Lecture 6
Supply and Demand III

MIT Sloan Management

15.010/011 Economic Analysis for Business Decisions
Oz Shy

Production decisions in the short-run

Background for today's lecture

1. Observation: Some firms announce their decision to stop production of a product line in the future.

2. Question: Why is that? Why a firm may choose to delay its exit from a certain market?

3. solution: We need to examine the firm's cost structure

Outline of today's discussion:

1. Profit maximization in the short-run versus long-run
2. Group presentations: The Alusaf Case

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Exit decision in the news

The New York Times

Shell Exits Arctic as Slump in Oil Prices Forces Industry to Retrench

By CLIFFORD KRAUSS and STANLEY REED SEPT. 28, 2015

Shell had some mishaps in Alaska, such as when its floating drill rig Kulluk, center, ran aground in 2012.
James Brooks/Kodiak Daily Mirror, via Associated Press

On Monday, Royal Dutch Shell ended its expensive and fruitless nine-year effort to explore for oil in the Alaskan Arctic — a $7 billion investment — in another sign that the entire industry is trimming its ambitions in the wake of collapsing oil prices.

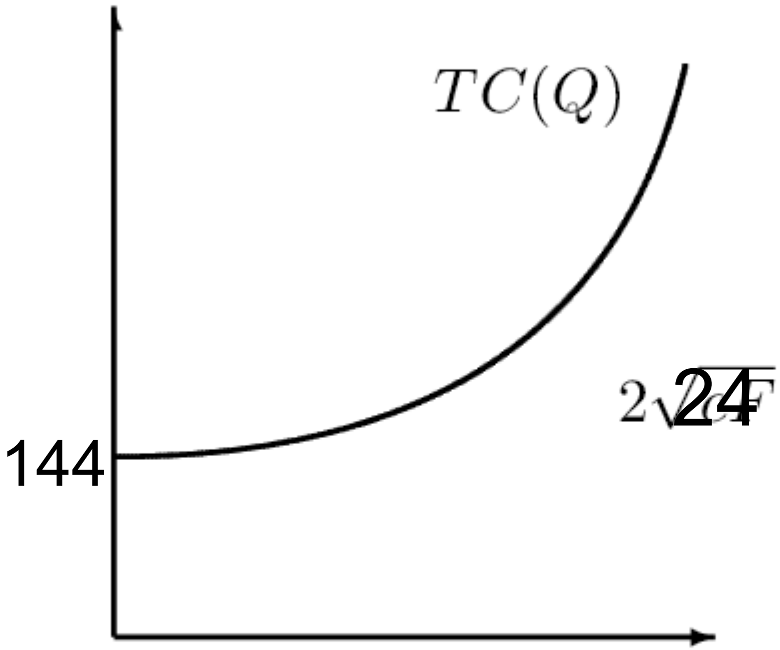
A simple numerical example

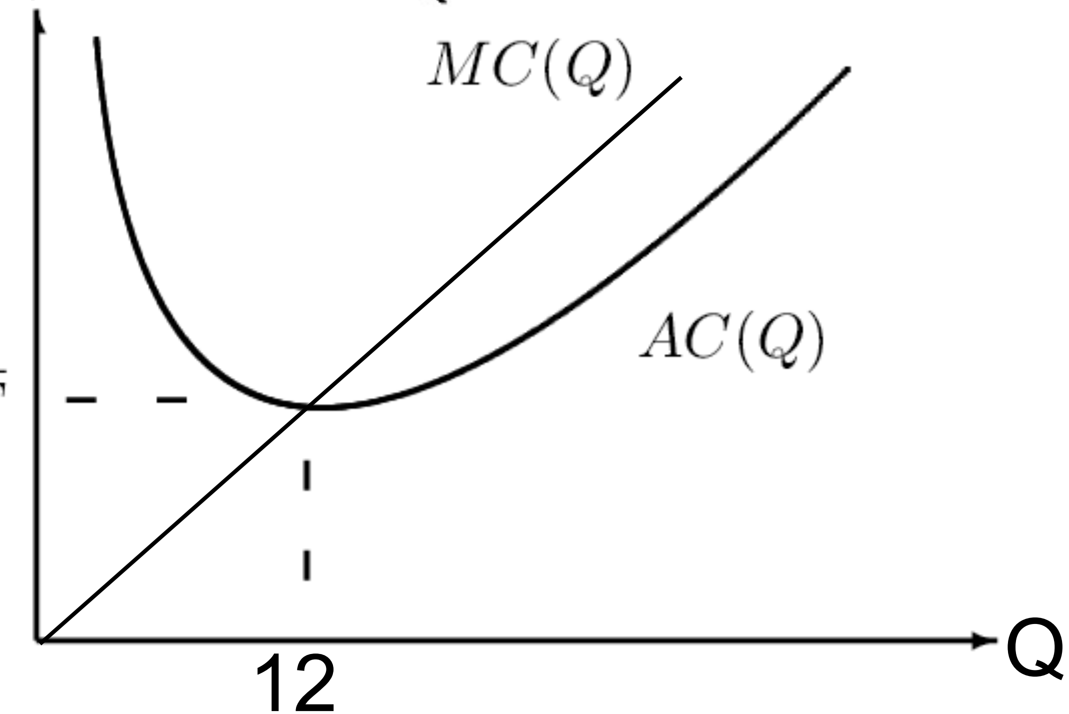
(Simple because minimum AVC does not play a role here, see next slide)
(Note: In class, we will prove that min ATC is at Q = 12 units)

Fixed cost = \$144 = 5-year rental contract on space. Two cases:
(a) 4 years left on the contract, and (b) it is time for renewal

$$TC(Q) = 144 + Q^2$$

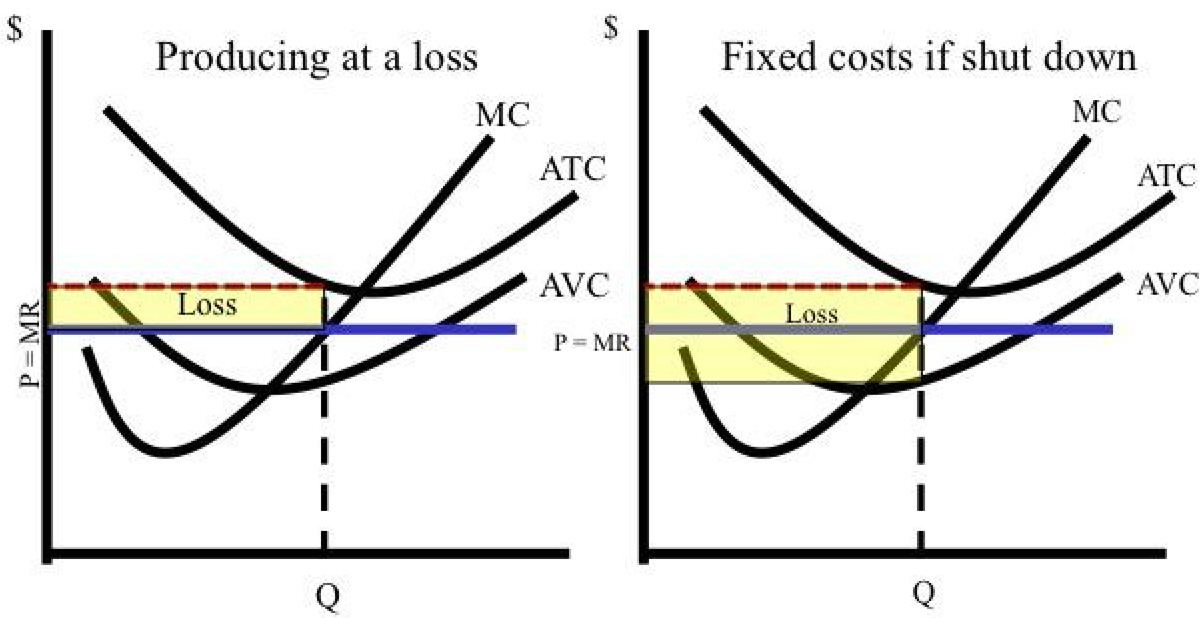
$$AC(Q) = \frac{144}{Q} + Q \quad MC(Q) = 2Q$$





Short-run versus long-run: A more general case

1. If P < min AVC, then immediate shutdown
2. If min AVC < P < min ATC, then produce in the SR (P=MC), exit in the LR (*Note*: loss is minimized in the SR)
3. If P > min ATC, your firm is profitable in the LR Congratulations (ask for promotion!)



Note: Equality "=" signs are borderline cases