration clauses in contracts. (See, for example, the American Arbitration Association.)

- Many tort problems can also be addressed through combinations of insurance policies and arbitration.
- For example, the Coase theorem implies that (in the absence of transactions costs) torts can e solved through (forward looking) contracts.
- (Although such contracts do not really address the problem of "strangers.")

iii. Law enforcement can be provided (and is often provided) through private security services.

E. Another possibility is public law, which can either refine existing customary or common law or create new law.

i. In the English-based common law systems, laws are interpreted and rulings are made by judges who determine whether conduct was consistent with public law or civil law.

ii. But public law's roots are political, rather than judicial.

F. Anti-trust law, the subject of the next two lectures, is an example of an area of new law created by legislation.

i. Although, civil law deals with problems similar to those of monopoly--essentially through non-enforcement of contracts that reduce competition--it does not address monopoly per se, nor specify steps for ending it.

ii. Antitrust law does.

iii. And although there are laws scattered throughou history that attempt to discourage efforts to "artificially" drive up prices, **Antitrust and competition laws took off, for the most part, in the nineteenth century**, largely in response to the creation of very large firms associated with industrialization and the organizations of large firms called trusts.

II. Economics and Origins of Antitrust Law in the US

A. Industrialization took off throughout the West during the nineteenth century. It was a "transformative" century in that entirely new products, professions, and lifestyes emerged gradually as new technologies, organizations, and forms of commerce were gradually developed over the century.

- As a consequence, relatively fewer people lived and worked on farms.
- As a consequence, more and more of what people used (consumed) was purchased from others, rather than made at home.
- As a consequence, more and more people "hire themselves out for wages."
- As a consequence, more and more people lived in towns and cities.

B. To a substantial extent the industrial revolution was the result of revolutions in materials (iron and steel) and machinery that could be constructed with them (steam engines, rail roads, wire, etc.)

- In many cases, there were substantial (new) economies of scale in production that allowed a single efficient sized firm to service a much larger market than earlier (smaller) firms.

- The new production methods were often more “roudabout” in that there were more steps in the production process and more kinds of machines (capital) was used to produce the new materials and products.

C. Exploiting **the new technologies often generated new very large enterprises**, which in the US included many firms that operated across state lines.

i. The economies of scale in many of these industries (especially railroads and steel) created relatively concentrated industries within individual states and in some regions of the country.

ii. The new firms were often innovators--creating new products and services, and new methods of production--often ones that were completely different from those that had been “typical” for many centuries.

- As their products displaced those of many smaller enterprises, naturally those losing their businesses were concerned, and protested.

iii. Moreover, as the number of businesses serving regions of the country diminished, consumers (in firms purchasing intermediate goods and services) had less and less bargaining power.

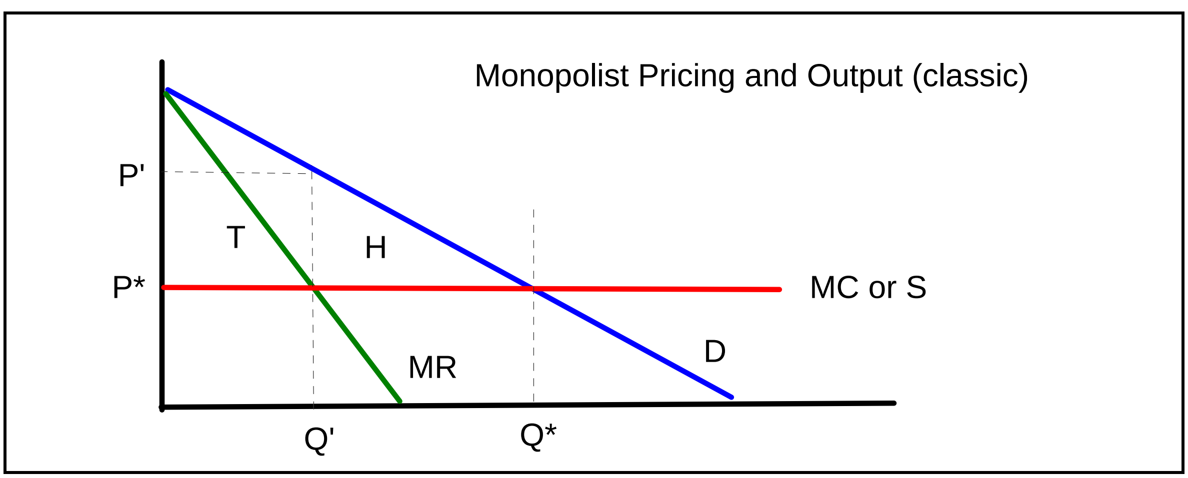
- They had to accept the price of the new dominant firms or do without--which often meant going out of business for small retailers and farmers. Again, those affected protested and asked local, state, and national governments to intervene.

iv. In many industries (steel, oil, sugar, powder etc), groups of large firms joined forces (formed “**trusts**” or **cartels**) to control pricing and production within regions of the country.

D. The extent to which monopolies affect consumer welfare or economic efficiency has been debated for years, but it seems clear than in many cases, monopolies can reduce both consumer welfare and economic welfare.

E. Illustration of the Effects of a Monopoly Cartel

i. In the diagram below, it is assumed that in the absence of a cartel or other barrier to entry, the market would be a competitive one and price would be P* and Q*.



ii. If a single firm or group of firms controls output, they would choose to produce output Q' (the Q where MR = MC) which would command a price of P'.

iii. In this case, areas T and H are lost to consumers. (Consumer surplus falls by rectangle T + triangle H.)

iv. In the classic case, firms earn rectangle T of profit and there is a deadweight loss of triangle H.

- Triangle H is named after Arnold Harberger (1954), who was a pioneer in econometric estimates of the losses from monopoly.
- The rectangle T is named after Gordon Tullock (1967), well known for his rent-seeking theory of losses from monopoly.
- In the analysis of Gordon Tullock, firms compete to obtain monopoly privileges until they earn just an ordinary return on their "monopolization investments," which implies that T is not gained as profits, but lost through new costs of firms competing to become monopolists.
- The same profit rectangle has also been argued to be dissipated by cartel members, who strive to increase their market share by competing in non-price aspects of the services sold in the market (quality and convenience). (See Richard Posner's 1974 analysis.)

v. Not all monopolies or cartels generate these losses (reduced social net benefits), but the basic economic support for antitrust law rests on such cases and similar ones from more complicated models.

- Counter examples are cases in which a monopolist exists, because they are innovators and successfully "win" markets by providing better services to consumers.
- (In general, but not always, antitrust law recognizes this distinction and punishes only monopolists and cartels that reduce social net benefits, e.g. that are anti-competitive.)

vi. Historically, the case against monopoly was often made by consumers and other purchasers of monopolized services, because of their own losses (H+T). **Obviously, the median voter is normally a consumer, rather than a monopolist and so tended to favor antitrust actions that would reduce his/her prices.**

- (It bears noting that voters are also employees and shareholders of monopoly firms, and these interests will also influence many voters.)

F. The first national antitrust law adopted in the US was the **Sherman Antitrust Act of 1890**. (Named after senator John Sherman, an Ohio Republican, who was the main author of the bill.)

i. The **Sherman Act** essentially makes cartels and other methods of monopolization illegal.

- "Section 1 prohibited contracts, combinations, and conspiracies in restraint of trade; section 2, monopolization and conspiracies and attempts to monopolize. Other provisions of the act imposed criminal sanctions for its violation but also authorized injunctive suits by the Justice Department and treble-damage suits by private parties."
- Posner, Richard A. (2010-10-22). *Antitrust Law*, Second Edition (Kindle Locations 773-775). University of Chicago Press. Kindle Edition.

ii. The current (amended) wording of the Sherman Act can be found at: http://www.antitrustupdate.com/statutes/shermanact/st-sherman1-4.html

iii. Like most areas of public law. How to apply the law was not entirely clear, and so it was left up to the courts to work out how to apply the law to specific cases.

- Thus, anti-trust law **is partly a product of the legislature and partly a product of court decisions**, a few of which we'll look at later in this section.

iv. Concerns over whether the Sherman Act was being applied in a reasonable (politically reasonable) manner led to two additional anti-trust acts: The FTC (Federal Trade Commission) Act of 1914, and the Clayton Act also in 1914.

- The **FTC act** created an new federal agency and gave it responsibility for enforcing antitrust law. It forbade "unfair methods of competition" including "tie in" sales and "exclusive" dealing.
- The FTC acts exempts banks, airlines, common carriers, from its rules. (why?)
- FTC decisions were to be final unless appealed to the Supreme Court.
- The amended text of the FTC act can be found at: http://www.stolaf.edu/people/becker/antitrust/statutes/ftc.html
- The **Clayton Act** forbade price discrimination, stock acquisitions, interlocking directorships, which could be used to coordinate pricing and output decisions, but were not monopolies nor trusts.
- The Clayton Act, like the Sherman Act, also allows those who sue for damages to recover triple damages.
- .Sec 17 of the Clayton Act **exempts** labor unions and (non-profit) farm cooperatives from antitrust suits.
- (Baseball was exempted after a 1922 Supreme Court decision.) See http://www.nytimes.com/1994/12/24/sports/baseball-antitrust-exemption-history.html for a nice overview of that decision.
- The amended text of the Clayton Act can be found at: http://www.stolaf.edu/people/becker/antitrust/statutes/clayton.html

v. These three laws remain the main legislative basis of anti-trust law suits and criminal actions.

- In 1950, these three acts were augmented by the Celler-Kefauver Act, which addresses mergers that may reduce competition.
- Antitrust acts after 1914 were often formally amendments of the Sherman, FTC, or Clayton Acts and so normally appear in the text of the contemporary (amended) texts of these acts.

vi. The main civil remedy was a provision for triple damages for a firm that successfully wins an anti-trust case.

- Note that triple damages creates strong incentives for damaged (and other) firms to launch civil suits charging monopoly practices.

- (This provision could be "efficient" in the sense of the punitive damages of tort cases, if only a fraction of monopoly damages are every brought to court, otherwise it simply encourages more law suits.)

vii. During the 1955, 1974, and 1990, the various criminal penalties (fines) for anti-trust law violations were increased, although the **triple (treble) damages** provisions were kept.

- Such criminal proceedings could be initiated by the FTC or the Department of Justice.
- Richard Posner's book on Anti-trust law includes a table that list the number of anti-trust cases brought by the Department of Justice. See his Table 1.
- That table shows that after the Sherman Act was adopted, relatively few cases were brought by the Justice Department (aka DOJ), just 15 in the first ten years, 42 in the next ten years, and 126 between 1910 and 1919.
- More and more cases were brought each decade except during the Great Depression, peaking in the 1980-1989 period (Reagan Presidency) with 741 cases, followed by 609 cases in 1990-1999 (Clinton Administration).
- The cases are roughly 2-fifths civic cases and 3-fifths criminal cases.
- Average fines have been increasing through time in nominal terms, rising from about 20K during the 1910-1929 period to about 325K in the 1970-1989 per iod, and then rising dramatic during the 1990s to nearly 5 million dollars. (See Posner's table 2).

III. Some Famous Antitrust Cases

A. Antitrust law evolved through a long series of court decisions, especially those made by the Supreme Court.

B. There are essentially two lines of argument;

- (1) that some practices and levels of concentration are "per se" in violation of the antitrust acts and so illegal.
- (2) that only practices that "unreasonably constrain competition or restrain markets" are illegal. These vary case by case according to what is "reasonable" for firms in the market of interest.

i. Both interpretations came to be more and more influenced by economic arguments, with the result that the central issue often became (i) the extent of market concentration and (ii) whether a particular practice increased or diminished competition (and/or social net benefits.)

ii. Richard Posner (2010-10-22). *Antitrust Law*, Second Edition Provides a lengthy defense of the "reasonable practices" view of proper applications of anti trust law.

- [Posner is a law professor at the University of Chicago and a judge on the 7th US Court of Appeals in Chicago.]
- [Economists who specialize in "industrial organization" often earn large fees to appear in monopoly cases as "expert witnesses."]

- This is not to say that the court always gets it right (economically), but it is to say that the trend is toward a "reasonability" standard (anti-competitive standard), rather than a per se standard.

iii. Other economists and lawyers support "per se" laws because they are clearer and less subject to manipulation in court.

- (See D. Mueller (1996) for a somewhat less optimistic take on US antitrust law that favors using "per se" rules in most cases.)

C. A sense of how the Sherman act affected antitrust law (changed it from traditional common law practices) can be taken from the Appeal to the Supreme Court in the Standard Oil Case. [Source http://www.law.cornell.edu/supct/html/historics/USSC_CR_0221_0001_ZS.html]

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- The debates in Congress on the Anti-Trust Act of 1890 show that one of the influences leading to the enactment of the statute was doubt as to whether there is a common law of the United States governing the making of contracts in restraint of trade and the creation and maintenance of monopolies in the absence of legislation.
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- While debates of the body enacting it may not be used as means for interpreting a statute, they may be resorted to as a means of ascertaining the conditions under which it was enacted.
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- The **terms "restraint of trade," and "attempts to monopolize," as used in the Anti-Trust Act, took their origin in the common law**, and were familiar in the law of this country prior to and at the time of the adoption of the act, and their meaning should be sought from the conceptions of both English and American law prior to the passage of the act.
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- The original doctrine that all contracts in restraint of trade were illegal was long since so modified in the interest of freedom of individuals to contract that the contract was valid if the resulting restraint was only partial in its operation, and was otherwise reasonable.
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- The early struggle in England against the power to create monopolies resulted in establishing that those institutions were incompatible with the English Constitution.
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- **At common law, monopolies were unlawful because of their restriction upon individual freedom of contract** and their injury to the public and at common law, and contracts creating the same evils were brought within the prohibition as impeding the due course of, or being in restraint of, trade.
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- At the time of the passage of the Anti-Trust Act, the **English rule was that the individual was free to contract and to abstain from contracting and to exercise every reasonable right in regard thereto, except only as he was restricted from voluntarily and unreasonably or for wrongful purposes restraining his right to carry on his trade**. Mogul Steamship Co. v. McGregor, 1892, A.C. 25.

D. To give you a sense of the factual base and logic of antitrust cases, we'll next discuss a few famous cases. Below are 5 famous cases.

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i. **Standard Oil** (the appeal brief is available at: http://www.law.cornell.edu/supct/html/historics/USSC_CR_0221_0001_ZS.html

a. J. D. Rockefeller created Standard Oil in 1870 and largely through that firm became the worlds richest man and America's first billionaire by corning the US market for refined oil products and also through large oil and pipeline holdings. He also managed to obtain preferential rates for rail road shipping. In 1890, it controlled 88% of the refined product market, and continued to increase it share of production and sales..

- Rockefeller and his major partners invested a good deal of their dividends in Railroad stocks, which may account for his ability to gain preferential rates for shipping relative to other refined oil producers.
- The company began in Ohio, where the first American Oil boom occurred.
- In 1885, SO moved from Ohio to NY and then on to NJ, because of its more lenient corporate law
- It produces so much refined product, that it exceed US demand and created major export markets and SO outlets in Europe and Asia.

b. In 1909, the US Justice Department sued SO and ordered it to be broken into 34 companies.

- "Rebates, preferences, and other discriminatory practices in favor of the combination by railroad companies; restraint and monopolization by control of pipe lines, and unfair practices against competing pipe lines; contracts with competitors in restraint of trade; unfair methods of competition, such as local price cutting at the points where necessary to suppress competition; [and] espionage of the business of competitors, the operation of bogus independent companies, and payment of rebates on oil, with the like intent."
- "The evidence is, in fact, absolutely conclusive that the Standard Oil Company charges altogether excessive prices where it meets no competition, and particularly where there is little likelihood of competitors entering the field, and that, on the other hand, where competition is active, it frequently cuts prices to a point which leaves even the Standard little or no profit, and which more often leaves no profit to the competitor, whose costs are ordinarily somewhat higher."

c. In May 1911, the US Supreme Court upheld the lower court judgement and declared SO to be an "unreasonable monopoly," and ordered it to be broken up into 34 firms.

- Among the larger firms created are the present day Exxon, Chevron, Amoco, and Mobil Oil.
- SO (ESSO) continues to operate in Europe and many other parts of the world.
- (Surprisingly, total share prices rose after the breakup, making Rockefeller even richer!)
- By the time of the break up SO's share of refined product production had fall from around 90% in 1900 to around 65% in 1911.

ii. **US Steel**

a. US Steel was founded in 1901 in Pittsburgh by Andrew Carnegie, JP Morgan, Charles Scwab, and E. H. Gary. It was essentially a conglomeration of steel and steel product producing companies.

b. It grew to be the worlds first company worth more than a billion dollars. Mergers and aquisitions continued and it began to look to many as if US Steel completely dominated the market for steel and steel products.

c. US Steel built the town/city of Gary Indiana in 1906, the site of one of the worlds largest steel mils.

d. During its formative period the company was dominated by Gary (its CEO), who exercised influence throughout the American steel industry through his famous "Gary dinners," **attended by the heads of major steel producers; out of the meetings came agreements on cooperative pricing and marketing that stabilized a once wildly fluctuating market.** Gary opposed "unreasonable" competitive practices as well as labour organizers.(Brittanica.com)

e. From its inception it was the dominant steel producer in the US, with a market share of well over 50%. It's market share remained more or less flat or shank somewhat between 1901 and 1911, although industry output increased by 25% during that period. (A. Cotter 1916: 224)

f. In 1911, the department of justice began antitrust proceedings against US Steel.

g. In 1920, the US Supreme Court decided that US Steel was **not a monopoly** and so its conduct did not come under the Anti-Trust laws.

- Held that **the power attained by the United States Steel Corporation, much greater than that of any one competitor, but not greater than that possessed by them all, did not constitute it a monopoly**.
- The fact that a corporation, alleged to be an illegal combination, during a long period after its formation, persuaded and joined with its competitors
- Page 251 U. S. 418
- Its efforts, **at times successful and at times not, to fix and maintain prices in violation of the Anti-Trust Act, dos not warrant present relief** against it if the illegal practices were transient in purpose and effect, were abandoned before the suit was begun because of their futility and not for fear of prosecution, and have not since been resumed, and if no intention to resume them or dangerous probability of their resumption is shown by the evidence. Pp. 251 U. S. 444 et seq.

- Purpose and effect of the Steel Corporation's acquisition of control of the Tennessee Coal & Iron Company considered in the light of President Roosevelt's prior approval of the transaction and his testimony concerning it. P. 251 U. S. 446.
- Upon the question whether the power possessed by the Steel Corporation operated per se as an illegal restraint, held that testimony of its officers**, its competitors, and hundreds of its customers to the effect that competition was not restrained and that prices varied or remained constant according to natural conditions** must be accepted as clearly outweighing a generalization advanced by government experts that constancy of prices during certain periods evinced an artificial interference. P. 251 U. S. 447.
- An industrial combination short of a monopoly is not objectionable under the act merely because of its size -- its capital and power of production -- or merely because of a power to restrain competition, if not exerted. Pp. 251 U. S. 447, 251 U. S. 450 et seq.

iii. **Alcoa**

a. Was founded as the Pittsburgh Aluminum Co by a group of young entrepreneurs (Hall, Cole, Hunt, and others) in 1888, shortly after Charles Hall discovery of a new method for recovering Aluminum from Bauxite ore in 1886, based on a patent for the process (finally issued in 1889.)

b. It expanded its operations to include fabrication as well as recovery of aluminum from ore in 1890.
- Between 1888 and 1897, the price of aluminum fell from 8$/lb to 36 cents/lb. (http://www.alcoa.com/usa/en/alcoa_usa/history.asp)
- Because of its patent an innovations in production and fabrication, Alcoa had a virtual monopoly on US production and produced 60% of world output. (http://www.alcoa.com/usa/en/alcoa_usa/history.asp)

c. In 1907, the company was renamed the Aluminum Company of America (ALCOA).

d. Raising funds for expansion required selling shares, and the Mellon family gradually became the largest share holder--controlling about a third of Alcoa's shares.

e. In 1937, the FTC launched an antitrust suit against Alcoa.
- The Justice Department believed that Alcoa had violated the Sherman Act on three counts: making restrictive covenants, engaging in alleged acts of unfair competition and participating in foreign cartels. (http://www.alcoa.com/usa/en/alcoa_usa/history.asp)
- The FTC believed Alcoa tried to monopolize bauxite, attempted to monopolize the water power of the world, dominated and controlled the foreign market for aluminum in the US, and engaged in injurious price cutting.
- Alcoa won the trial on all 130 counts.
- But the Government won the appeal.
- Review by the Supreme Court was impossible, since four of the justices had been involved in prior antitrust suits against Alcoa.

f. A special act of Congress was necessary to give the 2nd Circuit Court of Appeals the weight of a Supreme Court opinion in this matter. In 19444, the court found Alcoa controlled over 90% of the US market for aluminum ingot. **This proportion alone was sufficient to support a violation of the Sherman Act, regardless of intent to monopolize**.

g. The decision was made by **Judge Learned Hand**, included the following:

- "It was not inevitable that it [Alcoa] should always anticipate increases in the demand for ingot and be prepared to supply them. **Nothing compelled it to keep doubling and redoubling its capacity before others entered the field. It insists that it never excluded competitors; but we can think of no more effective exclusion than progressively to embrace each new opportunity as it opened,** and to face every newcomer with new capacity already geared into a great organization, having the advantage of experience, trade connections and the elite of personnel."
- "90 percent is enough to constitute a monopoly; it is doubtful whether 60 to 64 percent would be enough; and certainly 33 percent is not."
- [Some lawyers and economists regard this characterization to be the "per se" rule as oppose to the "rule of reason" interpretation of monopoly as "unreasonable restraint of trade or competition." The debate between the "per se" rule and the "rule of reason" approach played an important role in antitrust suits for the rest of the 20th century.]
- In 1947, Alcoa made the argument to the court that there were two effective new entrants into the aluminum market – Reynolds and Kaiser – as a result of demobilization after the war and the government's divestiture of defense plants. In other words, the problem had solved itself and no judicial action would be required.
- On this basis, the district court judge ruled against divestiture in 1950, but the court retained jurisdiction over the case for five years, so that it could look over Alcoa's shoulder and ensure that there was no re-monopolization.

iv. **ATT**

a. Graham Bell invented the telephone in 1875 and received two patents on the telephone in 1876.

b. These were used to launch the Bell Telephone company in 1877.

c. Service expanded fairly rapidly with the first calls between Chicago and NY occurring in 1892, and the first transatlantic calls in 1927.

d. Because of its near monopoly over telephone service in the US, AT&T was the target of many antitrust actions over the decades, although settlements of various kinds were normally worked out, which left the company in one piece.

e. In 1974, the Department of Justice launch an anti trust suit against AT&T, which was finally decided in 1984, and caused the break up of the "Bell System" into 7 different regional telephone firms and a long distance provider (AT&T)..

- The breakup lead to a surge in competition in both long distance service and in telephone technology.
- (Many of the new firms were allowed to merge 15-20 years later, which reduced the 7 to two or three by 2012.)

v. **Microsoft**

a. Micro-soft was founded in April of 1975 by Bill Gates and Paul Allen in Alburquerque NM.

b. Microsoft originally sold versions of Basic, at that time the main programing language used on personal computers (PCs)

c. In 1979, the company moved to Bellevue, Washington outside of Seattle (and dropped the hyphen in its name).

d. In 1980 Microsoft formed a partnership with IBM that allowed them ot bundle Microsoft's operating system with computers that IBM sold, with a royalty on every unit sold. IBM's PC rapidly became the worlds most purchased personal computer.

e. The operating systems were updated and modified during the 1980s and a new more user friendly operating system interface was created in the 1990s. Windows rapidly gained a 90% market share of the world's personal computers, while IBM's initial success in the PC market fade with the entry of a broad range of new companies selling computers based on the same Intell chipsets and microsoft operating system.

- The operating system sold was acquired from ATT through a distribution liscence and modified by another firm to serve as an operating system for several chip based platforms.
- At about the same time, Microsoft created the first version of its word processor Word.

f. In 1995, shortly after the release of Windows 95, the company secured a license to market another company's web browser (Spyglass) as its own product to be called Explorer.

- As the case of its operating system, it subsequently went on to invest heavily in modifications and extensions of that program.
- It decided to bundle the browser with its operating system to secure a fast penetration into the browser market (and to avoid paying royalties to Spyglass).

g. Microsoft was the focus of antitrust actions in 1993 by the FTC and in 1994 by the DOJ, but settled the latter by agreeing not to tie the purchase of windows to purchases of its other products (Word, Excel etc).

h. In 1998, the Department of Justice filed an antitrust suit against Microsoft under the Sherman Antitrust act by bundling Explorer with its operating system.

- The first round of trial took place between 1998 and 1999.
- The judge's findings of the fact, suggested that microsoft was a monopolist and had conspired to become a monopolist.
- (18) Currently there are no products, nor are there likely to be any in the near future, that a significant percentage of consumers world-wide could substitute for Intel-compatible PC operating systems without incurring substantial costs. Furthermore, no firm that does not currently market Intel-compatible PC operating systems could start doing so in a way that would, within a reasonably short period of time, present a significant percentage of consumers with a viable alternative to existing Intel-compatible PC operating systems.
- (33) Microsoft enjoys so much power in the market for Intel-compatible PC operating systems that if it wished to exercise this power solely in terms of price, it could charge a

price for Windows substantially above that which could be charged in a competitive market. Moreover, it could do so for a significant period of time without losing an unacceptable amount of business to competitors. In other words, Microsoft enjoys monopoly power in the relevant market..

- (36) Microsoft's dominant market share is protected by the same barrier that helps define the market for Intel-compatible PC operating systems. As explained above, the applications barrier would prevent an aspiring entrant into the relevant market from drawing a significant number of customers away from a dominant incumbent even if the incumbent priced its products substantially above competitive levels for a significant period of time. Because Microsoft's market share is so dominant, the barrier has a similar effect within the market: It prevents Intel-compatible PC operating systems other than Windows from attracting significant consumer demand, and it would continue to do so even if Microsoft held its prices substantially above the competitive level.
- (59) That Microsoft's market share and the applications barrier to entry together endow the company with monopoly power in the market for Intel-compatible PC operating systems is directly evidenced by the sustained absence of realistic commercial alternatives to Microsoft's PC operating-system products.
- (138) Over the months and years that followed the release of Internet Explorer 1.0 in July 1995, senior executives at Microsoft remained engrossed with maximizing Internet Explorer's share of browser usage. Whenever competing priorities threatened to intervene, decision-makers at Microsoft reminded those reporting to them that browser usage share remained, as Microsoft senior vice president Paul Maritz put it, "job #1."
- (379) Not only did Microsoft prevent Navigator from undermining the applications barrier to entry, it inflicted considerable harm on Netscape's business in the process. By ensuring that the firms comprising the channels that lead most efficiently to browser usage distributed and promoted Internet Explorer to the virtual exclusion of Navigator, Microsoft relegated Netscape to more costly and less effective methods of distributing and promoting its browsing software.

i. The findings of the first court were appealed and so final judgment were not determined until 2007.
   - No effort was made to reduce Microsoft's monopoly position or to make its operating system, essentially a common carrier.
   - Instead: "Accordingly, besides assuring cessation of Microsoft's unlawful activity and preventing its recurrence, the over-arching objective of the Final Judgments are to create conditions in the market that afford non-Microsoft middleware opportunities to compete comparable to those that Microsoft denied to Netscape and Sun.(4) The litigation, however, did not afford a basis for extinguishing Microsoft's Windows monopoly position or for reducing it by a particular amount."

j. [All the above quotes on the microsoft case are from the DOJ website.

IV. Patents, Government Sponsored Monopolies

A. Another area of economic regulation which goes in the **opposite direction** analyzes rationales for granting monopoly power to inventors and other creative persons through **patents** and **copyrights** of one kind or another.

i. Patents are far older than antitrust law. For example, establishing a patent office is mentioned in the US constitution--probably because of Ben Franklin, an important inventor and influential statesman of that period.

- Similar monopoly power is created through copyright and trade mark protection.
- The issue for this section of the course is the extent to which there is an efficiency rationale for such policies--eg for creating some kinds of monopoly privileges.
- Prior to 1800, kings used to sell monopoly privileges or give them to their supporters in exchange for services rendered. These privileges were of ten called "patents."

ii. In contrast to research on monopolies, the economics of patents continues to be an active field of research and legal reform.

- This is partly because of the increase in innovation rates during the past twenty years (spurred partly by the pursuit of patents under existing patent laws).
- It is also because ideas many controversies about intellectual property rights have been generated by the recent developments in computer software and web-based technologies and distribution systems.
- Those industries argue that many folks around the world have simply "stolen" (copied) their ideas.

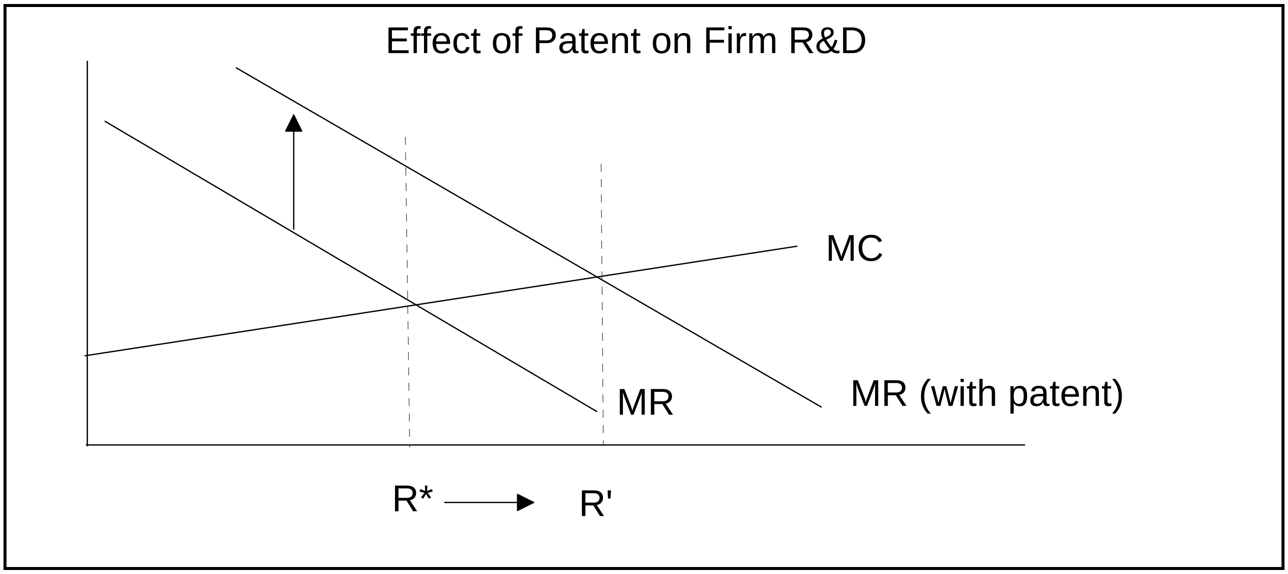
B. To what extent can one or should be able to own an idea?

- It is important to note that not all ideas can be patented or copyrighted.
- For example, one cannot get a patent on a house design, menu, or text book.
- One can copyright those things, but the basic ideas can be freely copied by other architects and writers--if they are able to do so.

i. One of the key issues in patent law -- or intellectual property right law -- are dynamic gains (increased innovation) vs static losses.

- (Note that this is similar to Schumpeter's defense of monopolists as being more innovative than competitive firms. His work stresses innovation in a manner that mainstream neoclassical work has not until a decade or two ago.)

ii. Ideally, patent policies trade off losses associated with monopoly power (often called static losses) with the advantages of faster rates of innovation (often called dynamic gains).



iii. Note that the increase in R&D undertaken is affected by the existence of a patent, but also by the breadth and time period during which the firm will obtain a monopoly.

a. The longer the patent, the higher MR from R&D tends to be and the more R&D a firm will undertake.

b. Similarly, the broader the patent granted, the higher the MR from R&D and the more R&D a firm will tend to undertake.

c. Use a two by two game to show that little innovation would take place in a setting in which new ideas or products are hard to develop but easy to copy. (The two strategies in your game should be Invest in R&D or not/Copy. Note the the equilibrium is the non/Copy strategy in such games.)

iv. When more than one firm or inventor pursues the same type of patent, the result is a contest in which both firms or inventors have incentives to invest even more in the R&D in the short run, because only fhe first person to invent the "machine" or "process" to be patented gets the benefit of his or her or their R&D efforts.

a. One can model patent contests using games that are very similar to the stealing game and common contests.

- The value of monopoly profits associated with a patent is essentially a prize in an innovation context analogous to a rent-seeking contest.
- Rivals will invest in R&D to win that prize.

b. And, by do so, some part of the prize is dissipated by the competitive efforts.

- This deadweight loss should be added to that associated with the monopoly itself to assess the cost of a patent system.
- Illustrate this competitive R&D dilemma with a 3x3 game matrix. (The strategies shold be different degrees of R&D effort with higher probabilities of inventing the targetted good or production method and therefore higher expected profits. Note that R&D increases in such cases, possibly to higher than "socially optimal" levels.)

v. However, in contrast to a stealing or rent-seeking game, R&D games generate some spillover benefits for others outside the game, who will benefit from the innovations.

a. The benefits are the advantages (CS + profit) generated by improved or new products.

b. Patents encourage more rapid innovation which increases the present value of innovations by shifting them forward in time.

- (Shankerman 1998 and Lanjouw 1998 estimate the returns from R&D to be from 15-25%.)
- See Gallini (2002) and Jaffe (2000) for nice surveys on the economics of patents.
- See Lerner (2001) for an empirical analysis of the effects of changes in **patent law scope** on rates of innovation. (He finds an inverted U shape, which is consistent with there being an optimal policy, if one wants to maximize innovation rates.)

vi. It bears noting that an "overly" broad patent can actually discourage innovation in related applications, by allowing patent holders to block future innovation by other inventors or firms.

- For example, a really broad patent might have allowed Xerox to block all future developments of laser printers and scanners.
- Apple has recently been able to block Samsung from selling cell phones with a similar shape to their I-phones (even thought the Samsung phones were other wise quite different inside.)
- One of the issues in fast moving areas of technology such as micro processors, computers, and cell phones is whether patents on balance encourage or discourage innovation.

C. An idealized patent system would optimize scope and time considerations to maximize the net benefits from innovation.

- In some cases, no patents should be issued. (The ideas may be obvious or "in the wind.")
- In other cases, rather long patents with broad protections should be issued. (The idea may be a major breakthrough or taken many years of creative work and testing to produce.)
- In the most common cases, somewhat narrow rights and relatively short times (long enough to recoup and modestly profit from R&D investments) should be the rule.

D. Patent protections and patent enforcement have become more extensive in the past two decades.

- For example, in 1994, patent protection was extended from 17 to 20 years.
- Patent protection has been extended to software, biotechnology, and business methods.
- A special court of appeals (federal) was established for patent infringement cases.
- For a list of patent cases and overview of patent law see: https://en.wikipedia.org/wiki/List_of_United_States_patent_law_cases.

E. Thought Questions

- Should every idea be patentable? Why or why not?

- How long should a patent last? One year, seven, seventy, or forever? Explain your reasoning.
- If patents artificially produce monopolies, how are they different from the monopolies addressed through anti-trust policies (or are they)?