Rückblick: Konsumentenverhalten

- **Mark Twain's Marginal Utility of Jodling**

*"**The jodling** (pronounced yodling—emphasis on the o) continued, and **was very pleasant and inspiriting to hear**. Now the jodler appeared—a shepherd boy of sixteen—and in our gladness and gratitude **we gave him a franc to jodle some more**. So he jodled, and we listened. We moved on presently, and he generously jodled us out of sight. After about fifteen minutes, we came across **another shepherd boy who was jodling**, and **gave him half a franc to keep it up**. He also jodled us out of sight. After that,* ***we found a jodler every ten minutes****; **we gave the first one eight cents, the second one six cents, the third one four cents, the fourth one a penny, contributed nothing to Nos. 5, 6, 7**, and **during the remainder of the day hired the rest of the jodlers, at a franc apiece, not to jodle any more."***

Journal of Political Economy, Vol. 109, No. 5 (October 2001), p. Back Cover
[Mark Twain, *A Tramp Abroad (London: Chatto & Windus, 1880), pp. 257–58]*

Production and Profits

$TR = P \cdot Q$; $P = 18 \Rightarrow TR = 18 \cdot Q$; Kostenfunktion: $TC(Q)$

$\Pi(Q) = TR(Q) - TC(Q)$

TABLE 12-1 Profit for Jennifer and Jason's Farm When Market Price Is $18

Quantity of tomatoes *Q* (bushels)	Total revenue *TR*	Total cost *TC*	Profit *TR* – *TC*
0	$0	$14	–$14
1	18	30	–12
2	36	36	0
3	54	44	10
4	72	56	16
5	90	72	18
6	108	92	16
7	126	116	10

Using Marginal Analysis to Choose the Profit-Maximizing Quantity of Output

- **Marginal revenue** is the change in total revenue generated by an additional unit of output.

$$\text{Marginal revenue} = \frac{\text{Change in total revenue}}{\text{Change in output}} = \text{Change in total revenue generated by one additional unit of output}$$

MR = ΔTR/ΔQ

Bei Differenzierbarkeit:

MR = *dTR*/d*Q* = *P*

Bei vollkommener Konkurrenz

The Optimal Output Rule

- The **optimal output rule** says that profit is maximized by producing the quantity of output at which the marginal cost of the last unit produced is equal to its marginal revenue.

$$\Pi'(Q) = TR'(Q) - TC'(Q)$$
$$= MR - MC = 0$$

Bedingung zweiter Ordnung (B.2.O.)

$$\Pi''(Q) < 0 \Rightarrow TC''(Q) > 0$$

(Grenzkosten zunehmend!)

Angebotsfunktion und Angebotskurve: ein Beispiel

- Beispiel aus Kap. 11: $TC = 2\,Q^2 + 400$
- Gewinnmaximierung:

$$\max_{Q} \Pi(Q) = TR(Q) - TC(Q) =$$

$$= P \cdot Q - 2\,Q^2 - 400$$

$$\Pi'(Q) = P - 4Q \stackrel{!}{=} 0$$

$\Rightarrow$Angebotskurve: $P = 4Q$

(= kurzfristiger Angebotskurve)

$\Rightarrow$Angebotsfunktion: $Q = P/4$

- Langfristige Angebotskurve: (Min *ATC*: $Q = \sqrt{200}$)
  - $P = 4Q$ für $Q > \sqrt{200}$

Industry Supply Curve

- The **industry supply curve** shows the relationship between the price of a good and the total output of the industry as a whole.

(Individuelle) Angebotsfunktion einer Firma *i* :

$$Q_i = P/4$$

(Aggregierte) Angebots**funktion** der Industrie

(*N* aktive Unternehmen, gegeben *P*)

$$Q^{Industrie} = \sum_{i=1}^{N} Q_i = N \cdot P/4$$

(Aggregierte) Angebots**kurve** der Industrie

$$P = 4\, Q^{industrie}/N$$

Der Strommarkt

- Grenzkosten der Stromerzeugung

Abbildung aus Ockenfels, **Strombörse und Marktmacht,** ENERGIEWIRTSCHAFTLICHE TAGESFRAGEN 57. Jg. (2007) Heft 5