

International macroeconomics (undergraduate course) 2013–2014 — Final exam

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8 January 2014

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. (a) Write down the equations of the monetary model with fixed prices and indicate exogenous variables by putting a bar on top of them (for example, \bar{x} instead of x). [6]

- (b) How is the monetary model with fixed prices also called and why? [2]

Total for Question 1: 8

2. Suppose that the long-run budget constraint holds so that $PV_1(Y) + PV_1(W) = PV_1(GNE)$.
- (a) What does Y stand for? [1]

 - (b) What does GNE stand for and what are its components? [1]

 - (c) Suppose that $W_0 = 0$. In class we found that a country that has a stable income but receives a positive income shock in period 1 runs a current account *surplus* in period 1 and a current account *deficit* in all the following periods. What is the intuition? (Hint: use the definition of the current account that relates the current account to Y and GNE .) [2]

 - (d) We also found that a country that makes an investment in period 1 and consequently receives a higher income from period 2 onwards runs a current account *deficit* in period 1 and a current account *surplus* in all the following periods. What is the intuition in this case? [2]

 - (e) Which of the two cases describes the experience of countries hit by currency crises better, that of part c or that of part d? [2]

Total for Question 2: 8

3. (a) State the Maastricht criteria. It is not necessary to write down the exact definition of each criterion; a very brief description of each criterion's content is sufficient. [5]
- (b) Why might it be a good idea to require that the countries forming a monetary union have similar inflation rates? [2]
- (c) During the decade after the introduction of the euro, Spain had an annual inflation rate that was about one percentage point higher than that in Germany. Given that the nominal interest rate was the same in both countries (as a consequence of both countries pertaining to the eurozone), what did this imply for both countries' real interest rates? [1]

Total for Question 3: 8

4. (a) What is an asset? [1]
- (b) What is a *financial* asset? [1]
- (c) If I invest in an asset with a constant return of 4% and reinvest the gross return every year, how many years do I have to wait approximately until my initial investment is doubled? [1]
- (d) The main asset characteristics are liquidity, return and risk. Why is it impossible to find assets that are at the same time highly liquid, highly profitable and riskless? [1]
- (e) Suppose foreign bonds offer a return of 2% and domestic bonds offer the same return and risk. Suppose also that the uncovered interest parity (UIP) holds.
- i) If the return on the foreign bonds rises to 4% and the return on domestic bonds stays constant at 2%, what would be the expected rate of depreciation of the domestic currency? [2]
- ii) If the domestic bonds are bought and sold in the secondary market so that their interest rate is predetermined and if the expected rate of depreciation of the domestic is zero, how is it still possible that the UIP holds when the return on the foreign bonds rises from 2% to 4%? [2]

Total for Question 4: 8

| | Y_t^H | C_t^H | $K_t^{H,d}$ | ΔK_t^H | K_t^H | Δz_t^{HF} | $e_t^{HF,d}$ | Δe_t^{HF} | e_t^{HF} | Δm_t^{HF} | m_t^{HF} | $\Delta b_t^{\overline{HF}}$ | $b_t^{\overline{HF}}$ | s_t |
|----|---------|---------|-------------|----------------|---------|-------------------|--------------|-------------------|------------|-------------------|------------|------------------------------|-----------------------|-------|
| 0 | exog. | | exog. | | 5000 | | exog. | | -5000 | | 0 | | 2000 | 0 |
| 1 | 1000 | 1000 | 5000 | 0 | 5000 | 0 | -5000 | 0 | -5000 | 0 | 0 | 0 | 2000 | 0 |
| 2 | 1000 | 1000 | 5000 | 0 | 5000 | 0 | -5000 | 0 | -5000 | 0 | 0 | 0 | 2000 | 0 |
| 3 | 1000 | 1000 | 5000 | 0 | 5000 | 0 | -5000 | 0 | -5000 | 0 | 0 | 0 | 2000 | 0 |
| 4 | 1000 | 1000 | 7500 | 1000 | 6000 | -1000 | -7500 | -2500 | -7500 | 0 | 0 | 1500 | 3500 | 0 |
| 5 | 1000 | 1000 | 10000 | 1000 | 7000 | -1000 | -10000 | -2500 | -10000 | 0 | 0 | 1500 | 5000 | 0 |
| 6 | 1000 | 1000 | 10000 | 1000 | 8000 | -1000 | -10000 | 0 | -10000 | 0 | 0 | -1000 | 4000 | 0 |
| 7 | 1000 | 1000 | 10000 | 1000 | 9000 | -1000 | -10000 | 0 | -10000 | 0 | 0 | -1000 | 3000 | 0 |
| 8 | 1000 | 1000 | 10000 | 1000 | 10000 | -1000 | -10000 | 0 | -10000 | 0 | 0 | -1000 | 2000 | 0 |
| 9 | 1000 | 1000 | 7500 | -500 | 9500 | 500 | -7500 | 2500 | -7500 | 0 | 0 | -2000 | 0 | 0 |
| 10 | 1000 | 1000 | 5000 | -500 | 9000 | 500 | -5000 | 2500 | -5000 | -2000 | -2000 | 0 | 0 | -20 |
| 11 | 1000 | 1000 | 5000 | -500 | 8500 | 500 | -5000 | 0 | -5000 | 0 | -2000 | 500 | 500 | -20 |
| 12 | 1000 | 1000 | 5000 | -500 | 8000 | 500 | -5000 | 0 | -5000 | 0 | -2000 | 500 | 1000 | -20 |

Table 1: Currency crisis in the currency flow model.

5. (a) Consider table 1. Plot the variable $b_t^{\overline{HF}}$ in a graph with time on the horizontal axis and $b_t^{\overline{HF}}$ on the vertical axis. Then turn the page to answer the second and third part of this question.

[2]

(b) What does the variable $b_t^{\overline{HF}}$ stand for? [1]

(c) Why does the variable $b_t^{\overline{HF}}$ evolve over time in the way it does? [5]

Total for Question 5: 8

