Handout 5

diese Woche: 5. Allgemeine Gleichgewichtstheorie / General Equilibrium (all markets)
5.1. Tauschwirtschaft
Edgeworthbox, mutually beneficial Trades, Contract Curve,
Effizienz auf der Konsumentenseite
Walras' Law
5.2. Produktion und Konsum
der schizophrene Robinson Crusoe
Effizienz auf der Produktionsseite
5.3. Existenz, Stabilitaet, Uniqueness

zu lesen: Intermediate Varian Kap. 29 + 30 and Mas-Colell Kap. 15 + 17.

Übungsaufgaben:

1 Consider a 2-person exchange economy. Agents A and B both have identical preferences which can be represented by $U(x_1, x_2) = x_1 x_2$. Person A is endowed with 2 units of x_1 and 8 units of x_2 while person B is endowed with 8 units of x_1 and 2 units of x_2.
a) Draw the corresponding Edgeworth box and depict the endowment point, the set of mutually preferred points, and the contract curve.
b) derive the utility maximizing demand functions for both agents.
c) Find the equilibrium price ratio p_1/p_2. Can you also find the exact absolute equilibrium prices p_1 and p_2 - why or why not?

2. Again consider a 2 person exchange economy. Suppose person A has preferences à la $U = x + 2y$ and person B's preferences can be represented by $U = 2x + y$. Depict the contract curve. Choose an endowment point in the interior. Depict the mutually beneficial trades. What will be the outcome of the market mechanism - is it unique or are there several possible outcomes? What about MRSs and relative price at this point/these points?

3. Instead of spending the summer in Kiel, you have chosen a remote, deserted island in the South Pacific. You can use your time to collect coconuts or recover from a hard year at CAU. If you work you end up with coconuts according to a concave production function. In a time-coconut diagram, depict this production function and your preferences. What is your optimal point? Now suppose the intense sunshine, the loneliness, and that ... micro class you took during your year at CAU render you schizophrenic. One part of you plays price-taking consumer, the other price--taking producer. Visualize each parts' optimum as a function of relative price (real wage). Can you think of the above optimal point as a market equilibrium?

4. Explain the rationale behind Walras' law and derive it mathematically for an exchange economy.

5. You are practicing the economist's favorite sport: comparative statics. Why should you be concerned about existance, uniqueness, and stability of the equilibria you compare?

6. Explain the production, consumption, and over-all efficiency conditions and depict them graphically. For each condition name (at least) one fact of German economic reality that causes inefficiency.