Written Exam for the B.Sc. or M.Sc. in Economics autumn 2011-2012

International Monetary Econom cs

Master's Course

January 9, 2011

(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.

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University of Copenhagen
Department of Economics
Michael Bergman

Written exam for the M. Sc in Economics
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) The efficient market hypothesis can be reduced to a joint hypothesis of rational expectations and risk-neutrality.
   (b) The Purchasing Power Puzzle is that PPP does not hold in the short-run but holds in the long-run.
   (c) The Balassa-Samuelson theory predicts that productivity improvements in the traded sector lead to a real appreciation of the currency.
   (d) According to the Flexible Price Monetary Model, a higher domestic interest rate leads to an appreciated currency since a higher interest rate tends to attract capital from abroad.

2. **Optimum currency area**
   (a) What are the benefits and costs of joining or forming a monetary union?
   (b) Describe and explain the economic rationale of the optimum currency area criteria suggested in the literature.

3. **Third generation currency crisis model**
   Consider the real sector in the ABB model. The production function is

$$y_t = f((1+\mu_t)w_t). \tag{1}$$

   At the end of period t, nominal operating profits net of financing costs are given by

$$\Pi_t = p_t y_t - (1+i_{t-1})\, p_{t-1} d_t^c - (1+i^*)\, \frac{s_t}{s_{t-1}} p_{t-1} d_t^f. \tag{2}$$

   Total net wealth available for financing production in any period after start–up is

$$w_t = (1-\alpha)\, \frac{\Pi_{t-1}}{p_{t-1}}. \tag{3}$$

   Assume that PPP holds *ex ante* but not necessarily *ex post*. Notation is standard.

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

(b) Show that the production function can be written as

$$y_t = f\left((1+\mu_t)(1-\alpha)\left[y_{t-1} - (1+i_{t-2})\frac{p_{t-2}}{p_{t-1}}d^c_{t-1} - (1+i^*)\frac{s_{t-1}}{p_{t-1}}d^f_{t-1}\right]\right) \quad (4)$$

and explain the economic rationale behind this relation.

(c) Money market equilibrium implies that

$$\frac{m^s_t}{p_t} = m^d(y_t, i_t). \quad (5)$$

Assume also that the nominal exchange rate is a martingale, i.e., $E_t(s_{t+j}) = s_t$ for any t and $j \geq 1$. Derive the implied LM–curve.

(d) Assume that the firm decides not to default if the net expected revenue exceeds the net expected revenue under default, i.e.,

$$p_t y_t - (1+i_{t-1})\, p_{t-1} d_t \geq p_t y_t - c p_t k_t - q\,(1+i_{t-1})\, p_{t-1} d_t.$$

Show that this expression implies that the credit multiplier can be written as

$$\mu_t = \frac{c}{(1-q)\,(1+i_{t-1})\,\frac{p_{t-1}}{s_{t-1}} - c}.$$

Give an interpretation of this relation.

(e) It can be shown that the slope of the W–curve in (4) can be written as

$$\frac{\partial s_t}{\partial y_{t+1}} = \frac{p_t}{\sigma f'(k_{t+1})\,(1-\alpha)(1+\mu)\left[\frac{\mu'}{1+\mu}\Pi_t - (1+i^*)\,d^f_t\right]}. \quad (6)$$

Illustrate the model (the LM–curve and the W–curve) in the output–exchange rate plane. Can there be a currency crisis in this model? Explain carefully!

(f) What is the optimal monetary policy response to an emerging currency crisis in the model?