Handout 2

diese Woche: Nachtrag zu 1.3 Gewinnmaximierung
2. Theorie des Konsumenten
Grundlegende Axiome zu Präferenzen und Nutzenfunktion
2.1. Primaler Ansatz
Nutzenmaximierung, Marshall'sche Nachfragefunktionen,
Einkommenselastizitäten, indirkte Nutzenfunktion, Roy's Identity
2.2. Dualer Ansatz
Ausgabenminimierung, Hick'sche Nachfragefuntionen, Expenditure
Function, Shephard's Lemma, Verbindung zum Primal

zu lesen: Intermediate Varian, Kap. 2 - 6, 8 als Einführung, sowie - unbedingt lesen - Deaton
and Muellbauer, Kap 2.1 - 2.5

Übungsaufgaben:

1. List the basic axioms, and for each come up with a simple counterexample, ie an example that violates the axiom at hand.

2. George's preferences regarding goods x and y can be represented by $U(x, y) = \sqrt{x}\,\sqrt{y}$, Laura's latin tastes are represented by $U(x, y) = \ln(x) + \ln(y)$. Can you say anything about familial harmony? Calculate the MRS for both of the above utility functions.

3. Find the demand functions which subject to the budget constraint $I = px + qy$ maximize $U(x, y) = \sqrt{x} + \sqrt{y}$. Show that for this utility function the MRS is constant along any ray from the origin. Calculate the expenditure shares. Find the income elasticity of both demands. Do you see any connection here?

4. Consider the Cobb-Douglas utility function, $U(x_1, x_2) = x_1^{\alpha} x_2^{\beta}$, where the exponents sum to one. Derive the uncompensated (Marshallian) and the compensated (Hicksian) demand functions, as well as the indirect utility function and the expenditure function. Check Roy's identity as well as Shephard's Lemma. Go from Marshallian demands to Hicksian and back and similarly from indirect utility function to expenditure and back.

5. Think about the indirect utility as well as the expenditure function. What do they tell you? What behavior is implicit in these functions? What properties do they have?