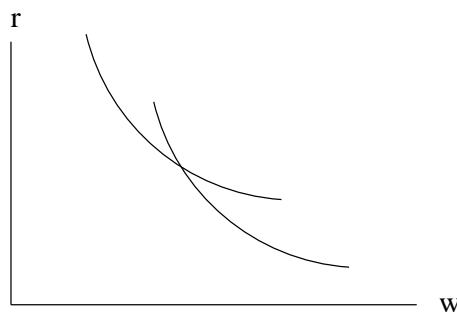# Final Exam

This is a three hour exam. There are eight 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: In the context of the Heckscher–Ohlin model, consider the Mussa diagram:

a) Why are we interested in the zero profit curves depicted in the diagram? What does a factor price vector to the southwest or northeast of a curve imply about that sectors's profits? Explain which curve corresponds to the capital and which to the labor intensive sector.

b) State the Stolper–Samuelson result. Use the diagram (or a copy thereof) to derive the magnification effect in prices related to the Stolper–Samuelson result.

c) The government enacts an import tariff. Which sector is the import sector? Depict the effects of the import tariff in the Mussa diagram for the small country case.

Question 2: The U.S. government recently introduced a 30% tariff on imports of steel. The U.S. is an important importer of steel in the world market (read large country assumption).

a) Graphically discuss the welfare effects of the tariff on the different domestic groups involved, i.e. consumers, producers, and the government. Show that the optimal tariff is greater than zero.

b) Show in a general equilibrium context (the PPF diagram) how the U.S. potentially increases its welfare by means of this import tariff.

c) Show that the world as a whole must be worse off, irrespective of whether other countries retaliate.

Question 3: Consider the Ricardo model of trade. The following information is given:

	North	South
Hightech	$a_{l,H}^N = 1$	$a_{l,H}^S = 10$
Agriculture	$a_{l,A}^N = 2$	$a_{l,A}^S = 4$
labor force	$L^N = 100$	$L^S = 400$

Furthermore, all consumers have preferences as expressed by $U(x_H, x_A) = x_H x_A$.

a) Derive the relative supply schedule and depict it graphically. Make sure to label the axes and provide exact numbers. Which country has the comparative advantage in producing hightech?

b) Determine the free trade equilibrium, i.e. the equilibrium relative price and the quantities of each commodity produced and consumed in both contries. Also, explicitly state the traded quantities.

c) Find the ratio of home to foreign wage under free trade. If migration were possible which way would it go? Determine the free migration labor force allocation across countries.

Question 4: Consider a highly indebted country. The face value of its debt is 90. The following table gives the amounts it can pay in different states of the world as well as their respective probabilities:

	bad state	good state
payment	30	90
probability	1/5	4/5

It has international reserves of 10 which it can use to carry out a buy back and which would be seized by its creditors in case of default.

a) What is the price of the country's debt before and after it anounces the buy back?

b) How are the gains distributed between the debtor and its creditors? As the country's finance minister, would you recommend the buy back?

c) Suppose the buy back reduces the probability of the bad state to zero. Discuss the desirability of a buy back in this case.

Question 5: The monetary approach to the exchange rate.

a) Depict uncovered interest parity and money market equilibrium in a diagram with returns on the horizontal axis, the exchange rate to the North, and real money to the South. Define and explain all curves (and lines) in your diagram.

b) Assuming sticky prices and using the diagram from a), explain in detail how an increase in the nominal supply of money leads to a change in the exchange rate. Does the exchange rate overshoot? Depict the time paths of nominal money supply, the price level, the exchange rate, and the domestic interest rate.

c) Suppose the foreign central bank expands foreign money supply at the same time. Analyze the effects of such a joint monetary expansion.

Question 6: Recall $m = \ln e - \lambda \Delta \ln e + (p^* + \eta y - \lambda i^*)$

a) Explain why a fixed exchange rate regime endogenizes the money supply and uses up monetary policy.

b) Describe mathematically or graphically when a country with a fixed exchange rate regime and chronic budget deficits will be attacked and forced to abandon its peg.

c) Suppose i^* is not given but varies with the foreign country's monetary policy. Analyze the implications of foreign monetary policy for the sustainability of the fixed exchange rate regime.

Question 7:

a) What accounts for the difference between GDP and GNP?

b) Derive the accounting identity relating private savings, the government's budget deficit, investment, and the current account.

c) Discuss both points of view on whether a current account deficit can be sustained indefinitely.

Question 8: Consider the international economics "economy". There are two sectors, the real and the monetary one. Each has its specific factor, real and monetary international econ professors. The mobile factor are the students who can work in either field.

a) In an appropriate diagram, show how many students work on the real side and how many on the monetary side. Also indicate what areas in your diagram represent the rents to all the groups involved.

b) The price of monetary international economics research increases due to heavy demand by some investments banks. How does this change affect the real income of the professors (real and monetary types) and in particular of the students?

c) Suppose students face a fixed cost of switching sectors. How does this affect your answer to part b)?