Profit maximization

Lecture 2

Revenue $R(a1,...,a,)$

Costs $C(a1,...,a,)$

Assumption

firm acts so as to maximize its profit

$R(a1,\ldots,a,) - C(al,\ldots,a,)$

first basic principle of profit maximization

$$\max_{a_1,\ldots,a_n} \; R(a_1,\ldots,a_n) - C(a_1,\ldots,a_n).$$

$$\frac{\partial R(\mathbf{a}^*)}{\partial a_i} = \frac{\partial C(\mathbf{a}^*)}{\partial a_i} \qquad i = 1, \ldots, n.$$

Constraints:

- *Technological constraints*
- *Market constraints*

Profit maximization

Profit maximization

$$\pi(\mathbf{p}) = \max \mathbf{py}$$

such that y is in Y.

Profit maximization

$$\pi(\mathbf{p}, \mathbf{z}) = \max \mathbf{py}$$

such that y is in Y(z).

Profit maximization

$$\pi(p, \mathrm{w}) = \max \; \mathrm{pf}(\mathrm{x}) - \mathrm{wx}$$

Profit maximization

$$c(\mathbf{w}, \mathbf{y}) = \min \mathbf{wx}$$
such that $\mathbf{x}$ is in $V(y)$.

Profit maximization

$$c(w, y, z) = \min wx$$

such that $(y, -x)$ is in $Y(z)$.

Profit maximization

$$p\frac{\partial f(\mathbf{x}^*)}{\partial x_i} = w_i \qquad i = 1, \cdots, n.$$