

Written Exam for the M.Sc. in Economics summer 2013

International Finance

Master's Course

August 20, 2013

(3-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.

This exam question consists of 3 pages in total

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Number of questions: This exam consists of 3 questions.

1. **Which of the following statements are correct? Remember to provide a brief explanation.**

- (a) A swap of foreign bonds for domestic bonds in the portfolios held by the central bank and the households cannot affect the exchange rate or the interest rate.
- (b) If lagged changes in exchange rates predict order flows, then order flows cannot convey price relevant information to dealers.
- (c) There is no difference between order flows and trading volume according to the microstructure approach to exchange rate determination.

2. **Exchange rates and macro data releases**

Consider the following definition of the risk premium

$$\delta_t = E[\Delta s_{t+1} | \Omega_t] + \hat{r}_t - r_t. \quad (1)$$

- (a) Explain the underlying assumptions behind this relation and the variables included.
- (b) Show that this equation can be written as

$$\varepsilon_t = E[\varepsilon_{t+1} | \Omega_t] + \eta_{t,t+1} \quad (2)$$

where

$$\eta_{t,t+1} = (\hat{r}_t - E[\Delta \hat{p}_{t+1} | \Omega_t]) - (r_t - E[\Delta p_{t+1} | \Omega_t]) - \delta_t$$

under the assumption that the real exchange rate is $\varepsilon_t = s_t + \hat{p}_t - p_t$ and the real interest rates are $r_t - E[\Delta p_{t+1} | \Omega_t]$ and $\hat{r}_t - E[\Delta \hat{p}_{t+1} | \Omega_t]$.

- (c) Iterating forward, this expression can be written as

$$\varepsilon_t = \eta_{t,t+1} + \sum_{j=1}^{\infty} \mathbb{E} [\eta_{t+j,t+j+1} \mid \Omega_t] + \varepsilon_t^{\infty}$$

where $\varepsilon_t^{\infty} = \lim_{h \rightarrow \infty} \mathbb{E} [\varepsilon_{t+h} \mid \Omega_t]$. Use this expression to discuss how new information on macro data affects the spot exchange rate. To do this, compute the unexpected variation in the real exchange rate at some point between t and before the start of period $t + 1$, i.e., point $t + \epsilon$ where $\epsilon < 1$. Assume also that the price level is unchanged such that any variation in the real exchange rate reflects variation in the spot rate, i.e., $s_{t+\epsilon} - s_t = \varepsilon_{t+\epsilon} - \varepsilon_t$. Why does the spot exchange rate respond to new macro data released during the period t until $t + \epsilon$?

3. Microstructure and central bank intervention

- (a) How can we explain why central banks use secret interventions on the foreign exchange market?
- (b) Use Lyons and Evans microstructure model to explain how a secret central bank intervention affects quoted prices.