Barick Chung

Employment:
2014-present Senior Lecturer, Department of Economics, CUSZ – Shenzhen.
2012-2014 Lecturer, School of Economics and Finance, University of Hong Kong.
2006-2012 Instructor, Department of Economics, CUHK – Hong Kong.

Education:
2003-2007 Ph.D. (Business) Indiana University – Bloomington.
1987-1991 BS.Sc. (Economics) Chinese University of Hong Kong – Hong Kong.

Research paper:
Chung, Barick, "Two Level Price Discrimination and Vertical Relationship" (March 05, 2012). Available at SSRN: http://ssrn.com/abstract=1997070.

Homepage: Deleted
Facebook: Deleted
Wechat ID: barickchung

ECO 2011 (Sections L07-10)
Basic Microeconomics

Barick Chung
Department of Economics
235-18822
Zhiren Building, 409
barickchung@cuhk.edu.cn

Mankiw, Gregory, 2012, *Essentials of Economics*, p. 66:

Market: a group of buyers and sellers of a particular good or service.

Competitive market: a market in which there are many buyers and many sellers so that each has a negligible impact on the market price.

Mankiw, Gregory, *Essentials of Economics*, 2012, p. 256:

1) There are **many buyers and many sellers** in the market

2) The goods offered by the various sellers are **largely the same**

3) Firms can freely enter or exit the market

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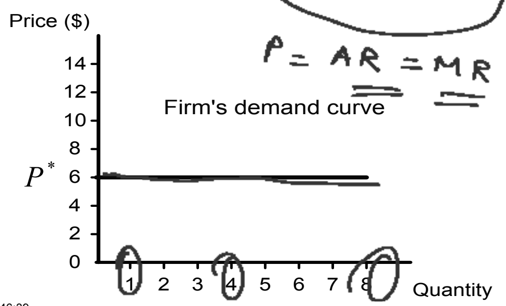
P=AR=MR



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Total, average and marginal revenues

Same Same

TR = P×Q

Quantity	Price	Total revenue	Average revenue	Marginal revenue
0 unit	$6	$0	-	–
1	6	6	$6	$6
2	6	12	6	6
3	6	18	6	6
4	6	24	6	6
5	6	30	6	6
6	6	36	6	6
7	6	42	6	6
8	6	48	6	6

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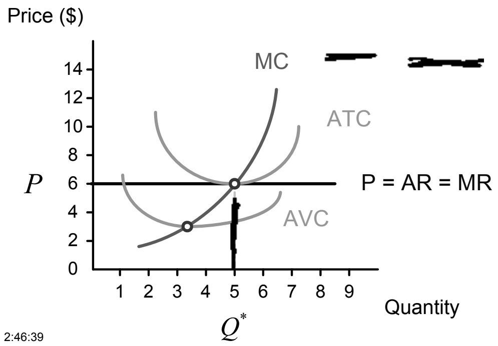

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Mankiw, Gregory, *Essentials of Economics*, 2012, p. 259: Profit maximization for a competitive firm

Quantity	Price	Total revenue	Total cost	Profit	Marginal revenue	Marginal cost	Marginal profit
0 unit	$6	$0	$3	-$3	–	–	–
1	6	6	5	1	$6	$2	$4
2	6	12	8	4	6	3	3
3	6	18	12	6	6	4	2
4	6	24	17	7	6	5	1
5	6	30	23	7	6	6	0
6	6	36	30	6	6	7	-1
7	6	42	38	4	6	8	-2
8	6	48	47	1	6	9	-3

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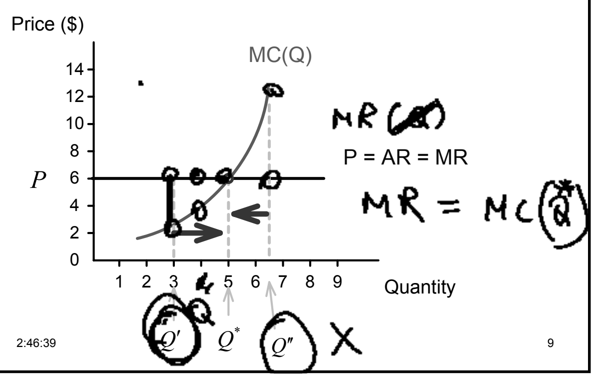

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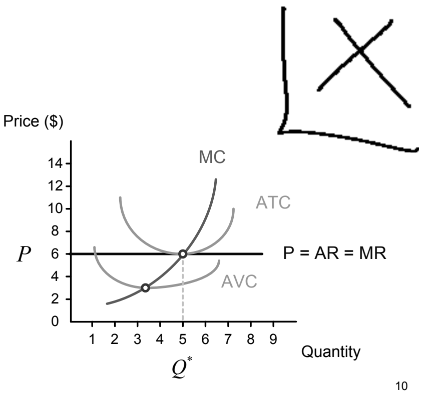
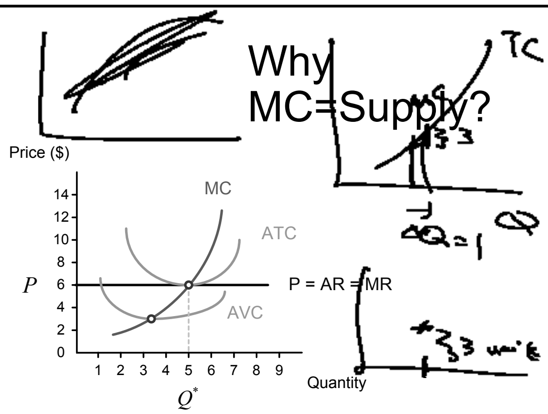
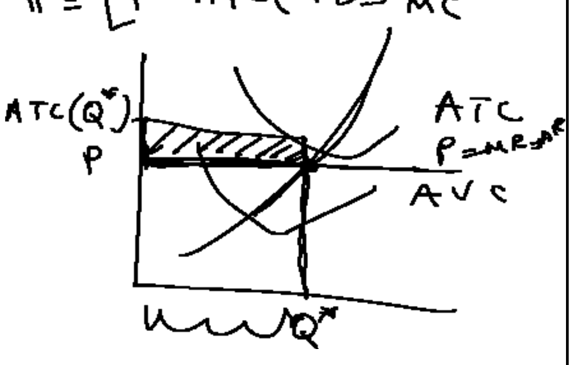


Why MC=Supply?



$$\pi^* = [P - ATC(Q^*)] \cdot Q^*$$



$$\pi^* = TR - TC$$
$$= \pi(Q^*) = AR \times Q^* - ATC \times Q^*$$
$$= P \times Q^* - ATC \times Q^*$$

Profit / Loss

$$= \boxed{P - ATC(Q^*)} \times Q^*$$

$AR = P$

A firm shuts down (in the short run) if the price of the good is less than the average variable cost.

$$\frac{TR}{Q} < \frac{TVC}{Q} < \frac{TC}{Q}$$

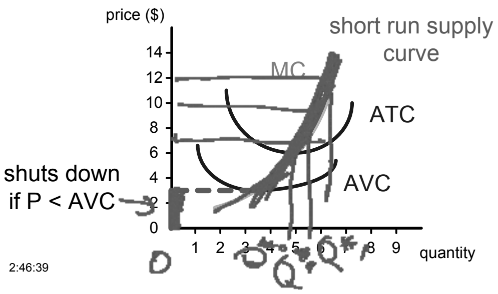
"Shut down" iff $TR < TVC \quad (< TC)$

$\Leftrightarrow$ "Shut down" iff $\frac{TR}{Q} < \frac{TVC}{Q} \quad \left(< \frac{TC}{Q} \right)$

$P = AR$

$\Leftrightarrow$ "Shut down" iff $\boxed{P < AVC \quad (< ATC)}$

$P < AVC$



A firm exits (in the long run) if the price of the good is less than the average total cost.

$$\text{"Exit" iff } TVC < TR < TC$$

$$\Leftrightarrow \text{"Exit" iff } \frac{TVC}{Q} < \frac{TR}{Q} < \frac{TC}{Q}$$

$$\Leftrightarrow \text{"Exit" iff } \boxed{AVC < P < ATC}$$

$$\frac{TVC}{Q} < \frac{TR}{Q} < \frac{TC}{Q}$$

$$\frac{TR}{Q} = AR = P$$

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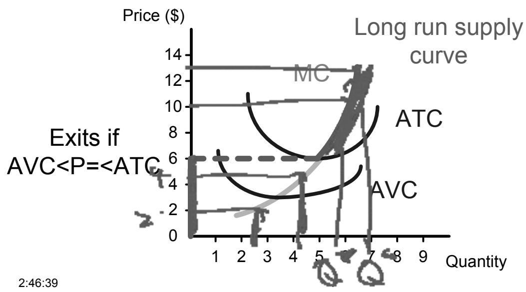

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1) A firm **exits** (in the long run) (and stays in the short run) if the price of the good is larger than the average variable cost but less than the average total cost.

2) A firm **shuts down** (in the short run) if the price of the good is less than the average variable cost.

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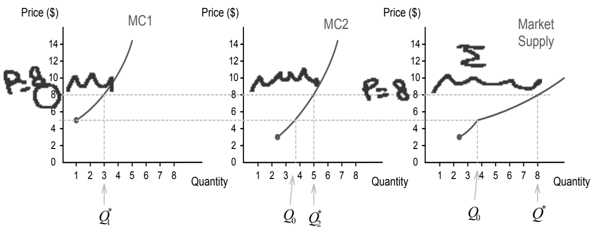
A competitive firm's **long-run supply curve** is the portion of its marginal cost curve that lies above average total cost.

A competitive firm's **short-run supply curve** is the portion of its marginal cost curve that lies above average variable cost.

Market supply curve:

Market supply



24 hr 16hr 24hr

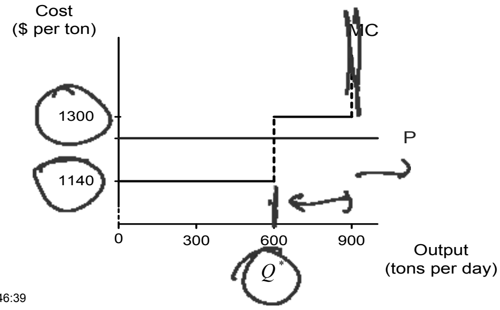
Pindyck and Rubinfeld, 2013, p.241:

8 hr

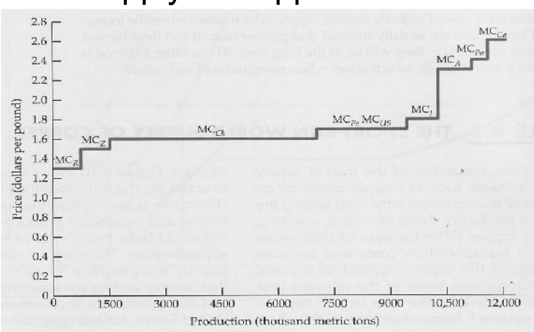
Production costs for aluminum smelting ($/ton) (Fixed cost of the smelting plant is over $1B):

Per-ton costs that are constant for all output levels	Output ≤ 600 tons / day	Output > 600 tons / day
Electricity	$316	$316
Alumina	369	369
Other raw materials	125	125
Plant power and fuel	10	10
Subtotal	$820	$820
Per-ton costs that increase when output exceeds 600 tons / day		
Labor	$150	$225
Maintenance	120	180
Freight	50	75
Subtotal	$320	$480
Total per-ton production cost	$1,140	$1,300
This example is based on Kenneth S. Corts, "The Aluminum Industry in 1994," Harvard Business School Case N9-799-129, April 1999.		

Pindyck and Rubinfeld, 2013, p.241:



The Supply of Copper



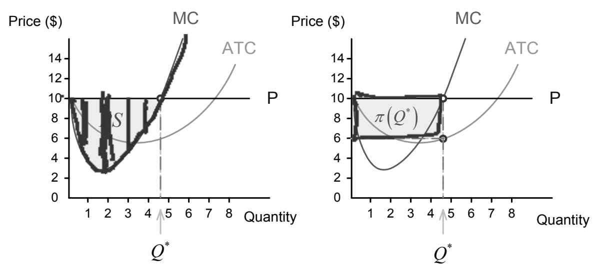
Pindyck and Rubinfeld, 2013, p. 298:

PS = P − c

Producer surplus: is the sum over all units produced by a firm of differences between the market price of a good and the marginal cost of production.

PS = P − MC

Equivalently, producer surplus measures the area above a producer's supply curve and below the market price.



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$\pi = TR - TC$

$= (P - ATC)Q$

$ATC = AVC + AFC$

PS FC

$\pi = \{P - AVC - AFC\} \times Q$

$= \{P - AVC\}Q - AFC \times Q$

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