

Final Exam

This is a three hour exam. There are seven equally weighted questions. Please read them carefully and answer each of them. If you have any questions do not hesitate to ask. One of us will be outside. *Good luck, viel Glück, bonne chance, y mucha suerte !!!*

Question 1: Consider the 2x2x2 Heckscher Ohlin trade model.

- State the four results of the Heckscher-Ohlin model and categorize them as global vs. local and price vs. quantity.
- Using the Mussa diagram, show the Stolper-Samuelson result and derive the magnification effect in prices. Explain the distributional implications of this result.
- Suppose one factor is immobile between the two sectors while the other can still move freely between sectors in reaction to a price change. Analyze the distributional implications in this case.

Question 2: Consider two islands, Cozumel and Isla de las Mujeres, both with an endowment of 9 piñas coladas and 9 pollos. Suppose that preferences on both islands can be represented by $U(x_c, x_p) = x_c^\alpha x_p^{1-\alpha}$, where x_c and x_p are piñas coladas and pollos respectively and α equals $2/3$ on Cozumel and $\alpha = 1/3$ for las mujeres.

- Find the autarky equilibrium price on each island. Explain what pattern of trade you expect to see as soon as both islands engage in free trade.
- Find the free trade equilibrium, i.e. the equilibrium price and the quantities traded. Show that there are gains from trade.
- What is the reason for trade in this context? Do you see any problems with this explanation of trade?

Question 3: On Moorea it takes a woman (or man) two days to collect a ton of coconuts and 5 days to build a canoe, while on Raiatea it takes four days and eight days respectively. Both islands have a population of 10,000.

- Explain the difference between comparative and absolute advantage for these two islands. Can you say where the real wage will be higher?

- b) Assuming Cobb-Douglas preferences à la $U = X_{cocos}X_{canoes}$, find the free trade equilibrium: that is, the quantities produced, the quantities traded, and the equilibrium relative price.
- c) Due to a GPS malfunction, a US Navy battle group en route to Iraq mistakenly lands on Raiatea, doubling the island's population but not changing its production technology. Explain in detail how this event affects the gains from trade on each island.

Please use separate bluebook(s) for questions 4 – 7.

Question 4: Currency crises.

- a) Derive the equation $m = \ln e - \lambda \Delta \ln e + (p^* + \eta y - \lambda i^*)$ from its three constituent parts. Clearly state those three parts and briefly explain each of them.
- b) Using the equation from a) and an appropriate diagram, explain conceptionally why the crisis happens before the country runs out of foreign reserves. What is the fundamental reason for a currency crisis in this context?
- c) During the run-up to its crisis, the Argentinian government decreed that all private, dollar-denominated assets be converted into local currency. Discuss the rationale behind this measure.

Question 5: Exchange rate over-shooting.

- a) Briefly define what we mean by exchange rate over-shooting. The model we saw in class was first developed by Rudi Dornbusch in 1976. Describe the historical background against which Dornbusch developed his model.
- b) Suppose the central bank announces a permanent increase in the domestic money supply. Explain graphically how this policy shock leads to exchange rate over-shooting.
- c) Suppose alternatively that the foreign central bank increases its money supply. Using the same diagrams as under b), describe how this affects the exchange between the two countries.

Question 6: Consider a country, say Turkey, with an outstanding debt of 200 face value. With 80% probability Turkey will be able to repay its debt in full, with 20% probability it will be able to repay only half of it.

- a) What will be the price of Turkish bonds? In a suitable diagram, depict the price as a function of the face value of Turkey's total debt.
- b) Suppose an interested party offers Turkey to buy back 10% of its debt. How does this affect the price of Turkish bonds? How much does the interested party have to pay and who benefits how much?
- c) Suppose for political reasons, Turkey rejects the offer. To make matters worse, a war next door reduces its ability to repay its debt by 20 across the board. Does the proposal from b) still sound like a generous offer under such circumstances?

Question 7: Consider the following trilogy: a) an independent monetary policy, b) free flows of capital from and to the rest of the world, and c) a fixed exchange rate.

- a) Suppose a country enjoys a) and b). Using an appropriate model, discuss to what extent it can also enjoy c).
- b) Now, suppose a country enjoys b) and c). Using the same model, discuss to what extent it can enjoy a).
- c) Finally, suppose a country enjoys a) and c). Discuss to what extent it can enjoy b).