Written Exam for the B.Sc. or M.Sc. in Economics 2010-I

International Monetary Economics

Master's Course

January 4, 2010

(4-hour closed book exam)

Please note that the language used in your exam paper must correspond to the language of the title for which you registered during exam registration. I.e. if you registered for the English title of the course, you must write your exam paper in English. Likewise, if you registered for the Danish title of the course or if you registered for the English title which was followed by "eksamen på dansk" in brackets, you must write your exam paper in Danish.

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International Monetary Economics

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Number of questions: This exam consists of 3 questions.

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1. **Which of the following statements are correct? Remember to provide a brief explanation.**
   (a) A sterilized open market operation purchase of domestic assets by the ECB must according to *Flexible Price Monetary Model* lead to a depreciation of the euro.
   (b) A sterilized open market operation purchase of domestic assets by the ECB must according to *the Portfolio Balance model* lead to a depreciation of the euro.
   (c) UIP is not derived using arbitrage arguments as CIP is.
   (d) The Forward Premium Puzzle refers to the empirical finding that the high interest rate currency has tended to appreciate in the future.
   (e) Speculation on the foreign exchange market is always destabilizing.

2. **The Dornbusch overshooting model**
   Consider the following version of the Dornbusch overshooting model

$$\dot{s}^e = r - r^* \tag{1}$$

$$\dot{s}^e = \theta\left(\bar{s} - s\right) \tag{2}$$

$$m - p = \eta y - \sigma r \tag{3}$$

$$y^d = \alpha\left(s - p\right) + \beta = \alpha q + \beta \tag{4}$$

$$\dot{p} = \pi\left(y^d - \bar{y}\right) \tag{5}$$

   where notation is standard.
   (a) Comment on the five equations above.
   (b) Use the model to show that

$$p = m - \eta y + \sigma r^* - \sigma\theta\left(s - \bar{s}\right) \tag{6}$$

   and

$$\dot{p} = \pi\left(\alpha\left(s - p\right) - \bar{y} + \beta\right). \tag{7}$$

   Comment also on these equations.

(c) Derive the equilibrium values (or steady–state values) of the nominal exchange rate ($\bar{s}$) and the price level ($\bar{p}$) and show that $\frac{d\bar{(s)}}{dm} = \frac{d\bar{(p)}}{dm} = 1$ and that $\frac{d\bar{s}}{d\beta} = -\frac{1}{\alpha}$. Interpret your results.

(d) Derive an explicit expression for the overshooting effect. What factors determine the extent of overshooting?

(e) Does the speed of adjustment π affect the size of the overshooting effect? Motivate your answer carefully.

3. **Currency crisis model.**

Consider the third generation currency crisis model developed by Aghion, Bacchetta and Banerjee. The model is comprised of two equations, the IPLM–equation

$$E_1 = \frac{1+i^*}{1+i_1}\frac{M_2^S}{m^d(y_2, i_2)}$$

and the W–curve

$$y_2 = f\left((1+\mu)(1-\alpha)\left\{y_1 - (1+r_0)\,d_1^c - (1+i^*)\,\frac{E_1}{P_1}(d_1 - d_1^c)\right\}\right)$$

where notation is standard.

(a) Explain briefly what the two relations above imply and how they are derived. Main assumptions should also be stated.

(b) It can be shown that the IPLM–curve is downward sloping and convex whereas the W–curve is downward sloping and concave. Depict these two curves in the y_2–E_1 plane. Are there multiple equilibria? If so, state in words the necessary condition.

(c) Show, using graphical analysis, how a currency crisis can occur. What is the optimal monetary policy response to a speculative attack?

(d) The analysis above has been conducted under the assumptions of floating exchange rates. Assume now that the exchange rate is fixed. How does this assumption affect the two curves stated above, the IPLM–curve and the W–curve? Show how a speculative attack may lead to a currency crisis.

(e) What is causing a currency crisis in this model? Compare to both first and second generation currency crisis models.