

## Measuring Market Power/Performance

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- Market structure is often a guide to market performance
- But this is not a perfect measure
  - can have near competitive prices even with “few” firms
- Also, strong price competition may allow fewer firms to survive, leading to higher concentration
- Measure market performance using the Lerner Index

$$LI = \frac{P - MC}{P}$$

## Market Performance 2

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- Perfect competition:  $LI = 0$  since  $P = MC$
- Monopoly:  $LI = 1/h$  – inverse of elasticity of demand
- With more than one but not “many” firms, the Lerner Index is more complicated: need to average.
  - suppose the goods are homogeneous so all firms sell at the same price

$$LI = \frac{P - \sum s_i MC_i}{P}$$

## Lerner Index: Limitations

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- LI has limitations
  - measurement: as with “measuring” a market
  - meaning: measures outcome but not necessarily performance
  - misspecification:
    - if there are sunk entry costs that need to be covered by positive price-cost margin
    - low price by a high-cost incumbent to protect its market

## Empirical Application: How Bad is Market Power Really?

- Harberger (1954) exercise: Welfare Loss (WL) is:

$$WL = \frac{1}{2} (P - MC)(Q^C - Q)$$

- Welfare Loss in relation to sales:

$$\frac{WL}{PQ} = \frac{1}{2} \frac{(P - MC)}{P} \frac{(Q^C - Q)}{Q}$$

- This can be expressed as:

$$\frac{WL}{PQ} = \frac{1}{2} \epsilon_D (LI)^2$$

## How Bad is Market Power Really? 2

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- **Because most industries are not perfect monopolies, Harberger (1954) calculates**

$$\frac{WL}{PQ} = \frac{1}{2} \varepsilon_D (LI)^2$$

- For 73 manufacturing industries assuming  $\varepsilon_D=1$ .  
Multiplying the result by each industry's output and summing over all industries he estimates a total welfare loss from monopoly power of about two-tenths of one percent of GDP

## How Bad is Market Power Really? 3

- One problem is cost, possibly due to how advertising is treated

$$\frac{WL}{PQ} = -\frac{1}{2} \varepsilon_D \left[ \frac{(P - MC)}{P} \right]^2$$

- Under imperfect competition, MC may not be minimized, so  $P - MC$  may be artificially low.
- Corrections by Cowling and Mueller (1978) and Aiginger and Pfaffermayr (1997) raise total cost substantially to between 4 and 11 percent of GDP

## Estimated Lerner Index various US industries

**TABLE 7-5** Lerner Indexes and Markup Factors for Selected U.S. Industries

Industry	Lerner Index	Markup Factor
Food	0.26	1.35
Tobacco	0.76	4.17
Textiles	0.21	1.27
Apparel	0.24	1.32
Paper	0.58	2.38
Printing and publishing	0.31	1.45
Chemicals	0.67	3.03
Petroleum	0.59	2.44
Rubber	0.43	1.75
Leather	0.43	1.75

Source: Michael R. Baye and Jae-Woo Lee, "Ranking Industries by Performance: A Synthesis," Texas A&M University, Working Paper No. 90-20, March 1990; Matthew D. Shapiro, "Measuring Market Power in U.S. Industry," National Bureau of Economic Research, Working Paper No. 2212, 1987.

Sources;: M.R.Baye: Managerial Economics and Business Strategy, 7th ed. p. 248

PRN, QE, p. 75

**Table 4.2** Estimated lerner index for selected industries

<i>Hall (1988)</i>		<i>Dobbelaere (2004)</i>	
<i>Industry</i>	<i>Lerner Index</i>	<i>Industry</i>	<i>Lerner Index</i>
Food & Kindred Products	0.811	Ferrous and nonferrous ores	0.277
Tobacco	0.638	Non-metallic mineral products	0.244
Textile Mill Products	-0.214	Chemical products	0.205
Apparel	0.444	Metal products (no mach/transp. equip)	0.156
Lumber and Wood	0.494	Agricultural and industrial machinery	0.227
Furniture and Fixtures	0.731	Office machines, prec. instruments	0.247
Paper and Allied Products	0.930	Electrical goods	0.198
Printing	0.950	Motor vehicles	0.174
Rubber & Plastic	0.337	Other transport equipment	0.471
Leather Products	0.524	Meat preserves	0.065
Stone, Clay, and Glass	0.606	Milk and dairy products	0.000
Primary Metals	0.540	Other food products	0.202
Fabricated Metals	0.394	Beverages	0.294
Machinery	0.300	Textiles and clothing	0.143
Electric Equipment	0.676	Timber, wooden products, & furniture	0.172
Instruments	0.284	Paper and printing products	0.200
Miscellaneous Mfg	0.777	Rubber and plastic products	0.314
Communication	0.972	Other manufacturing products	0.143
Electric, Gas, & Sanitary Svcs	0.921		
Motor Vehicles	0.433		
<b>Average</b>	<b>0.57</b>	<b>Average</b>	<b>0.207</b>

Sources;: M.R.Baye: Managerial Economics and Business Strategy, 7th ed. p. 248

PRN, QE, p. 75