

NAME:

STUDENT ID:

Economics 103 — Spring 2005
International Monetary Relations
First Midterm Exam
April 26, 2005

Time: 80 minutes
Total score: 80 points

1 The Current Account: 10 minutes

The national accounting identity relates national income to its uses $Y = C + I + EX - IM$. You may ignore the government for simplicity. The current account is defined as $CA = EX - IM$.

- Using the above relationships, derive an expression for domestic savings. What are the two uses to which domestic savings can be applied in an open economy?
- Suppose domestic residents are net foreign investors. What must be true about the current account? Given that domestic gross investment I cannot be negative, are domestic savings positive or negative?
- Is the Current Account a stock or a flow? Is Net Foreign Wealth a stock or a flow? Suppose domestic residents are net foreign investors, how does their Net Foreign Wealth change?

2 Covered and Uncovered Interest Parity: 10 minutes

State the Uncovered Interest Parity condition and the Covered Interest Parity condition.

- Which variables differ between the two?
- Why is one condition called covered and the other uncovered?
- Which condition is more likely to fail? State two assumptions that explain the restrictiveness of the less general condition.

3 No Arbitrage and Covered Interest Parity

Consider the following investment position, where E is the nominal spot exchange rate and F the nominal forward exchange rate on a 30-day contract.

1. Borrow E USD on the US market for $E(1+R)$ in 30 days
 2. Deposit 1 EUR at a European bank for EUR $1+R^*$ in 30 days
 3. Exchange the borrowed E USD for 1 EUR on the spot market
 4. Enter a forward contract over $(1+R^*)$: Have someone agree to pay you USD $F(1+R^*)$ in 30 days in exchange for EUR $(1+R^*)$ in 30 days
 5. Pay $E(1+R)$, receive $F(1+R^*)$
- For steps 2 through 4, state how they remove risk or cancel investment.
 - State the Covered Interest Parity (CIP) condition. In which way does CIP have to fail so that the above investment position returns an arbitrage on step 5? Will E appreciate or depreciate to restore CIP?

4 Changes in Expectations: 10 minutes

The country Dollaridor manages its currency Peso so that it remains at an exchange rate of 1 to the US dollar. Use diagrams showing Dollaridor's domestic real money holdings, along with the nominal exchange rate and expected currency returns, to substantiate your answers to the following scenarios.

- Investors suddenly learn that the newly elected president of Dollaridor's monetary authority plans to reduce domestic money supply when taking office in three months, irrespective of US monetary policies. Monetary policy until then is expected to remain unaltered. How does the current nominal Peso/dollar exchange rate respond?
- If the Federal Reserve is also expected to pursue a monetary contraction within three months, how would your answer change?

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5 Foreign Output and the Exchange Rate: 10 minutes

Foreign real national income $Y^{\text{GNP},*}$ drops temporarily but expectations of the future exchange rate remain unchanged. What will happen to the foreign nominal interest rate in the *short term* and in the *long term* if foreign money supply remains unaltered? [You may but need not use a diagram for foreign real money holdings and the foreign nominal interest rate to substantiate your answer.]

Use diagrams showing domestic real money holdings, along with the nominal exchange rate and expected currency returns, to analyze the *short term* and the *long term* effects on the domestic nominal interest rate, the domestic price level, and the nominal exchange rate.

6 Oil Price Shock: 10 minutes

The world economy suffers a *permanent* oil price shock, a permanent increase in the relative price of crude oil relative to all other goods and services. Suppose the resulting price inflation is the same throughout the world. Use a suitable money-market and foreign-exchange-market diagram to answer the following questions.

- Suppose domestic monetary policy is unchanged and domestic output is unaffected. How does the domestic nominal interest rate adjust?
- Suppose foreign monetary policy is unchanged and foreign output is unaffected. How do the foreign nominal interest rate and the nominal spot exchange rate adjust? [*Hint:* It may be helpful to write down Uncovered Interest Parity in its explicit form.]
- If domestic output contracts more strongly in response to the oil price shock than foreign output, how would domestic and foreign interest rates and the nominal exchange rate respond? [You may consider foreign output unchanged.]

7 Adjustment under the Gold Standard: 10 minutes

Consider two countries, Home and Foreign, during the international gold standard. The central bank in each country offers a fixed currency price in terms of gold (gold parity) and does not adjust it. This implies that the nominal exchange rate between Home and Foreign is fixed. Let the Home and Foreign price levels be P and P^* and consider them completely *flexible*.

- Suppose the Foreign central bank increases its money supply. State the definition of Home's real exchange rate q . What is the immediate effect of a foreign money supply increase on Home's real exchange rate?
- What does the immediate real exchange rate response imply for Home's current account balance?
- Explain how the resulting gold shipments will restore current account balance between Home and Foreign under the price-specie-flow mechanism.

8 Relative Purchasing Power Parity: 10 minutes

Relative Purchasing Power Parity is equivalent to

$$\frac{E^e - E}{E} = \pi - \pi^*.$$

- State the definition of the real exchange rate q .
- Derive $\frac{E^e - E}{E} = \pi - \pi^*$ from that definition, using the rule of changes.
- If domestic inflation increases, what does Relative Purchasing Power Parity imply for nominal exchange rate depreciation?
- If domestic inflation increases, what does Relative Purchasing Power Parity imply for real exchange rate depreciation?
- If domestic inflation increases, what does Relative Purchasing Power Parity imply for the nominal interest rate differential $R - R^*$?
- If domestic inflation increases, what does Relative Purchasing Power Parity imply for the real interest rate differential $r^e - r^{e*}$?