Problem Set 2

May 3, 2007

Due: **Thu May 17, 1:55pm**
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1 The Empirics of Purchasing Power Parity and Exchange Rates

Examine the MXN/USD (peso-dollar) nominal exchange rate and the ratio of the Mexican and the US CPI for the period from February 1993 to December 2006. What do you observe? Does absolute or relative PPP seem to hold in the long term? If not, what might be reasons for failure? Repeat the exercise for the MXN/USD black-market exchange rate for the period from February 1993 to December 2006.

You may choose not to print the graphs. In that case, draw the stylized figures for your answer.

Data. Visit *http://www.globalfindata.com/ucsd.php3* and display the nominal MXN/USD exchange rate (symbol: ₋MXN₋D), the MXN/USD black-market exchange rate (symbol: XRMXNBM), the consumer price index in Mexico (symbol: CPMEXM), and the consumer price in the US (symbol: CPUSAM). To view a series, enter the according symbol in the field Stock/GFD Symbol in the search engine. Then select 'Interactive Charts'. There are at least two alternatives to conduct your analysis. First, for a precise answer, try to plot the ratio between the Mexican and US CPI, choose Jump to Symbol for the US CPI, choose as 'Technical Indicator' the option 'Divide Two Series', and enter the symbol for the Mexican CPI. (If this option is still disabled, you may try to conduct this analysis yourself with alternative software after downloading the data.) Second, to gain a quick understanding of the evolution, it is useful to plot the Mexican exchange rate next to the Mexican CPI under the assumption that US CPI changes are minor compared to Mexican CPI changes. For this purpose, choose as 'Technical Indicator' the option 'Compare Two Series', and enter the symbol for the Mexican CPI.

2 The DD-AA Model

Small open economies tend to spend a larger fraction of income on imports than large economies do. Their import volumes are also more responsive to changes in their national income. Does this imply that the DD-curve in the

Netherlands, a smaller and more open economy than the US, is flatter than the DD-curve in the US? Use a suitable diagram to derive your answer. Would a temporary monetary expansion in the Netherlands have a stronger or weaker effect on output? Use a suitable diagram to substantiate your answer.

3   Import Tariffs and the Current Account

Take a commodity-trade perspective of the current account and suppose restrictions of import volumes do have an effect on values. The government imposes a tariff on all imports. Use the DD-AA model to analyze the effects this measure would have on the economy. Consider both *temporary* and *permanent* tariffs.

In question 1 of problem set 1, you were asked to take a purely financial view of the current account with savings and investment decisions dictated by world real interest rates. Under that point of view, your answer was different. Why?

4   Monetary and Fiscal Policy under Different Exchange Rate Regimes

Show the effects of a *temporary* and a *permanent* monetary contraction on the current account, interest rates and output under a floating exchange rate and under a fixed exchange rate. Do the two policies have different effects under a fixed exchange rate? Why or why not?

Show the effects of a *temporary* and a *permanent* fiscal expansion on the current account, interest rates and output under a floating exchange rate and under a fixed exchange rate. Do the two policies have different effects under a fixed exchange rate? Why or why not?

5   Macroeconomic Analysis and Intervention

Take the perspective of a South Korean resident. In particular, let E denote the KRW/USD (Won-US Dollar) exchange rate so that an elevated E means a depreciated Won. You observe the following simultaneous macroeconomic developments: A fall in Korean output, an appreciation of the KRW, and a fall in the Korean current account.

Which of the following *temporary* shocks is mostly likely to explain this macroeconomic pattern: A shock to consumer tastes for Korean goods, a shock to money demand, or a shock to investment? Use the DD-AA-XX model to explain your answer.

The Korean government wishes to restore output to its level before the shock, while retaining the current account balance as close as possible to its pre-shock level. Would you recommend monetary or fiscal intervention? What is the effect of your policy on the KRW exchange rate? Use the DD-AA-XX model to substantiate your answer.

6 Money Supply, Imperfect Asset Substitutability and the Nominal Exchange Rate

The Adjusted Uncovered Interest Condition can be expressed as

$$R = R^* + \frac{E^e - E}{E} + \rho,$$

where ρ is the risk premium of domestic bonds over foreign bonds. How does an increased supply of domestic bonds to the private sector affect the risk premium ρ? Redraw the foreign exchange equilibrium diagram, showing the exchange rate and the expected currency returns, under the Adjusted Uncovered Interest Condition.

The Federal Reserve System increases aggregate money supply permanently, purchasing domestic bonds in the open market. Use diagrams showing the exchange rate, expected currency returns and money holdings to analyze the *short-term* and the *long-term* effects on the US interest rate, the US price level and the nominal exchange rate. Compare your answer to question 6 of problem set 1.

Hint: Effects on the risk premium are small in practice compared to the Fisher effect.