

Management 495 — Spring 2015

Topics in Finance: International Macroeconomics

Policy Discussion Assignment 2

May 5, 2015

Due: Tue, May 19, *before 9:00am*
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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 1998.

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

Data. Visit <https://www.globalfinancialdata.com/> and display the nominal MXN/USD exchange rate (symbol: XRNMEXM), the MXN/USD black-market exchange rate (symbol: USDMXNB), 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 “GFD AutoSearch” box in the upper left-hand corner. You may want to download the series into four separate spreadsheets, then copy and paste the MXN/USD exchange rate and the two CPI series into one spreadsheet, and copy and paste the MXN/USD black-market exchange rate and the two CPI series into another spreadsheet. To plot the ratio between the Mexican and the US CPI, you can divide the Mexican CPI series by the US series directly (e.g. if the first Mexican CPI observation is in cell b2 in Excel and the first US CPI observation in cell c2, you could use the formula “=B2/C2” for the current cell on line 2) and then plot the resulting series by highlighting it and clicking the “Chart Wizard” button from the Excel toolbar. Select a line chart and then click the “Next” button. In the following window, select the “Series” tab and use the series of dates in the left column as the “Category (X) axis labels”.

2 Competitiveness, Internal Devaluations and Non-Traded Goods

Many industries $z \in [0, 1]$ can produce in two regions: Southern Europe (Home with no asterisk) and the Rest of Europe (asterisk). There is one mobile factor of production: labor L . The $A(z)$ schedule summarizes per-unit labor requirements $a^*(z)/a(z)$ by industry, the $B(z)$ schedule imposes global market clearing: $\omega = w/w^* = [z/(1-z)](L^*/L)$. For simplicity, assume that there is balanced trade.

Build up a diagram that reflects Ricardian trade by relating the $A(z)$ schedule to the wage gap $\omega = w/w^*$, and show an initial equilibrium when there are no trade costs. Which industries locate where? What range of industries is not traded?

Build up a new diagram that reflects Ricardian trade when there are trade costs $1 + \tau$ (for $\tau > 0$). State the relationships between $A(z)(1 + \tau)$, $A(z)/(1 + \tau)$ and the wage gap ω in equilibrium, and show a new initial equilibrium when there are trade costs. Which industries locate where? What range of industries is not traded?

An “internal devaluation” occurs when the real exchange rate depreciates in the absence of a nominal exchange rate response. In the new diagram, show the effect of balanced productivity growth in the Home country, with a proportional reduction in per-unit labor requirements $a(z)$. Which industries locate where after balanced productivity growth in the Home country? What range of industries is not traded after balanced productivity growth in the Home country? How does Home’s real exchange rate change with balanced productivity growth? Is this an “internal devaluation”? If trade is not balanced, how would the current account arguably change in response to Home’s real exchange rate change?

Now suppose the trade costs $1 + \tau$ (for $\tau > 0$) fall arbitrarily close to zero. How does Home’s real exchange rate change as trade costs fall arbitrarily close to zero? What range of industries is becoming not traded?

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 QQ-DD model to analyze the effects this measure would have on the economy. Consider both *temporary* and *permanent* tariffs.

In question 1 of Policy Discussion Assignment 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 Macroeconomic Analysis and Intervention under the Gold Standard

Take the historic perspective of a resident in a country on the Gold standard. In particular, keep a fixed nominal exchange rate $E = \bar{E}$ at all times while Uncovered Interest Parity is satisfied under free capital markets. Consider P and P^* fully flexible. Why is $E = \bar{E}$ fixed under the gold standard? What does $E = \bar{E}$ imply for the relationship between R and R^* ?

To reflect the Gold Standard's workings, draw a QQ-DD-XX diagram with a horizontal QQ schedule. The horizontal QQ schedule reflects free and flexible international goods markets that satisfy Absolute Purchasing Parity $q = EP^*/P$.

Suppose the home country suffers an incipient current account deficit because of an autonomous drop in the current account balance (CA). In the absence of any monetary intervention, how does the Price-specie Flow Mechanism restore external balance? Substantiate your answer in a QQ-DD-XX diagram. Under the "rules of the game" what was the monetary intervention prescribed to the home country with an incipient deficit? What was the monetary intervention prescribed to monetary authorities in the foreign countries with an incipient surplus? How do those prescribed monetary interventions restore external balance? Substantiate your answer in a QQ-DD-XX diagram.

5 Macroeconomic Analysis and Intervention under a Floating Exchange Rate

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 QQ-DD-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 QQ-DD-XX model to substantiate your answer.

6 Consequences of Negative Interest Rates

On June 5, 2014, the European Central Bank (ECB) announced a *permanent* monetary expansion, coupled with a below-zero interest rate for commercial bank deposits at the ECB. The nominal exchange rate of the Euro, however, responded little. Take the perspective of the Euro area as the home economy.

To explain the lacking response of the Euro nominal exchange rate, suppose that real-market reactions cause a negligibly small net response to the monetary shock. Use a QQ-DD-XX diagram and draw a DD curve so that the nominal exchange rate will respond little to monetary shocks. Draw an XX curve consistent with your DD curve and depict the initial equilibrium. Analyze the consequences of a permanent monetary expansion for output Y , the real exchange rate q , and the current account balance in the *short run* and in the *long run*.

To explain the lacking response of the Euro nominal exchange rate, now hypothesize that risk premia on currency holdings move such that they largely offset the otherwise resulting nominal exchange rate response. Use a new QQ-DD-XX diagram and draw a conventional DD curve so that the nominal exchange rate would respond to monetary shocks. What kind of monetary expansion by the ECB can move risk premia on currency holdings so that the nominal exchange rate hardly responds? Analyze the consequences of a permanent monetary expansion for output Y , the real exchange rate q , and the current account balance in the *short run* and in the *long run*. Given what you know about the ECB's open-market interventions, is a scenario of a special DD curve or of changing risk premia more realistic?