Practice questions: Set #3

What should you do with this set?

To help students prepare for the exams and group cases, several problem sets with solutions shall be handed out. They shall not be graded: the number of "points" for a question solely indicates the time/difficulty of that question.

Students are strongly encouraged to try hard to solve them and to use office hours to discuss any problems they may have doing so. The best self-test for a student of his or her command of the material before an exam is whether he or she can handle the questions of the relevant practice sets. To reflect this close association between practice sets and exams, the final exam shall include at least a part of a question from the relevant practice sets.

Question 1. (5 points)

Comment on the following statement: “Since the U.S. imports more than it exports, it is necessary for the U.S. to import capital from foreign countries to finance its current account deficits.”

Question 2 (5 points)

Since the early 1980s, foreign investors (including the central banks of many emerging countries) have purchased a significant portion of U.S. Treasury bond issues. Discuss the short-term and long-term effects of foreigners’ portfolio investment on the U.S. balance of payments.

Question 3. (10 points)

Explain how each of the following transactions would be classified and recorded in the debit and credit of the U.S. balance of payments:

(a) A Japanese insurance company purchases U.S. Treasury bonds at the U.S. government auction (primary market transaction) and pays out of its bank account kept in New York City.

(b) A U.S. citizen consumes a meal at a restaurant in Paris and pays with her American Express card.

(c) A legal Indian immigrant living in Los Angeles sends a check drawn on his L.A. bank account as a gift to his parents living in Bombay.

(d) A U.S. computer programmer is hired by a British company for consulting and gets paid from the U.S. bank account maintained by the British company.

(e) Does your answer to the previous question (4d) change, if a U.S. subsidiary of the British company were paying the programmer instead?
**Question 4. (5 points)**

In a freely-floating exchange rate system, if a country is running a current account deficit:

a. what are the consequences for the nation's balance on capital account?

b. on its overall balance of payments?

**Question 5. (5 points)**

Currently, Social Security is fairly minimal in Japan as well as in China. Suppose that either country institutes a comprehensive social security system: how is this policy switch likely to affect that country’s trade surplus?

(Hint: think about the effect of this change in policy on savings).

**Bonus Question. (5 points)**

Relative to equivalent prices in May, 1992, should option prices (£/DM) have been higher or lower just after the £ left the ERM (the European Exchange Rate Mechanism) in September, 1992? Why?

(Hint: don't think the question is complicated; it is a “bonus” because the ERM is not exam material).
Practice set #3 & solutions

Question 1. (5 points)

Comment on the following statement: “Since the U.S. imports more than it exports, it is necessary for the U.S. to import capital from foreign countries to finance its current account deficits.”

Answer

The statement presupposes that the U.S. current account deficit causes its capital account surplus. In reality, the causality may be running in the opposite direction: U.S. capital account surplus may cause the country’s current account deficit.

Suppose that foreigners find the U.S. a great place to invest and send their capital to the U.S., resulting in U.S. capital account surplus. This capital inflow will strengthen the dollar, hurting U.S. export and encouraging U.S. imports from foreign countries, causing current account deficits in the United States.

Question 2. (5 points)

Since the early 1980s, foreign investors (including the central banks of many emerging countries) have purchased a significant portion of U.S. Treasury bond issues. Discuss the short-term and long-term effects of foreigners’ portfolio investment on the U.S. balance of payments.

Answer.

As foreigners purchase U.S. Treasury bonds, the U.S. BOP will “improve” in the short run. In the long run, the answer is not clear-cut. The U.S. BOP may deteriorate in that the U.S. should pay interests and principal to foreigners. If foreign funds are used productively and contribute to the competitiveness of U.S. industries, however, then the U.S. BOP may improve in the long run.
**Question 3. (5 points)**

Explain how each of the following transactions will be classified and recorded in the debit and credit of the U.S. balance of payments:

(a) A Japanese insurance company purchases U.S. Treasury bonds at the U.S. government auction (primary market transaction) and pays out of its bank account kept in New York City.
(b) A U.S. citizen consumes a meal at a restaurant in Paris and pays with her American Express card.
(c) A legal Indian immigrant living in Los Angeles sends a check drawn on his L.A. bank account as a gift to his parents living in Bombay.
(d) A U.S. computer programmer is hired by a British company for consulting and gets paid from the U.S. bank account maintained by the British company.

**Answer.**

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<tr>
<th>Transactions</th>
<th>Credit</th>
<th>Debit</th>
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<td>Japanese purchase of U.S. T bonds</td>
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<td>Japanese payment using NYC account</td>
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<td>U.S. citizen having a meal in Paris</td>
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<td>Paying the meal with American Express</td>
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<td>Gift to parents in Bombay</td>
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<td>Receipts of the check by parents (goodwill)</td>
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<td>Export of programming service</td>
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<tr>
<td>British payment out its account in U.S.</td>
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</tbody>
</table>

(e) Does your answer to question 4(d) change, if a U.S. subsidiary of the British company were paying the programmer instead?

**Answer.**

Yes. In that case, both parties involved are U.S. residents and the transaction is purely domestic from a BOP perspective.
Question 4.

In a freely-floating exchange rate system, if a country is running a current account deficit:

a. what are the consequences for the nation's balance on capital account?

Answer

In a free float, the central bank does not carry out foreign-exchange operations. In such a country, the sum of the capital account balance and of the current account balance is equal to the BOP, which is always 0. Hence, if a country is running a current account deficit, it will be running a capital account surplus: this has been the case for the US since the beginning of the 80's.

b. on its overall balance of payments?

Answer

None: by definition, the BOP always is 0.

Question 5.

Currently, Social Security is fairly minimal in Japan and in China. Suppose that either country institutes a comprehensive social security system: how is this policy switch likely to affect that country’s trade surplus?

(Hint: think about the effect of this change in policy on savings).

Answer

Part of the Japanese people's savings originate in their need to plan for expenses, such as retirement, that a Social Security system typically handles. Hence, if either Japan or China were to institute a comprehensive social security system, private savings in that country would most likely go down. See, for example, The Economist July 30th, 2009 story on “Rebalancing the world economy: China”:

“According to Eswar Prasad (a Professor of Economics at Cornell University) the saving rate of urban households has jumped from 20% to 28% of their disposable income over the past decade. After exploring all the possible causes, he concludes that uncertainty about the private burden of health care and education is indeed the main culprit. The effect has been worsened by an undeveloped financial system, making it hard for households to borrow."

The key element for the answer therefore lies in the financing of the SS system. If the government increased taxes to pay for it, then the net effect on Japan or China's savings behavior would likely be negligible – private savings would be replaced by taxes, i.e., by government savings.

If, on the other hand, the government increased borrowing to bankroll the social security system, then the burden of the financing would be shifted from current generations onto younger ones. Assuming people are not altruistic and will not start saving for the additional expenses to be incurred by their descendants at some point in the future (those bonds would have to be paid
off some day…), it is likely that savings in Japan would decrease and that consumption would increase. As savings go down, investments abroad would also go down and hence the **capital account deficit would shrink**. Since the current account balance mirrors the capital account balance, the **current account surplus would shrink**. This makes sense: as private consumption goes up, so do imports; at the same time, some products that used to be sold abroad are now going to be consumed domestically, so exports also go down.

**Bonus Question. (5 points – NOT exam material)**

Relative to equivalent prices in May, 1992, should option prices (£/DM) have been higher or lower just after the £ left the ERM in September, 1992? Why?

(Hint: don't think the question is complicated; it is a “bonus” because the ERM is not exam material).

**Answer**

Before September 1992, the European Monetary System's Exchange Rate Mechanism (ERM) was a target zone system with ±2.25% variation bounds. That is, participating countries’ central banks were bound to intervene in the FX market to keep exchange rates within 2.25% of their target levels against the ECU. In September 1992 (“THE crisis”, as it became known – think how George Soros first became widely known), the £ left the ERM and became free to fluctuate -- i.e., its price was determined by a free float. As a result, its volatility dramatically increased with respect to those European currencies that did not exit the ERM at the time.

This increase in £ volatility is the key to understanding the change in £ option prices. Recall that an option is exercised only when it is in the money. If the volatility of the underlying currency increases, everything else being equal, then the currency option will be in the money as often as it was before the volatility increased -- but will be more often **deep** in the money than it was before. As a result, it should be worth more. Said precisely, options prices are an increasing function of the volatility of the underlying securities (here the DM and the £). Hence, options prices that deal with the £ have increased since September.