



## *Economic Regulation and Antitrust Activity*

Business Behavior, Public policy, and  
Government Regulation

Regulating Natural Monopolies

Alternative Theories of Economic  
Regulation

Antitrust Law and Enforcement

Competitive Trends in the U.S. Economy

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## *Market Power*

- **The ability of a firm to raise its price without losing all its sales to rivals**
  
- **Facing a downward sloping demand curve**
  - ❏ → has control over price
  - ❏ → has some market power
  - ❏ → Can restrict output
  - ❏ →  $MB$  of the final unit produced  $> MC$
  - ❏ → social deadweight loss
  
- **Counter example: Perfect competition.**

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## *Monopolies Enhance Market Power*

- **Monopolies**
  - ❏ insulated from competition
  - ❏ not as innovative as competitive firms
  
- **because of their economic importance,**
  - ❏ monopolies may exert influence on the political system,
  - ❏ to protect and enhance their monopoly power

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## *Government Regulation*

- **Three kinds of policies to alter or control firm behavior**
  - ❏ **Social regulation**
    - Consists of measures designed to improve health and safety
    - Ex: Unsafe work condition, dangerous product
  - ❏ **Economic regulation**
    - Controls the price, the output, the entry of new firms, and the quality of service in industries
      - Monopoly appears inevitable → natural monopolies
  - ❏ **Antitrust activity**
    - Attempts to prohibit firm behavior that tries to monopolize markets

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## 新聞: 聯合漲油價? 公平會查 消基會促中油公開盈虧

- 公行認高。油，油，合次最刑供絡內，同聯上，徒大聯國相態與犯期兩思響，幅型雖續有化意影響新，連的石的，但的為為下塑訊價，爭行視以臺資調步競台仍年及價幅同平聯但三油調同有公是，臨中遞，沒反定同面，傳步然違確不能議，同雖是若法可決式成，能，手也月方形，漲這調幅責年公格需，開同負三、價供再為展，十先整及，塑認案時元九事調格，臺日併同億會以次價，與昨將「一平，廿場油會，的罰公者續市，中平為定將業連品，格油本錄
- 業連品，格油本錄
- 格油本錄
- 消基會促中油公開盈虧

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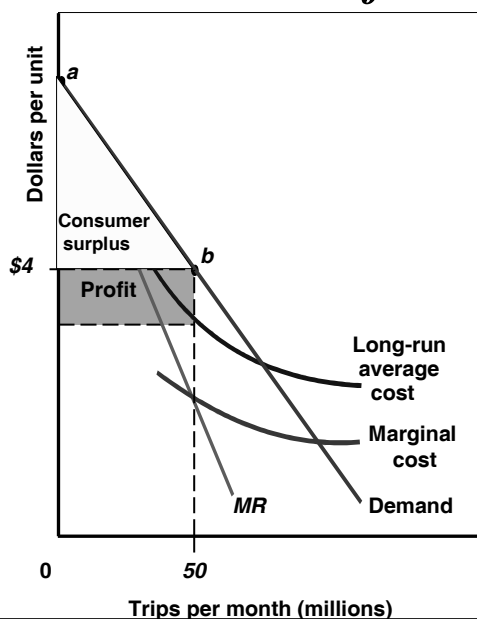
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## Regulating Natural Monopolies

- Because of economies of scale,
  - ▣ downward-sloping LRAC curve over the range of market demand
- The lowest AC is achieved when one firm serves the entire market
- Natural monopolies usually face huge capital costs
- See next slide

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## Natural Monopoly Profit Maximization



The unregulated monopolist will maximize profit  
 →  $MR=MC$   
 → 50 million riders per month paying \$4 per trip

Profit:  
 → blue-shaded rectangle

Consumer surplus:  
 → abc triangle

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### *Problem of Unregulated Profit Maximization*

- **Resulting price-output combination is inefficient in terms of social welfare**
- **Consumers pay a price that far exceeds the MC of providing the service**
- **Government could increase social welfare by forcing the monopolist to expand output and lower the price**

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### *Government Regulation*

- **Government can**
  - **operate the monopoly itself**
    - urban transit systems
    - called public utilities
  - **regulate a privately owned monopoly**
- **We will focus on government regulation**
- **In regulating natural monopolies, the price-output combination captures the most attention**

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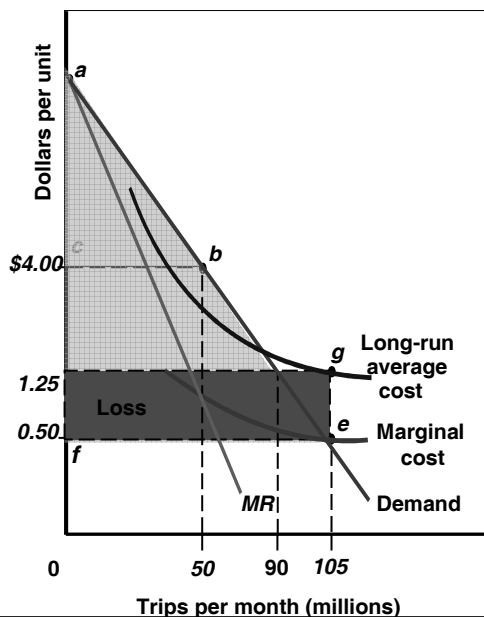
## Price Equal to Marginal Cost

- Suppose government regulators require the monopolist to produce the level of output that is allocatively efficient
  - $\rightarrow$  MB of consumers = Price = marginal cost
- See next slide

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## Price Equal to Marginal Cost



The allocatively efficient combination: *e*,  
 MB  $\rightarrow$  Demand curve  
 MB of last good = Price = MC

consumer surplus,  
 increases from *abc* to *aef*

But AC of supply 105 million trips is  
 \$1.25 (point *g*)

Monopolist suffers a loss of \$0.75 per  
 rider, or about \$80 million per month  
 shown by the pink-shaded loss rectangle.

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## *Price Equal to Marginal Cost*

- **In the long run, the monopolist would go out of business rather than continue suffering such a loss**
- **How can government encourage the monopolist to stay in business yet produce where price equals marginal cost?**

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## *Price Equal to Marginal Cost*

### *Government Subsidy*

- **The government can subsidize the firm so it earns a normal profit**
- **However, government must**
  - ▣ **raise taxes**
  - ▣ **forgo public spending in other area**  
**there is an opportunity cost to the subsidy approach**
- **As a result most public utilities are not subsidized**

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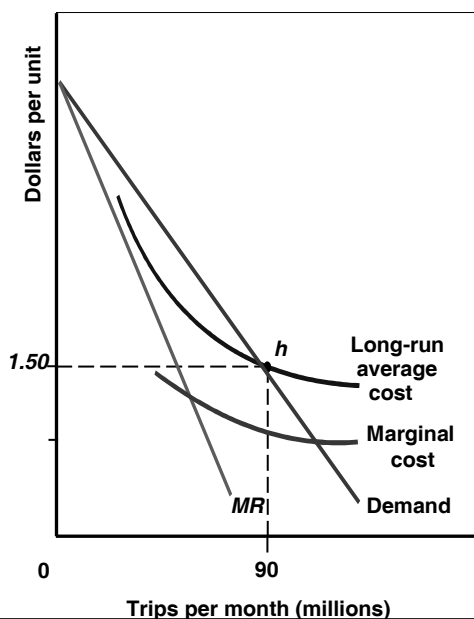
## Price that Provides Fair Return

- Rather than using marginal cost pricing, regulators set a price that will provide the monopolist with a “fair return”
- Recall that the average cost curve includes a normal profit
- Next slide illustrate this approach to pricing

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## Price=LRAC



Let Price=LRAC (point *h*)  
➔ the monopolist can stay in business without a subsidy.

Economic welfare:  
Unregulated < Price=LRAC < Price=MC

The MB to consumers of the 90 millionth trip exceeds the MC ➔ lowering the price to expand output would increase social welfare.

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## *Regulatory Dilemma*

- **Setting Price=MC**
  - ❏ **Socially optimal allocation of resources**
    - MB from the last unit =
    - MC of producing that last unit
  - ❏ **This solution leads to losses unless a subsidy is provided**
  
- **These losses disappear if price is set equal to LRAC**

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## *Regulatory Dilemma*

- **Price=LRAC**
  - ❏ ensures a normal profit,
  - ❏ output falls short of the socially optimal level
  
- **The dilemma facing the regulator is**
  - ❏ set price equal to marginal cost – the socially optimal solution, but which requires a subsidy
  - ❏ set a break-even price even though output falls short of the socially optimal level

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## *Regulatory Dilemma*

- **In real world, regulators usually face a fuzzier picture of things**
  
- **Demand and cost curves can only be estimated and the regulated firm may not always be completely forthcoming with this information**
  - **Ex: A firm overstate its costs so it can charge a higher price and earn more than a normal profit**

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## *Alternative Theories*

- **There are two views of government regulation**
  - ❖ **The first view: for *public interest***
    - Promotes social welfare by controlling the price and output
  - ❖ **The second view: for *special interest of producers***
    - Well organized producer groups expect to profit from economic regulation
    - Persuade public officials to impose restrictions that existing producers find attractive

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## *Special Interest of Producers*

- **Producers have a strong interest in matters that affect their livelihood →**
  - ❖ Play a large role in influencing such legislation
- **Conversely, consumers have no special interest in the majority of this legislation**
- **This asymmetry between the interests of producers and consumers**
  - ❖ → Regulations that favor producer interests

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## *Special Interest of Producers*

- **Legislation favoring producer is usually introduced**
  - ⌘ **under the guise of advancing consumer interests**
  
- **Producer groups frequently argue that**
  - ⌘ **unlimited competition would hurt consumers**
  - ⌘ **Regulation appears under the guise of quality control**

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## *Special Interest of Producers*

- **The special-interest theory may be valid**
  - ⌘ **even the initial intent of the legislation was in the consumer interest**
  - ⌘ **Over time, the regulatory machinery may act more for the interests of producers**
  
- **Producers' political power and strong stake**
  - ⌘ **to capture the regulatory agency → serve producers**

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## *Capture Theory*

- **This *capture theory* of regulation was first explained by George Stigler**
  
- **As a general rule, regulation**
  - ❖ **is acquired by the industry**
  - ❖ **is designed and operated for its benefit”**

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## ***Antitrust Law and Enforcement***

- ***Antitrust policy* is an attempt to curb the anticompetitive tendencies by**
  - ❖ **Promoting the sort of market structure that will lead to greater competition**
  - ❖ **Reducing anticompetitive behavior**

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## ***Origins of Antitrust Policy***

- **In late 1880s,**
  - ❖ **Declines in the national economy**
  - ❖ **Firms reacted by lower prices and stimulate sales**
  - ❖ **Price wars erupted**
- **Firms formed *trusts***
  - ❖ **transferring their voting stock to a single board of trustees,**
  - ❖ **vote in the interest of the entire industry group and**
  - ❖ **pursued anticompetitive practices to develop**
  - ❖ **maintain monopoly advantages**

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## *Sherman Antitrust Act of 1890*

- ***Sherman Antitrust Act of 1890***
  - ⌘ **the first legislation in the world against monopoly**
  
- **The law prohibited the creation of trusts and monopolization**
  
- **Vague and inefficient**

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## *Clayton Act of 1914*

- **To outlaw certain practices not prohibited by the Sherman Act**
- **Help government stop a monopoly before it developed**
  
- **Prohibits**
  - ⌘ ***Price discrimination* when this practice tends to create a monopoly**
  - ⌘ ***Tying contracts* require the buyer of one good to purchase another good as well**

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## Clayton Act of 1914

- **Exclusive dealing** occurs when a producer will sell a product only if the buyer agrees not to buy from another manufacturer
- **Interlocking directorates** whereby the same individual serves on the boards of directors of competing firms
- **Mergers** through the acquisition of the stock of a competing company if the merger would substantially lessen competition

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## 從Netscape Microsoft瀏覽器爭霸戰，談電腦軟體 獨占事業的「搭售」與「掠奪性定價」 (戴豪君)

- 網際網路(Internet)快速發展，引爆相關軟體市場競爭。特別是瀏覽器(Browser)軟體，最先崛起的Netscape(網景)到最近才加入競爭市場的微軟(Microsoft)，兩強除了價格、市場通路的激烈競爭外，還在美國引發反托拉斯的訴訟，引發國內外的高度重視。本文特別針對電腦軟體業中獨占事業以掠奪性定價攻佔市場與濫用市場力量進行搭售等行為加以探討。
- 網景(Netscape)公司所發展Navigator系列產品，並以其優異設計、創新的觀點及友善的使用介面，迅速地成為同類產品的霸主；而向來執軟體業界牛耳的微軟(Microsoft)不甘示弱地推出Internet Explorer系列瀏覽器應戰。微軟不惜巨資搶占市場通路，並採取以低廉的價格甚至免費贈送的方式推廣Explorer，甚至在網路上提供軟體免費供人下載，微軟此舉果然迅速提升其市場占有率。在美國獨占事業如有濫用市場地位的行為，必須受到休曼法(Sherman Act)第2條的規範。網景遂根據反托拉斯法控告微軟，要求停止不公平競爭與影響市場秩序的行為。

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而本案的情形稍有不同，微軟雖然在許多電腦軟體市場享有獨占地位，然而在瀏覽器市場中，卻是由網景長期居於領先地位(市場占有率約在50%-80%不等)，在微軟致司法部回應網景信件的聲明(Microsoft Responds to Netscape Letter to Justices Department，以下簡稱微軟致司法部聲明，本文件參見

<http://www.microsoft.com/ie/press/nscrep.htm>)中，微軟聲稱網景的市場占有率高達85%，強調微軟必須透過改良技術、加強行銷等正當途徑方能與網景進行艱苦的競爭。綜上所述，如果根據瀏覽器軟體的特性將其視為獨立的产品市場，網景居於領導地位是不爭的事實，則網景向微軟提出反托拉斯的控告顯然反客為主。惟進行相關市場範圍的認定時，須注意「相鄰市場原則(neighboring market)」--即當兩個不同產品而關連密切的市場，則獨占企業可利用該市場的優勢地位，利用獨占槓桿作用(monopoly leveraging)影響另一市場競爭秩序，排除其他企業的競爭可能，或建立自己在他市場的優勢地位。

例如：兩個不同產品市場X與Y，A在X市場擁有優勢地位(dominant position)而成爲獨占事業，在Y市場則由B居優勢地位，A僅佔領導地位(leading position)時。由於兩個市場之關係十分緊密，獨占企業A仍可以透過在X市場的經濟力量，利用獨占槓桿作用(monopoly leveraging)，進而影響相連且分割市場Y之競爭秩序、排除其他企業(例如B)競爭或建立自己在Y市場的優勢地位之可能。

- See <http://stlc.iii.org.tw/WEBgais/webgaislink/home1/stlcweb/publish/ipma/14/1412.htm> for more information

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## Other Acts

- **Celler-Kefauver Anti-Merger Act:**
  - ❖ prevents one firm from buying the assets of another firm if the effect is to reduce competition
  - ❖ It applies to
    - **Horizontal mergers** → the merging of firms that produce the same product
      - Ex: Coke and Pepsi
    - **Vertical mergers** → the merging of firms where one supplies inputs to the other or demand output from the other
      - Ex: Microsoft and Dell

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## *Antitrust Enforcement*

- ⊕ **Both**
  - ⊠ Antitrust Division of the U.S. Justice Department
  - ⊠ Federal Trade Commissioncharges a firm or group of firms with breaking the law
  
- ⊕ **Those charged may be able**
  - ⊠ without admitting guilt,
  - ⊠ sign a *consent decree*
    - agree not to continue doing
    - Government drop the charge
  
- ⊕ **If accused contest the charged,**
  - ⊠ Court trail,
  - ⊠ or even Supreme Court for new interpretations

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## *Per Se Illegal*

- ⊕ **The courts interpret antitrust laws in essentially two ways**
  - ⊠ per se illegal
  - ⊠ rule of reason
  
- ⊕ ***Per se illegal* → illegal regardless of the economic rationale or consequences**
  - ⊠ Ex: fix price, restrict output
  - ⊠ Government need only show that the offending practice took place
  - ⊠ Need only examine the firm's behavior

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## *Rule of Reason*

- **The courts engage in a broader inquiry into particular offense**
  - ❖ **Namely:**
    - **Reasons why the offending practice was adopted and its effect on competition**
  
- **In 1911, Supreme Court held that Standard Oil had illegally**
  - ❖ **monopolized the petroleum refining industry ( by acquiring former rivals)**
  - ❖ **engaging in predatory pricing**

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## *Rule of Reason*

- ***Predatory pricing***
  - ❖ **temporarily selling below MC**
  - ❖ **dropping the price only in certain markets to drive rivals out of business**
  
- **Court focused on**
  - ❖ **company's behavior**
  - ❖ **market structure resulted from that behavior**
  - ❖ **Standard Oil had behaved unreasonably**

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## *Rule of Reason*

- **In 1945**
  - ⌘ **Alcoa conduct might be reasonable & legal**
  - ⌘ **Alcoa control 90% of aluminum**
  - ⌘ **Violate antitrust law!**
  
- **The court might focused on market structure rather as the test of legality**

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## *Mergers and Public Policy*

- **To determine possible harmful effects that a merger might have on competition:**
  - ⌘ **one important consideration is its impact on the share of sales accounted for by the largest firms in the industry**
  
- **If a few firms account for a relatively large share of sales, the industry is said to be concentrated**

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## *Mergers and Public Policy*

- **The measure of sales concentration:**
  - ▣ **Herfindahl index**
    - squaring the percent market share of each firm
    - then summing those squares
  
- **Ex: if the industry consists of 100 firms of equal size, the index is 100**  
➔  **$[(100 \times (1)^2)]$**

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## *Mergers and Public Policy*

- **if the industry is a pure monopoly, its index is 10,000  $= (100^2)$**
  
- **The smaller the Herfindahl index if**
  - ▣ **More firms there are in the industry**
  - ▣ **more equal their size**
  
- **Note that the index gives greater weight to firms with larger shares**
- **See next slide**

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## Herfindahl Index

### Computation of the Herfindahl Index Based on Market share in Three Industries

Firm	Industry I		Industry II		Industry III	
	Market Share (percent)	Market Share squared	Market Share (percent)	Market Share squared	Market Share (percent)	Market Share squared
A	23	529	15	225	57	3249
B	18	324	15	225	1	1
C	13	169	15	225	1	1
D	63	6	15	225	1	1
Other*	1	40	1	40	1	40
Herfindahl Index	1098		940		3292	

\* Remaining 40 firms at 1% each

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## Mergers and Public Policy

- **Justice Department sorts mergers into two categories**
  - ⊠ **Horizontal mergers that involve firms in the same market**
  - ⊠ **Nonhorizontal mergers which include all others**
- **Any merger in an industry where two conditions are met is challenged**
  - ⊠ **The post-merger Herfindahl index would exceed 1800**
  - ⊠ **The merger would increase the index by more than 100 points**

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## *Merger Movements*

- ✦ **There have been four merger waves in this country over the last century**
  - **First wave 1887~1904**
    - U.S. Steel and Standard Oil,
    - Most of the mergers were horizontal mergers
  - **Second wave 1916~1929**
    - dominated by vertical mergers
  - **Third wave 1964 ~1969**
    - conglomerate mergers dominated
    - Join firms in different industries
    - Diversify their product mix
    - achieve economies of scope
  - **Fourth wave, 1982 ~Now**
    - onset of the deal decade
    - numerous hostile takeovers
    - One firm would buy control of another against the wishes of the target firm's management

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## *Competitive Trends*

- **Shepherd studied of the level of competition and sorted industries into four groups**
  - ❏ **Pure monopoly,**
    - single firm controlled the entire market
    - able to block entry
  - ❏ **Dominant firm,**
    - Single firm had over half the market share
    - No close real rival

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## *Competitive Trends*

- ❏ **Tight oligopoly,**
  - top four firms supplied more than 60 percent of market output,
  - stable market shares
  - evidence of cooperation
- ❏ **Effective competition**
  - low concentration,
  - low entry barriers,
  - little or no collusion
- **Shepherd's breakdown of U.S. industries for the years 1939, 1958, and 1988**
  - ❏ See next slide

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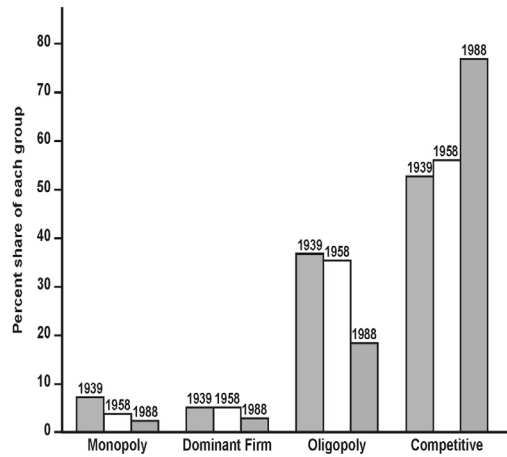




## Competitive Trends in the U.S. Economy

**Modest trend toward increased competition between 1939 and 1958.**

**Between 1958 and 1988, there was a sharp rise in competitiveness**



Sources: W. G. Shepherd, "Causes of Increased Competition in the U.S. Economy, 1939-1980," *Review of Economics and Statistics* 64, (November 1982); and W. G. Shepherd, *The Economics of Industrial Organization*, 3rd ed. (Englewood Cliffs, N.J.: Prentice Hall, 1990) 15.

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## Competitive Trends

### ● According to Shepherd's study

- ❏ Growth in imports accounted for one-sixth of the overall increase in competition
  - Ex: autos
- ❏ Deregulation accounted for one-fifth of the increase in competition
  - Ex: banks, securities trading
- ❏ Antitrust activity accounted for two-fifths of the growth in competition
  - Ex: AT&T

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## *Recent Competitive Trends*

- ⊕ **Growing world trade has increased competition in the U.S. economy**
  
- ⊕ **Other major markets are also growing more competitive**
  - ❖ **technological change**
  - ❖ **deregulation**

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## *電子商務及物流發展整合 (陳光榮)*

- ⊕ 電子商務主要是將供應商、經銷商與零售商結合在一起，透過網際網路提供訂單、貨物及帳務的流動與管理，大量節省傳統作業的時程及成本。台灣目前電子商務應用的方面包括：線上購物(PC軟硬體及周邊設備、圖書、唱片、訂票、旅遊、購物中心、線上出版等)、線上教學與訓練、網路廣告、目錄管理/搜尋引擎、線上檢索/資料庫、線上金融(網路銀行、股市網路下單)等。消費者一直都在要求更高的方便性和更低廉的價格，電子商務提供消費者便利的採購方法，從線上型錄訂貨到電話付款，兩種都可以省掉昂貴的店面成本，再加上電子商務可以省去許多中間的程序，因而降低製造商的庫存及配送成本，提高訂貨的便利性，也間接降低消費者的購買價格。

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## ***Problems with Antitrust Legislation***

*Lengthy antitrust cases*

- **Growing doubt about the economic value of the lengthy antitrust cases**
  - ❏ **Microsoft case**
  - ❏ **Case against Exxon was in the court for 17 years before Exxon was cleared of charged**
  - ❏ **A case against IBM began in 1969 and was finally dropped in 1982**

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## ***Problems with Antitrust Legislation***

*Too much emphasis on Competition*

- **Too much emphasis on the competitive model**
  - ❏ **Competition should be viewed as a dynamic process, one of *creative destruction***
  - ❏ **Firms are continually trying to compete for the consumer's dollar in a variety of ways**
  - ❏ **antitrust policy should not necessarily be aimed at increasing the number of firms in each industry**

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## Legislation

### *Too much emphasis on Competition*

- ❑ In some cases, firms will grow large because they are more efficient than rivals at offering what the consumers want
  
- ❑ Accordingly, firm size should not be the primary concern
  
- ❑ Market experiments show that most desirable properties of perfect competition can be achieved with a relatively small number of firms

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## Problems with Antitrust Legislation

### *Abuse of Antitrust*

#### ⊕ Abuse of antitrust

- ❑ Parties that can show injury from firms that have violated the antitrust laws can
  - sue the firm
  - recover *treble*(三倍) *damages*
- ❑ more than 1,000 of these suits are filed each year
- ❑ Courts have been relatively generous to the suits
- ❑ Frighten the aggressive competitors
- ❑ Anticompetitive costs may be larger than the benefit from antitrust law

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## *Problems with Antitrust Legislation*

### ✦ Growing importance of international markets

- A standard approach to measuring the market power of a firm is its share of the market
- However, with the growth of international trade, the local or even national market share becomes less relevant
- Ex: GM: Half of national sales by U.S. firms
- 28% when European and Japanese car are considered.
- GM share of world production declines steadily

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## 課堂報告

- ✦ 請解釋何謂 regulatory dilemma
- ✦ 請解釋何謂 alternative theories
- ✦ 請簡介投影片中“**Netscape Microsoft** 瀏覽器爭霸戰，”這篇文章的大意
- ✦ 請解釋何謂 **predatory pricing**

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## *Homework*

- 10: Regulating natural monopolies
- 11. Type of anticompetitive behaviors
  - Ex: a. Tying contract
- 12. Calculate Herfindahl index