

NAME:

STUDENT ID:

Economics 103 — Spring 2005
International Monetary Relations

Final Exam

June 7, 2005

Time: 120 minutes
Total score: 120 points

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1 Interest Parity Conditions: 10 minutes

State the condition for Covered Interest Parity (CIP). State the condition for Uncovered Interest Parity (UIP). State two assumptions that must be satisfied for UIP to hold but need not be satisfied for CIP.

2 Recessions and the Long Run Exchange Rate: 10 minutes

Consider the experience of Japan in the late 1990s: a prolonged recession coupled with mild deflation. Over the same period, the U.S. economy experienced rapid growth and low inflation. Suppose $R^{US} = 4\%$, $\pi^{US} = 2\%$, $R^{JP} = 0\%$, $\pi^{JP} = -2\%$.

- Does the Fisher effect hold in the numeric example above?
- Does real interest parity hold in the numeric example above? Does relative PPP hold?
- What is the expected long-term nominal depreciation rate of the USD/JPY exchange rate?
- By 2003, the Japanese economy showed signs of recovery. What effect does faster output growth have on the nominal exchange rate?

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3 Purchasing Power Parity: 10 minutes

The *Economist* magazine compares exchange rates by contrasting the prices of identical goods across countries at current nominal exchange rates. Explain briefly in terms of the theory of *purchasing power parity* why this comparison can be a useful guide to the fundamental value of currencies. State two potential problems with such comparisons.

The average price of a Starbucks tall latte coffee in the U.S. in January 2004, the last time the survey was conducted, was the same as the average price of a McDonald's Big Mac: USD 2.80. Which of the following currencies is undervalued, which is overvalued? What may explain the difference between the "burgernomics" and "lattenomics" result in the case of China?

	Starbucks tall latte	McDonald's Big Mac
US Dollar 1/2004	USD 2.80	USD 2.80
Chinese Renminbi 1/2004	USD 2.77	USD 1.23
European Euro 1/2004	USD 3.72	USD 3.47
US Dollar 12/2004		USD 3.00
Japanese Yen 12/2004		USD 2.50
European Euro 12/2004		USD 3.75

4 Economic Shocks and Exchange Rate Regime: 10 minutes

Consider a small open economy that faces strong fiscal fluctuations which often turn into budget deficits. The central bank is not independent and must monetize the government's deficits. The country wants to choose an exchange rate regime that stabilizes output and employment.

- What exchange rate regime would you recommend and why? Make your case briefly.
- Would your answer change for a country whose economy produces goods for export to a large degree?

5 Sterilized Intervention: 10 minutes

Foreign bonds and domestic bonds are imperfect substitutes. Write down the Adjusted Uncovered Interest Parity condition. What does the risk premium ρ depend on upon and with what sign?

Suppose the home central bank conducts a *permanent* sterilized purchase of foreign assets with no effect on money in circulation. Show how the nominal exchange rate, output, and the current account react under imperfect asset substitutability in an AA-DD diagram. Do nominal exchange rate expectations change under this sterilized intervention?

6 Macroeconomic Diagnosis: 10 minutes

Suppose a country's economic policymakers observe a sudden *temporary* drop in demand for foreign goods. The country's exchange rate is freely floating and prices are sticky in the short run. What is the *immediate* current account response? What is the *short-run* effect on the home economy's output, domestic interest rate, nominal exchange rate, and current account? Note that the short-run current account response may differ from the immediate response. Use an AA-DD-XX diagram to illustrate the effect.

What policy can its policy makers pursue to restore both the prior output level and the current account target in the *short-run*?

7 Effectiveness of Economic Policy: 10 minutes

Discuss briefly the effectiveness or ineffectiveness of *permanent* fiscal expansions and monetary expansions under a *fixed* exchange rate in the *short run* and in the *long run*. You may but need not use diagrams to support your discussion.

8 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.

- To start, suppose the resulting price inflation from the oil price shock is the same throughout the world and keep domestic and foreign monetary policies unchanged. How does the real exchange rate adjust? How does the nominal exchange rate adjust?
- State the domestic money market equilibrium condition. How is the domestic nominal interest rate affected? How is the differential between home and foreign nominal interest rates affected? How does domestic output respond if interest rates have no autonomous effect on output?
- Finally, suppose that higher oil dependency makes domestic demand respond little (inelastically) to prices so that the oil price shock leads to a larger price increase in the home economy than abroad. How are home output and the current account affected? Does the response resemble more the recent current account and exchange rate experience of China or the U.S.? Use an AA-DD-XX diagram to substantiate your answers.

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10 Optimum Currency Areas: 10 minutes

Define the term *optimum currency area*. State two benefits for a country to join an optimum currency area. State two costs of joining. Suppose policymakers conclude that it is highly advantageous for country A to join a monetary union and highly disadvantageous for country B to join. Depict where A and B's expected degree of integration would lie in an according GG-LL diagram.

11 Expected Revaluation: 10 minutes

China is under international pressure to revalue its fixed currency to an appreciated new peg. Suppose domestic and foreign investors receive credible news that lead them to expect a revaluation within a month. Consider the controls on international capital flows to and from China as not binding so that arbitrage opportunities cannot last.

Use a diagram showing Chinese 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 Chinese nominal interest rate, the nominal exchange rate, and the Chinese price level to this change in expectations. You may but need not suppose that the Chinese central bank initially defends the present exchange rate peg.

What happens if controls on international capital flows to and from China are binding?

12 Self-fulfilling Speculation on Revaluation: 10 minutes

Consider the Chinese central bank in the following strategic situation. Contrary to common currency attacks, the Chinese monetary authority holds larger values of foreign assets than domestic assets $W^{\text{CB}} > B^{\text{CB}}$ (after a series of sterilized interventions).

There is a number J of Chinese and foreign investors who all own one unit of foreign currency and consider exchanging it for Chinese Renminbi (RMB) in anticipation of its revaluation. In the case of a revaluation, the central bank incurs losses of R per unit of foreign reserves that it has to acquire in defense of the undervalued Renminbi (anticipated capital losses from a future Renminbi appreciation).

- Consider E the Renminbi exchange rate per USD. What is the sign of ΔE under a revaluation?
- Show that a no-attack-no-revaluation equilibrium exists.
- Investor i and the central bank anticipate that I other investors will attempt to attack the undervalued Chinese Renminbi and acquire Chinese currency. Show that a successful speculation on a revaluation (attack) is an equilibrium for every investor i and the central bank if there is a large number I of other attackers.
- In the light of your analysis, judge the following statement.

The Chinese monetary authority should revalue the Renminbi strongly in one single step in order to avert future speculation.

		Chinese Central Bank ($W^{\text{CB}} > B^{\text{CB}}$)	
		Defend ($\Delta E = 0$)	Revalue ($\Delta E \neq 0$)
Investor i	Attack	$-c$ $-R(I + 1)$	$-\Delta E - c$ $\Delta E(W^{\text{CB}} - B^{\text{CB}})$
	Hold	0 0	ΔE $\Delta E(W^{\text{CB}} - B^{\text{CB}})$