

# International economics (2012–2013)

## Final exam

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Surnames: \_\_\_\_\_

First name: \_\_\_\_\_

ID or passport: \_\_\_\_\_

Group: \_\_\_\_\_

Student from a foreign university (for example, Erasmus student):

Question	Points	Score
1	8	
2	8	
3	8	
4	8	
5	8	
Total:	40	

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## **Total points and exam duration**

The exam consists of **five questions**.

In total, it is possible to obtain up to **40 points**.

Duration of exam: **1 hour** (= 1,5 minutes per point or 12 minutes per question).

## **Publication of grades and revision session**

Information regarding the publication of grades and the revision session will be provided on the course website.

1. Consider the Ricardian model of international trade. Let  $\pi_{LA}$  be the productivity in the apple sector of the home country,  $\pi_{LB}$  the productivity in the banana sector of the home country,  $\pi_{LA}^*$  the productivity in the apple sector of the foreign country and  $\pi_{LB}^*$  the productivity in the banana sector in the foreign country. Productivity in a given sector is measured in terms of kilogrammes produced per hour of work. Please use this notation to answer the following questions.
- (a) What is the opportunity cost of apples in terms of bananas in each of the two countries? [1]
  
  - (b) Under what condition would the home country have an absolute advantage in the production of apples? [1]
  
  - (c) Under what condition would the home country have a comparative advantage in the production of apples? [1]
  
  - (d) Can it be beneficial for a country to engage in international trade even if it is less productive in absolute terms no matter what it produces? [1]
  
  - (e) Suppose that there are no restrictions on trade between the two countries and that the home country has an absolute and a relative advantage in the production of apples. Let  $P_A$  be the price of apples and  $P_B$  be the price of bananas in the world market.
    - i) Under perfect competition, what would be the wage of workers in the apple and banana sectors of the home country? [1]
  
    - ii) Under what condition or conditions will it be beneficial for workers in both countries to produce only apples? [1]
  
    - iii) Under what condition or conditions will it be beneficial for workers in both countries to produce different goods? [1]
  
    - iv) In the latter case, who will export what to whom? [1]

Total for Question 1: 8

2. There are different possible justifications for why international trade exists and why it is beneficial. Please state and explain two of them. (Hints: Please write clearly and to the point. Do not spend more than 8 to 10 minutes on this question. You may want to leave this question until the end of the exam when you have answered the other, more specific questions.)

(a) Justification 1:

[4]

(b) Justification 2:

[4]

Total for Question 2: 8

3. (a) What is the definition of the real exchange rate of country A vis-à-vis country B,  $Q^{AB}$ ? [2]  
State the definition also in logarithms.
- (b) Suppose we use Big Mac prices instead of price indices in order to calculate real exchange rates. If a Big Mac costs 1.00 euro in country A and 0.50 dollar in country B and if the nominal exchange rate of country A vis-à-vis country B is 0.75 dollar per euro, what is the real exchange rate of country A vis-à-vis country B? [2]
- (c) Suppose that the historical average real exchange rate of country A vis-à-vis country B is 3. Which value would the nominal exchange rate have to take in order for the real exchange rate to attain its long-run level? [2]
- (d) Suppose that we know the real exchange rates of country A vis-à-vis country B and of country A vis-à-vis country C, which are  $Q^{AB}$  and  $Q^{AC}$  respectively. What is the real exchange rate of country B vis-à-vis country C,  $Q^{BC}$ ? (Hint: Use the definitions of the real exchange rates  $Q^{AB}$ ,  $Q^{AC}$  and  $Q^{BC}$  to find the answer.) [2]

Total for Question 3: 8

4. (a) Write down the uncovered interest parity relation. [2]
- (b) Suppose the domestic central bank pursues a restrictive monetary policy, raising its interest rate by three percentage points from 2% to 5%, whereas the foreign central bank leaves its interest rate unaltered at 2%. Based only on the uncovered interest parity relation, what effect will the change of the domestic monetary policy have on the expected rate of depreciation of the domestic currency? Why? [3]
- (c) Suppose the domestic central bank raises its interest rate by three percentage points from 2% to 5%, but the foreign central bank wants to markets to believe that the foreign (!) exchange rate will depreciate by one percent over the next year. How does the foreign central bank have to set its interest rate? Show how have reached your answer. [3]

Total for Question 4: 8

Period	$z_t$	$c_t$	$\kappa_t$	$r_t$	$\Delta s_t$	$\Delta q_t$	$q_t$
0	0	0	0	0	0	0	0
1	0	-50	+100	-50	+0.5	+0.5	+0.5
2	-50	-100	+200	-50	+1.0	+1.0	+1.5
3	-200	-50	+300	-50	+0.5	+0.5	+2.0
4	-400	+600	-600	+400	-6.0	-6.0	-4.0
5	0	0	0	0	0	0	-4.0

Table 1: Currency flow model.

5. Based on table 1, which describes an empirical example of the currency flow model, answer the following questions.
- (a) Of the seven variables of table 1, which one is, or which ones are, exogenously given? [1]
- (b) Write down the equation that describes the movements of the current account. [1]
- (c) What will be the value of the current account in period 6,  $z_6$ ? [1]
- (d) Suppose domestic inflation,  $\pi_t$ , is 3% in all periods. Using the information from the table, what level does foreign inflation,  $\pi_t^*$ , take? Why? [1]
- (e) What does  $c_t$  stand for? What does it mean if  $c_t > 0$ . [1]
- (f) Given the other variables, how can  $c_t$  be determined? [1]
- (g) What does  $r_t$  stand for? What does it mean if  $r_t > 0$ . [1]
- (h) How high was the initial stock of foreign exchange reserves of the central bank at least? [1]

Total for Question 5: 8

