Written Exam at the Department of Economics summer 2017

Economics of Exchange Rates

Final Exam

August 30, 2017

(3-hour closed book exam)

Please note that the language used in your exam paper must correspond to the language for which you registered during exam registration.

This exam question consists of 3 pages in total

Written exam for the M. Sc in Economics
Economics of Exchange Rates

August 30, 2017

Number of questions: This exam consists of 2 questions.

1. **Evaluation of fixed and flexible exchange–rate regimes and monetary unions**

   Consider the following open–economy model:

   $$Md_t = Pi_t + \eta Y_t - \sigma r_t + U_t^1$$

   $$Pi_t = \alpha P_t + (1 - \alpha)(S_t + P_t^*)$$

   $$Yd_t = \theta(s_t + P_t^* - P_t) - \beta(r_t + P_t - P_{t+1|t}) + \pi Yn + U_t^2$$

   $$Ys_t = \phi(P_t - W_t) + U_t^3$$

   $$O(P) = (P - Pn)^2$$

   where notation is standard. Assume that $\eta(\theta + \beta) > \alpha$.

   (a) Give a brief interpretation of the main assumptions and economic mechanisms underlying the equations.

   (b) Derive the aggregate demand curve, the money demand curve and the aggregate supply curve and illustrate the model in the price–output plane. Comment!

   (c) What is the optimal exchange rate regime if the economy is affected by aggregate demand or money demand shocks? Explain carefully!

   (d) Assume now that $\eta(\theta + \beta) < \alpha$. Illustrate the model graphically. What is the optimal exchange rate regime if the economy is affected by aggregate demand or money demand shocks? Explain carefully!

   (e) Does the exchange rate regime affect the macroeconomy? Summarize the main lessons from the empirical literature.

2. **Exchange rate determination and microstructure**

   Consider the the standard flexible price monetary model (FPMM)

   $$s_t = (m_t - m_t^*) - \kappa(y_t - y_t^*) + \theta(i_t - i_t^*) \tag{1}$$

   and the UIP relation

   $$i_t - i_t^* = \mathbb{E}[\Delta s_{t+1} \mid \Omega_t] \tag{2}$$

   where notation is standard.

(a) Explain the rationale behind the FPMM model.

(b) Show that the model above can be written as

$$s_t = (1-b) \sum_{i=0}^{\infty} b^i \mathbb{E}\left[f_{t+i} \mid \Omega_t\right] \tag{3}$$

where

$$f_{t+i} = \left(m_{t+i} - m_{t+i}^*\right) - \kappa \left(y_{t+i} - y_{t+i}^*\right)$$

and

$$b = \frac{\theta}{1+\theta}$$

(c) Explain how the spot exchange rate is determined according to the microstructure approach. What are the main assumptions about information available to market participants?

(d) Assume that the information set Ω_t above only includes public information. Show that the exchange rate equation in question (b) can be rewritten as

$$\Delta s_{t+1} = \frac{1-b}{b} \left(s_t - \mathbb{E}\left[f_t \mid \Omega_t^D\right]\right) + \varepsilon_{t+1}$$

where

$$\varepsilon_{t+1} = \frac{1-b}{b} \sum_{i=1}^{\infty} b^i \left(\mathbb{E}\left[f_{t+i} \mid \Omega_{t+1}^D\right] - \mathbb{E}\left[f_{t+i} \mid \Omega_t^D\right]\right).$$

(e) Interpret the two equations in (d). Explain how these expressions relate to the microstructure approach.

(f) Summarize the empirical evidence on the relationship between order flows and spot exchange rates.