

### Final Exam (section 3)

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

**Question 1:** The Multi-Fibre Agreement (MFA: essentially a quota on imports of textiles) is about to expire. The US is currently considering the unilateral extension of the quota.

- a) Suppose the US is a “small” country. In a one-market (partial equilibrium) diagram, derive the effect of the removal of the quota on US national welfare. Discuss different possibilities regarding the quota rent.
- b) Suppose now that the US is a “large” country. How does this change your results from a)? In particular, what happens to the world market price if the quota is removed?
- c) State the Stolper-Samuelson result. Use this result to infer possible distributional consequences in the US and in the countries it imports textiles from.

**Question 2:** New Trade Theory.

- a) Contrast how old trade theory explains trade with the way new trade theory explains trade. What empirical observation led to the development of new trade theory?
- b) Explain how average cost and the price in a monopolistically competitive market depend on the number of companies. Why does one increase whereas the other decreases as companies become more numerous?
- c) In a diagram with average cost and price on the vertical and the number of companies on the horizontal axis, depict what happens to the number of companies and to the equilibrium price as the country opens up to trade with another country of equal size. Has the total number of companies in both countries increased or decreased?

**Question 3:** Consider two islands, Cozumel and Isla de las Mujeres. On Cozumel, it takes a worker 4 minutes to mix a piña colada and 8 minutes to roast a pollo. On Isla, it takes her counterpart 2 minutes to mix the drink and 5 minutes to roast the chicken. Let both islands have a workforce of 2,000 people, each working 500 minutes a day.

- a) Explain the difference between absolute and comparative advantage. Who has the absolute, who the comparative advantage in producing drinks and chicken?

- b) Derive the relative supply curve for both islands combined. Be sure to explicitly label your diagram, and for each segment of the supply schedule indicate the pattern of specialization.
- c) Cobb-Douglas preferences à la  $U = X_{pina} X_{pollo}$  on both islands give rise to a relative demand curve of the form  $p = 1/x$ . Find the free trade equilibrium: that is, the equilibrium relative price, the quantities produced, the quantities consumed, and the quantities traded.

**Question 4:** National Income Accounting.

- a) Derive the accounting identity relating private savings, the government's budget deficit, investment, and the current account.
- b) Explain how exports and imports (of commodities) enter the current account. How are purely financial transactions reflected in the current account?
- c) Returning to the relationship derived under a), suppose the government maintains a balanced budget. Discuss whether an ongoing capital inflow from abroad is sustainable in the long run depending on whether this flow goes towards investment or extra consumption.

**Question 5:** Monetary Model of the Exchange Rate.

- a) Using a two-part diagram with uncovered interest parity upstairs and the money market downstairs, depict the monetary model of the exchange rate. Be sure to label the axes and briefly explain all curves.
- b) Suppose prices are sticky. Describe how a permanent increase in nominal money supply affects the exchange rate. Depict the time paths of the exchange rate, the interest rate, the money supply, and the price level.
- c) We know that a simultaneous increase in money supply by two central banks does not affect the exchange rate between their countries. What if they act out of step, i.e. one increasing money supply earlier than the other?

**Question 5:** Currency crises.

- a) Show — graphically or mathematically — how a fixed exchange rate ties down monetary policy. Briefly list the pros and cons of a fixed exchange rate regime.
- b) Explain why a country with chronic budget deficits that are financed via the central bank's printing press will eventually be forced to abandon the fixed exchange rate regime.

- c) Explain the concept of the shadow exchange rate ( $\ln \tilde{\epsilon} = b^H + \lambda\mu$ ) and use it to show graphically why the fixed exchange rate regime collapses before the country slowly runs out of foreign reserves.

**Question 7: Debt Crises.**

|             | bad state | good state |
|-------------|-----------|------------|
| payment     | 60        | 120        |
| probability | 1/5       | 4/5        |

- a) What is the expected amount the country will pay back? What should consequently be the price of its debt in percentage terms. Give reasons why you would — or would not — buy its debt at this price.
- b) Suppose the IMF decides to buy back 20 (face value) of the country's debt. How much money does it need to carry out the buy back. What are the effects on the creditors and the country?
- c) Is there an incentive for the country to provoke such a crisis if it can expect the IMF to step in and forgive part of its debt? If so, do you see any way how the IMF could avoid this problem?