

Theoretical foundations

Microeconomic consumer theory

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Introduction to choice models



The case of continuous goods

Continuous choice set

- ▶ Consumption bundle

$$Q = \begin{pmatrix} q_1 \\ \vdots \\ q_J \end{pmatrix} \quad p = \begin{pmatrix} p_1 \\ \vdots \\ p_J \end{pmatrix}$$

- ▶ Budget constraint

$$p^T Q = \sum_{\ell=1}^J p_\ell q_\ell \leq I.$$

- ▶ No attributes, just quantities and prices

Choice

Solution of an optimization problem

$$\max_Q \tilde{U}(Q)$$

subject to

$$p^T Q \leq I, Q \geq 0.$$

Demand function

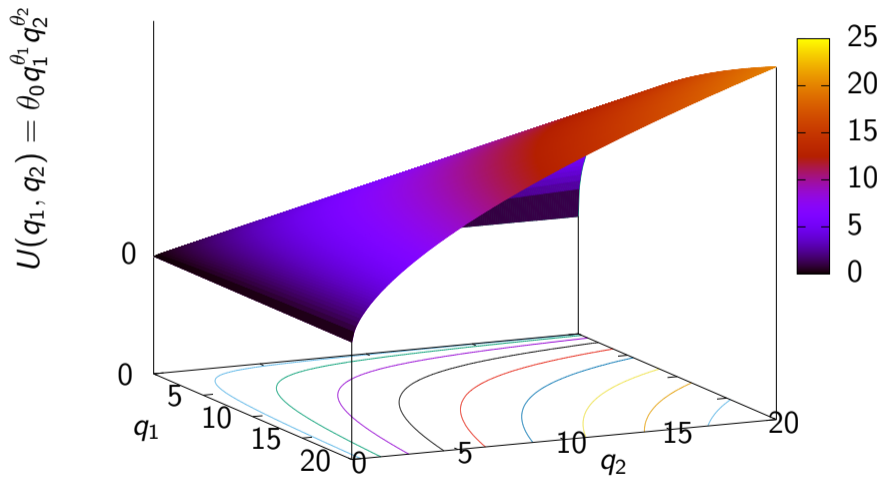
- ▶ Solution of the optimization problem
- ▶ Quantity as a function of prices and budget

$$Q^* = \text{demand}(I, p)$$

Example: Cobb-Douglas

$$\tilde{U}(Q) = \theta_0 \prod_{\ell=1}^J q_{\ell}^{\theta_{\ell}}$$

Example: Cobb-Douglas



Example

