International economics (2018–2019)
Final exam

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16 January 2019, 9.00

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).

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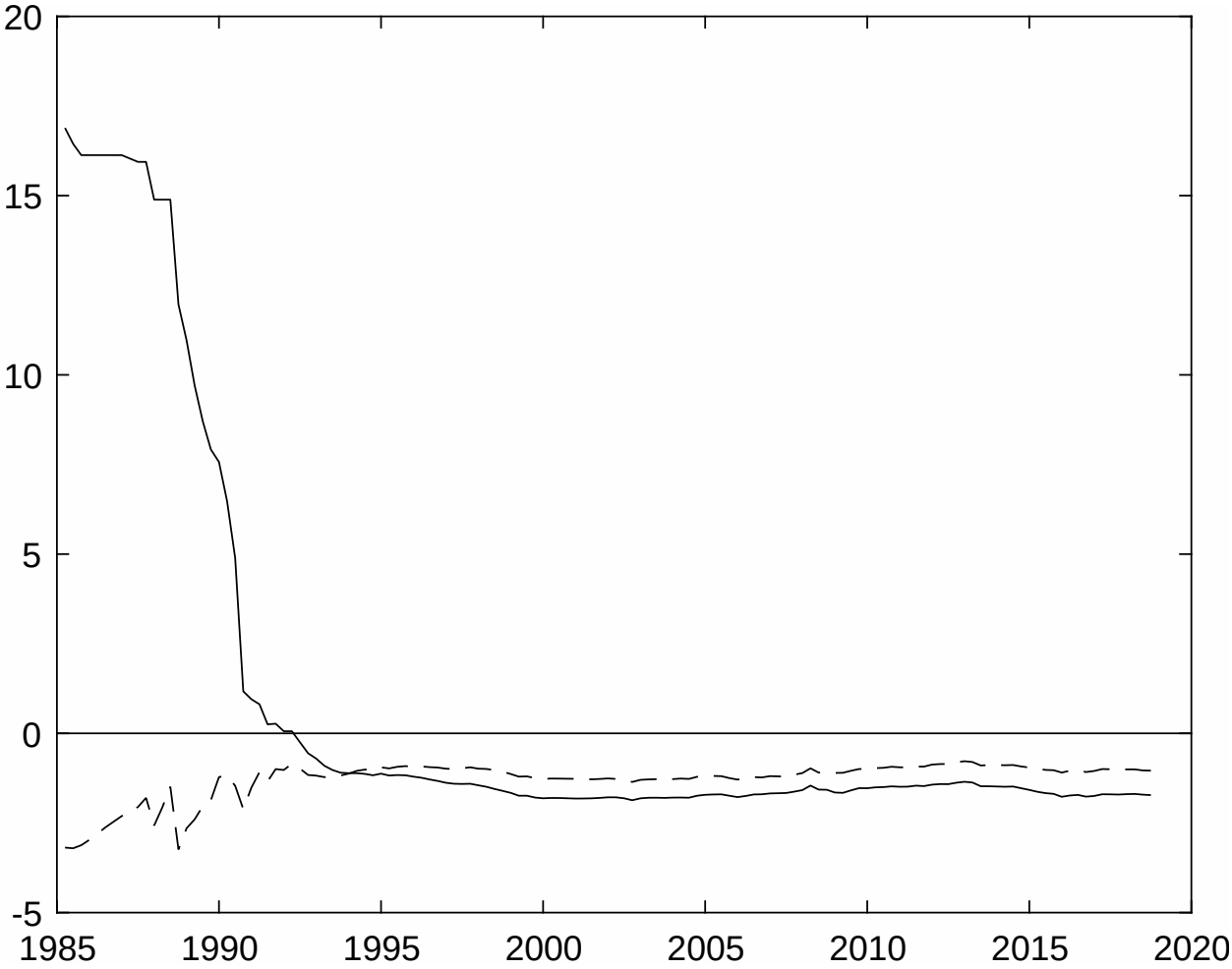

Figure 1: Nominal and real exchanges rates of Peru. Source: International Financial Statistics (IMF).

1. Figure 1 shows the following two variables:

   - The nominal exchange rate of Peru vis-à-vis the United States, measured in US dollars per Peruvian nuevo sol (or equivalent amount of Peru's previous currencies, the Peruvian sol from 1863 to 1985 and the Peruvian inti from 1985 to 1991):

     s_t.

   - The real exchange rate of Peru vis-à-vis the United States (that is, the ratio of the Peruvian and US consumer price levels, where both price levels are measured in the same currency):

     q_t.

   Note that the nominal and real exchange rates are measured in logarithms to the base 2. Remember that $\log_2(0.25) = -2$, $\log_2(0.5) = -1$, $\log_2(1) = 0$, $\log_2(2) = 1$, $\log_2(4) = 2$, $\log_2(8) = 3$ etc. In other words, a rise by one unit implies a 100% increase and a fall by one unit a 50% decrease.

Now answer the following questions:

(a) Which variables do the solid and dashed lines in figure 1, respectively, represent? State the reason for your answer. [2]

(b) Peru experienced a hyperinflation in the late 1980s and early 1990s. Use formulas of the nominal and real exchange rates and indicate with arrows beneath the variables why the nominal and real exchange rates behaved in the way shown in figure 1. [2]

(c) Approximately by what factor will the Peruvian price level have risen between 1985 and 1995? Remember that the variables in figure 1 are measured as logarithms to the base 2. [1]

(d) Based on the data shown in figure 1, would you accept or reject the hypothesis of purchasing power parity (PPP) for the period since 1985? [3]

Total of question 1: [8]

2. Please answer the following two questions on the patterns of international trade.

   (a) Does inter-industry trade between two countries reflect comparative advantage or economies of scale? Explain briefly. [2]

   (b) Does intra-industry trade between two countries reflect comparative advantage or economies of scale? Explain briefly. [2]

Please answer the following four questions on the purchasing power of a euro in the eurozone and in Japan, assuming that S is the nominal exchange rate of the euro vis-à-vis the yen, P^{H} the price level in the eurozone and P^{F} the price level in Japan. In each of the four questions, you may just state the relevant equations; in other words, there is no need to write any explanatory text.

   (c) What is the purchasing power of a euro in the eurozone? [1]

   (d) What is the purchasing power of a euro in Japan? [1]

   (e) If the purchasing power of a euro is the same in the eurozone and in Japan, what can we say about the nominal exchange rate, S? [1]

   (f) If the purchasing power of a euro is greater in the eurozone than in Japan, what can we say about the real exchange rate, Q? [1]

Total of question 2: [8]

3. Consider two countries with the following unit labour requirements in the production of cheese and wine:

	Cheese	Wine
Home country	$a_{LC} = 2$ hours per kg	$a_{LW} = 4$ hours per litre
Foreign country	$a^*_{LC} = 12$ hours per kg	$a^*_{LW} = 6$ hours per litre

Suppose that both the price of cheese, P_C, and that of wine, P_W, are 12 euros.

(a) What is the opportunity cost of producing cheese instead of wine in the home country? [1]

(b) What is the opportunity cost of producing cheese instead of wine in the foreign country? [1]

(c) How much wine could the home country obtain by producing it itself? [1]

(d) How much wine could the home country obtain by producing cheese and exchanging it for wine? [2]

(e) Should the home country in this specific example produce wine itself or specialize in the production of cheese? [1]

(f) What would the answer to the last question be if the price of wine, P_W, was 48 euros instead of 12 euros? [2]

Total of question 3: [8]

4. (a) Give an example of an international transaction that leads to a rise in CA_t and a rise by the same amount in Δm_t^{HF}. [2]

(b) Consider an international transaction that leads to a rise in Δe_t^{HF} and a fall by the same amount in Δm_t^{HF}.

i) Give an example of such a transaction. [2]

ii) Is this transaction a "capital inflow" or a "capital outflow". [1]

(c) Consider an international transaction that leads to a fall in $\Delta b_t^{\bar{\text{H}}\bar{\text{F}}}$ and a rise by the same amount in Δm_t^{HF}.

i) Give an example of such a transaction. [2]

ii) What could be the purpose of this transaction? [1]

Total of question 4: [8]

5. In the currency flow model, the nominal exchange rate is determined as follows:

$$s_t = -(p_t^{\text{H}} - p_t^{\text{F}}) + \xi m_t^{\text{HF}}. \tag{1}$$

The balance of payments identity is given by:

$$\Delta z_t^{\text{HF}} = \Delta e_t^{\text{HF}} + \Delta b_t^{\text{HF}} + \Delta m_t^{\text{HF}} + \Delta b_t^{\bar{\text{H}}\bar{\text{F}}}. \tag{2}$$

(a) Very briefly, why do we say that the change in net foreign assets, Δz_t^{HF}, is equal to the current account, CA_t? [2]

(b) Using the variables of equation 2, define net capital inflows. Please write just the formula. [1]

Net capital inflows $=$ (3)

(c) Solve 2 for net money inflows, Δm_t^{HF}, and then explain what effect the current account balance, capital flows and official intervention have on this variable. [3]

$\Delta m_t^{\text{HF}} =$ (4)

i) Current account surplus:

ii) Capital inflow:

iii) Acquisition of official reserves by the central bank:

(d) Explain briefly why it takes time for, say, a current account deficit to produce a substantial decline in the exchange rate. [2]

Total of question 5: [8]