Microeconomic Analysis

Review of:

- -market structures
- -economic drivers of profitability
- -perfect competition

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Minimum efficient/viable scale

Small relative

to market demand

Large

Taste for variety

Homogenous product

Differentiated products

Importance of pricing strategies

Perfect competition

Monopolistic competition

- Agricultural products
- Commodities
- Oil shipping
- •paper

- Mass, or shoppers' markets:
- Office space
- •Electronics/Computer peripherals
- Niche, or lovalists' markets:
- •Small retailers
- •Small home service providers
- •Microbreweries

Oligopoly

- Petrochemicals
- Agricultural products processing

- pharmaceuticals
- •RTE cereal
- Automobiles airlines

MES so large that only one firm can be viable.

Natural monopoly

Traditional sources of size economies:

- Utilities
- •Newspapers in small/medium towns

New economy, demand-based, sources:

- •Microsoft (clear)
- •eBay (?less obvious)

 Strategic Interaction Firms shape the nature

of

competition

environment

•Firms cannot shape their Interaction non-strategic

Important cost concepts

- Average variable cost (AVC): direct cost that can be avoided by changing output level (including shutting down production in the short-run)
 - sometimes referred to as cash cost, or direct cost
- * Average total cost (ATC): includes AVC plus the *opportunity cost* of all assets currently committed to the industry
- Full-reinvestment ATC (F-R ATC): includes ATC plus the per unit, annualized value of all investments necessary to acquire these assets by a new firm
 - ◆ This differs from ATC by sunk cost, converted to annual capital charge

Average variable cost with a 'hard' capacity constraint: Aluminum smelters Average total cost

For a modern plant, this is about 220,000 tpy

Maximum capacity

Marginal cost

Firm vs. industry supply

- * The supply of *each firm* is
 - ◆ 0 output when the price is *below* its AVC
 - ◆ Its full capacity when the price *exceeds* its AVC
- ❖ But the industry consists of many firms (157) with different cost structures.
- ❖ What is the industry supply in this case?

Cost analysis

	Alba Bahrain	Alba 3 Bahrain State	Alcasa Venezuela CVG
	State		
	221	230	210
Electricity usage (kWh/t)	16,000	13,949	16,864
Electricity price (\$/kWh)	0.01	0.013	0.012
Total electricity cost:	204.99	178.71	196.37
Alumina usage (t/t Al)	1.93	1.92	1.94
Alumina price (\$/t Alumina)	<u>191.70</u>	<u>191.70</u>	210.06
Total alumina cost:	369.99	368.07	406.67
Other raw materials	113.74	103.37	184.34
Plant power and fuel	2.75	2.75	12.68
Consumables	50.98	50.92	110.74
Maintenance	38.55	37.46	40.72
Labor	107.42	55.07	67.77
Freight	38.00	38.00	27.14
General and administrative	67.17	63.77	42.04

Example of industry supply with four firms

Firm	Capacity	Cumulative capacity	AVC
Zaporozhye	100	100	720
Sumgait	60-	→ 160	734
Sorocaba	122	282	825
Sayansk	323	605	834















