International macroeconomics and finance (postgraduate course) 2015–2016 — Final exam

Nikolas A. Müller-Plantenberg*

5 April 2016, 10.00

Surname: _____

First name: _____

ID or passport number: _____

Group: _____

Question	Points	Obtained
1	8	
2	8	
3	8	
4	8	
5	8	
Total	40	

Instructions

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).

*E-mail: nikolas@mullerpl.net. Address: Faculty of Economics and Business Administration, Universidad Autónoma de Madrid, 28049 Cantoblanco, Madrid, Spain.

1. (a) Which are the four main sub-balances, or rubrics, of the balance of payments as it is published by organizations such as the IMF or the OECD? [1]

   (b) Which are the four main sub-balances of the balance of payments according to the currency flow model? When answering this question, indicate also to which of the four main sub-balances each of the following variables belongs: z_1^{H}, e_1^{HF}, e_1^{FH}, b_1^{HF}, b_1^{FH}, m_1^{HF}, $b_1^{\bar{\mathrm{H}}\mathrm{F}}$, $m_1^{\mathrm{F}\bar{\mathrm{H}}}$, $b_1^{\bar{\mathrm{F}}\mathrm{H}}$ and $m_1^{\mathrm{H}\bar{\mathrm{F}}}$. [2]

   (c) According to the currency flow model, what is international cash flow? Define international cash flow in terms of the variables mentioned in part b of this question. [1]

   (d) How does international cash flow normally evolve before and during a currency crisis? [1]

   (e) Currency crises are typically associated with deep recessions in the afflicted economies. Which model of currency crises do you think is better suited to explain this fact, the monetary model or the currency flow model. Explain your answer briefly. [3]

Total of question 1: [8]

2. (a) The intertemporal approach to the current account yields the following solution for consumption in period 1:

$$C_1 = \frac{1}{1+\beta}\left(Y_1 + \frac{1}{1+r}Y_2\right). \tag{1}$$

i) State and explain the effect of β on consumption in period 1, C_1. [1]

ii) State and explain the effect of r on consumption in period 1, C_1. [1]

(b) Now let us turn to the determination of the current account.

i) Using the formula for consumption in period 1 above, derive the formula for the current account in period 1, CA_1. (Hint: Use the national income identity.) [2]

ii) State and explain the effect of β on the current account in period 1, CA_1. [2]

iii) State and explain the effect of r on the current account in period 1, CA_1. [2]

Total of question 2: [8]

3. (a) Using diagrams with time, t, on the horizontal axis, draw the evolution of the following variables in the monetary model of currency crises: m_t, d_t, ρ_t and s_t. [6]

(b) What happens to official reserves at the time of the speculative attack according to the monetary model of currency crises? Explain also why it happens. [2]

Total of question 3: [8]

4. This question is based on the model that proposes the "new rule to the current account".

   (a) Consider the following Bellman equation of the model: [1]

$$[1]V(a_0) = \max_{[2],k_0,k_0^*} \left\{ [\pi k_0 + \pi^* k_0^* + [3](a_0 - k_0 - k_0^*)]V_{a_0} + \frac{1}{2}\left[k_0^2\zeta^2 + k_0 k_0^* \zeta\zeta^*[4] + (k_0^*)^2(\zeta^*)^2\right] V_{a_0 a_0} \right\}. \quad (2)$$

   Which variables do the numbers in squared brackets ([1], [2], [3] and [4]) represent?

   (b) Derive the first order condition for k_0, and underline the marginal benefit of an increase in k_0 with a solid line (—) and the marginal cost with a dashed line (- - -), assuming that the correlation of the returns on domestic and foreign capital is positive. [2]

   (c) Show that the following holds according to the model (you may use the blank pages at the end of the exam for preliminary calculations): [2]

$$da_0 - dk_0 = \frac{a_0 - k_0}{a_0} \times da_0. \quad (3)$$

   (d) What do da_0, dk_0 and $(da_0 - dk_0)$ represent? [1]

   (e) Under what condition is a country a creditor country? [1]

   (f) According to equation 3, what can be said about the effect of an increase in wealth on the balance of payments of a creditor country? [1]

Total of question 4: [8]

5. (a) Draw a diagram to show what it means to invest by ”going short”, or holding a ”short position”, in an asset. Assuming that the asset yields dividends, what is the overall return on the asset? [3]

(b) Draw an analogous diagram to show what it means to invest by ”going long”, or holding a ”long position”, in an asset. Assuming that the asset yields dividends, what is the overall return on the asset? [3]

(c) Suppose an investor wants to build a portfolio consisting of two assets. Under what circumstances may it be advantageous to go long in one asset and short in the other one? [1]

(d) The return correlations between international assets tend to be positive and international investors hold mostly long positions of different assets. Is this a contradiction or can it make sense? [1]

Total of question 5: [8]