Principles of Economics II (Spring 2013)
Homework #5 Answers
(Chapter 31-32, due on May 29, 2013, submitted in class)

Note: All textbook problem numbers refer to "Problems and Application" part in corresponding chapter, the 6th Chinese/U.S. edition of the textbook.

TAs will score Odd-number problems.

For Chapter 31

1. Textbook, chapter 31, #1

a. When an American art professor spends the summer touring museums in Europe, he spends money buying foreign goods and services, so U.S. exports are unchanged, imports increase, and net exports decrease.
b. When students in Paris flock to see the latest movie from Hollywood, foreigners are buying a U.S. good, so U.S. exports rise, imports are unchanged, and net exports increase.
c. When your uncle buys a new Volvo, an American is buying a foreign good, so U.S. exports are unchanged, imports rise, and net exports decline.
d. When the student bookstore at Oxford University sells a pair of Levi's 501 jeans, foreigners are buying U.S. goods, so U.S. exports increase, imports are unchanged, and net exports increase.
e. When a Canadian citizen shops in northern Vermont to avoid Canadian sales taxes, a foreigner is buying U.S. goods, so U.S. exports increase, imports are unchanged, and net exports increase.

2. Textbook, chapter 31, #4

a. When an American cellular phone company establishes an office in the Czech Republic, U.S. net capital outflow increases, because the U.S. company makes a direct investment in capital in the foreign country.
b. When Harrod's of London sells stock to the General Electric pension fund, U.S. net capital outflow increases, because the U.S. company makes a portfolio investment in the foreign country.
c. When Honda expands its factory in Marysville, Ohio, U.S. net capital outflow declines, because the foreign company makes a direct investment in capital in the United States.
d. When a Fidelity mutual fund sells its Volkswagen stock to a French investor, U.S. net capital outflow declines (if the French investor pays in U.S. dollars), because the U.S. company is reducing its portfolio investment in a foreign country.

3. Textbook, chapter 31, #6

Note: Assume price levels in either country unchanged.

a. Dutch pension funds holding U.S. government bonds would be happy if the U.S. dollar appreciated. They would then get more Dutch guilders for each dollar they earned on their U.S. investment. In general, if you have an investment in a foreign country, you are better off if that country's currency appreciates.
b. U.S. manufacturing industries would be unhappy if the U.S. dollar appreciated because their prices would be higher in terms of foreign currencies, which will reduce their sales.
c. Australian tourists planning a trip to the United States would be unhappy if the U.S. dollar appreciated because they would get fewer U.S. dollars for each Australian dollar, so their vacation will be more expensive.
d. An American firm trying to purchase property overseas would be happy if the U.S. dollar appreciated because it would get more units of the foreign currency and could thus buy more property.

4. Textbook, chapter 31, #10

If you take *X* units of foreign currency per Big Mac divided by 3.57 dollars per Big Mac, you get *X*/3.57 units of the foreign currency per dollar; that is the predicted exchange rate.

a. Chile: 1,750 pesos/3.57 = 490 pesos/$
Hungary: 720 forints/3.57 = 202 forints/$
Czech Republic: 67.9 korunas/3.57 = 19 korunas/$
Brazil: 8.03 reales/3.57 = 2.25 reales/$
Canada: 3.89C$/3.57 = 1.09C$/$

b. Under purchasing-power parity, the exchange rate of the Hungarian forint to the Canadian dollar is 720 forints per Big Mac divided by 3.89 Canadian dollars per Big Mac equals 185 forints per Canadian dollar. The actual exchange rate is 199 forints per dollar divided by 1.16 Canadian dollars per dollar equals 172 forints per Canadian dollar.

c. The exchange rate predicted by the Big Mac index (185 forints per Canadian dollar) is somewhat close to the actual exchange rate of 172 forints per Canadian dollar.

5. Textbook, chapter 31, #11

a. The exchange rate is 1 Ecterian dollar is equal to 3 Wiknamian pesos.

b. In Ecteria, the price of Spam would double. The price level will quadruple in Wiknam. The exchange rate between the two countries' currencies would double because of the differences in inflation rates.

c. Wiknam will have a higher nominal interest rate because of the Fisher effect.

d. The get-rich scheme would only work if there were a difference in real interest rates, not nominal interest rates. The nominal exchange rate between the two countries will adjust for the effects of inflation.

6. Assume that a typical consumer in China and a typical consumer in the United States buy the quantities and pay the prices indicated in the accompanying table (suppose goods and services are of identical quality in different countries):

	Bread		Car Services	
	Price	Quantity	Price	Quantity
China	2 RMB yuan	400	16 RMB yuan	300
U. S.	$1	1,000	$2	2,000

Suppose one RMB yuan is worth $1/7.

(1) Compute U.S. consumption per capita in dollars, and Chinese consumption per capita in RMB yuan.

U.S: $5,000; China: 5600 RMB yuan.

(2) Suppose each consumer spends all his/her income on consumption. When a Chinese consumer is going to live in the U.S., he/she exchanges all his/her income in YMB yuan into U.S. dollars. What his/her consumption level (in dollars) will be in the U.S. then? How a Chinese consumer's standard of livings is compared with a typical U.S. consumer, reflected by your calculation?

His/her consumption in the U.S. will be: 5600 yuan =$5600/7=$800. A Chinese consumer's standard of livings is just 800/5,000=16% of a U.S. consumer.

(3) An alternative way to compare standard of livings among countries is like this: When a Chinese consumer is going to live in the U.S., we try to keep his purchasing-power (rather than nominal income) unchanged, i.e., to make the same bundle of goods he/she consumes in China still available in the U.S.. How much *dollar* income a Chinese consumer would need to keep

his/her purchasing power unchanged when he/she lives in the U.S.? How a Chinese consumer's standard of livings is compared with a U.S. consumer, reflected by your new calculation?

A Chinese consumer need $1*400+$2*300=$1,000 to keep his/her purchasing power unchanged. A Chinese standard of livings is then 1,000/5,000=20% of a U.S. consumer.

(4) Do the two methods of computing standard of livings give the same results? If not, which method do you think is more reasonable?

No. The latter one is more reasonable. (Since it gives the *real* purchasing power, or standard of livings of people in different countries.)

(5) The purchasing-power parity theory states that a unit of any currency should be able to buy the same quantity of goods in both countries. Does this theory hold between U.S. and China for *bread*'s price data? For *car services*' price data? Why might the assumption underlying the theory of purchasing power parity not hold for some goods?

The PPP theory holds for neither of the two prices. Bread is under-priced and car is over -priced in China, compared with those in the U.S.. Two possible reasons: Goods might not be tradable; tradable goods might not be completely substitutes.

For Chapter 32

7. Textbook, chapter 32, #1

Japan generally runs a trade surplus because the Japanese savings rate is high relative to Japanese domestic investment. The result is high net capital outflow, which is matched by high net exports, resulting in a trade surplus. The other possibilities (high foreign demand for Japanese goods, low Japanese demand for foreign goods, and structural barriers against imports into Japan) would affect the real exchange rate, but not the trade surplus.

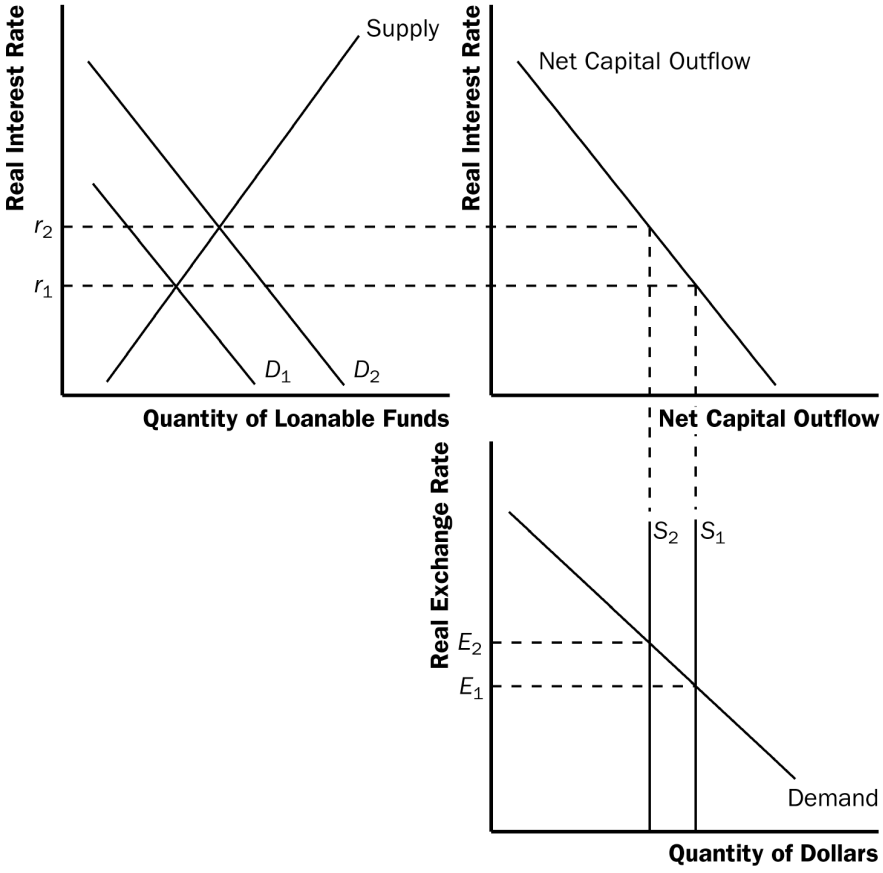

Figure 3

8. Textbook, chapter 32, #2

a. If Congress passes an investment tax credit, it subsidizes domestic investment. The desire to increase domestic investment leads firms to borrow more, increasing the demand for loanable funds, as shown in Figure 3. This raises the real interest rate, thus reducing net capital outflow. The decline in net capital outflow reduces the supply of dollars in the market for foreign exchange, raising the real exchange rate. The trade balance also moves toward deficit, because net capital outflow, hence net exports, is lower. The higher real interest rate also increases the quantity of national saving. In summary, saving increases, domestic investment increases, net capital outflow declines, the real interest rate increases, the real exchange rate increases, and the trade balance moves toward deficit.

b. A rise in the real exchange rate reduces exports.

9. Textbook, chapter 32, #3

a. A decline in the quality of U.S. goods at a given real exchange rate would reduce net exports, reducing the demand for dollars, thus shifting the demand curve for dollars to the left in the market for foreign exchange, as shown in Figure 4.

b. The shift to the left of the demand curve for dollars leads to a decline in the real exchange rate. Because net capital outflow is unchanged, and net exports equals net capital outflow, there is no change in equilibrium in net exports or the trade balance.

c. The claim in the popular press is incorrect. A change in the quality of U.S. goods cannot lead to a rise in the trade deficit. The decline in the real exchange rate means that we get fewer foreign goods in exchange for our goods, so our standard of living may decline.

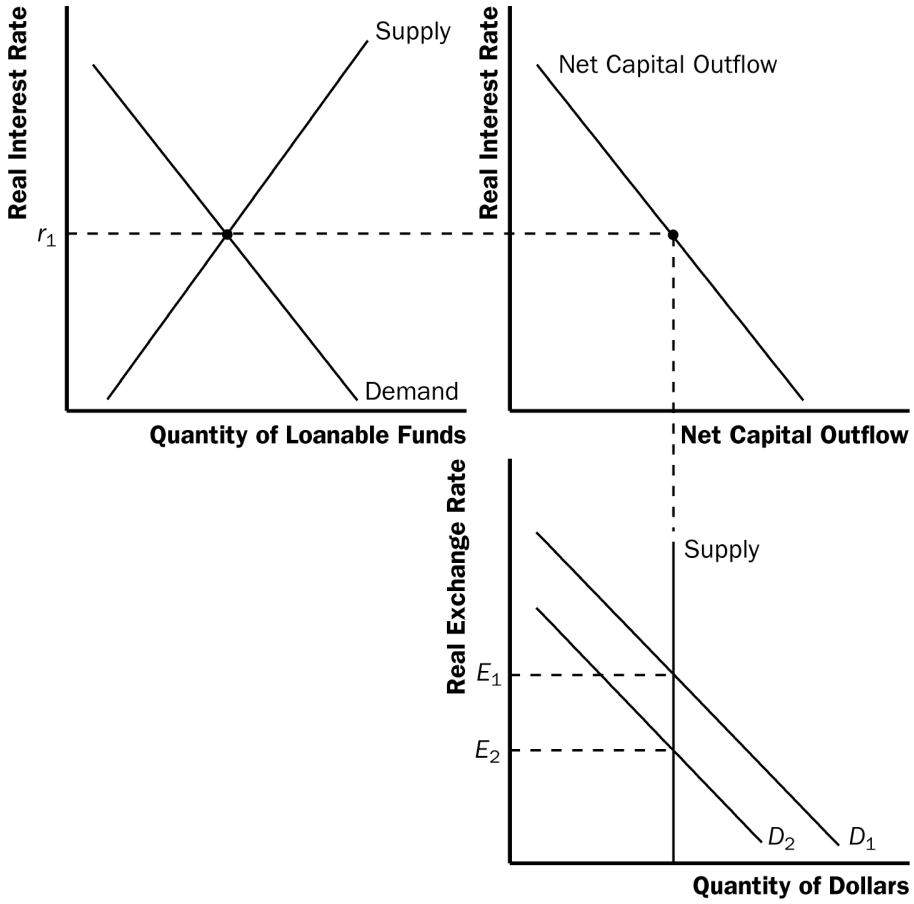

Figure 4

10. Textbook, chapter 32, #4

A reduction in restrictions of imports would reduce net exports at any given real exchange rate, thus shifting the demand curve for dollars to the left. The shift of the demand curve for dollars leads to a decline in the real exchange rate, which increases net exports. Because net capital outflow is unchanged, and net exports equals net capital outflow, there is no change in equilibrium in net exports or the trade balance. But both imports and exports rise, so export industries benefit.

11. Textbook, chapter 32, #7

If the government increases its spending without increasing taxes, public saving will fall (as will national saving). As Figure 7 shows, this will raise the real interest rate, reducing investment. Net capital outflow will fall. The real exchange rate will rise, causing exports to fall and imports to rise, moving the trade balance toward deficit.

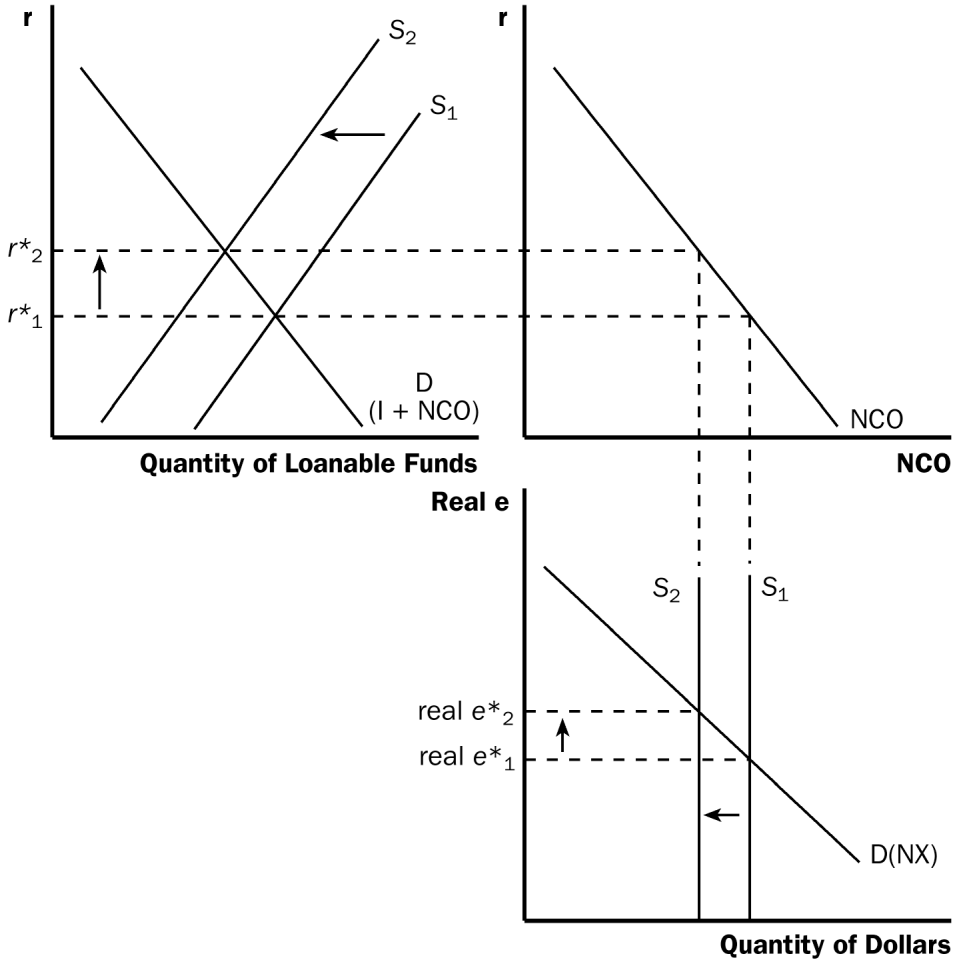

Figure 7

12. Textbook, chapter 32, #9

a. If the elasticity of U.S. net capital outflow with respect to the real interest rate is very high, the lower real interest rate that occurs because of the increase in private saving will increase net capital outflow a great deal, so U.S. domestic investment will not increase much.

b. Because an increase in private saving reduces the real interest rate, inducing an increase in net capital outflow, the real exchange rate will decline. If the elasticity of U.S. exports with respect to the real exchange rate is very low, it will take a large decline in the real exchange rate to increase U.S. net exports by enough to match the increase in net capital outflow.

13. Textbook, chapter 32, #11

a. When U.S. mutual funds become more interested in investing in Canada, Canadian net capital outflow declines as the U.S. mutual funds make portfolio investments in Canadian stocks and bonds. The demand for loanable funds shifts to the left and the net capital outflow curve shifts to the left, as shown in Figure 10. As the figure shows, the real interest rate declines, thus reducing Canada's private saving, but increasing Canada's domestic investment. In equilibrium, Canadian net capital outflow declines.

b. Because Canada's domestic investment increases, in the long run, Canada's capital stock will increase.

c. With a higher capital stock, Canadian workers will be more productive (the value of their marginal product will increase) so wages will rise. Thus, Canadian workers will be better off.

d. The shift of investment into Canada means increased U.S. net capital outflow. As a result, the U.S. real interest rises, leading to less domestic investment, which in the long run reduces the U.S. capital stock, lowers the value of marginal product of U.S. workers, and therefore decreases the wages of U.S. workers. The impact on U.S. citizens would be different from the impact on U.S. workers because some U.S. citizens own capital that now earns a higher real interest rate.

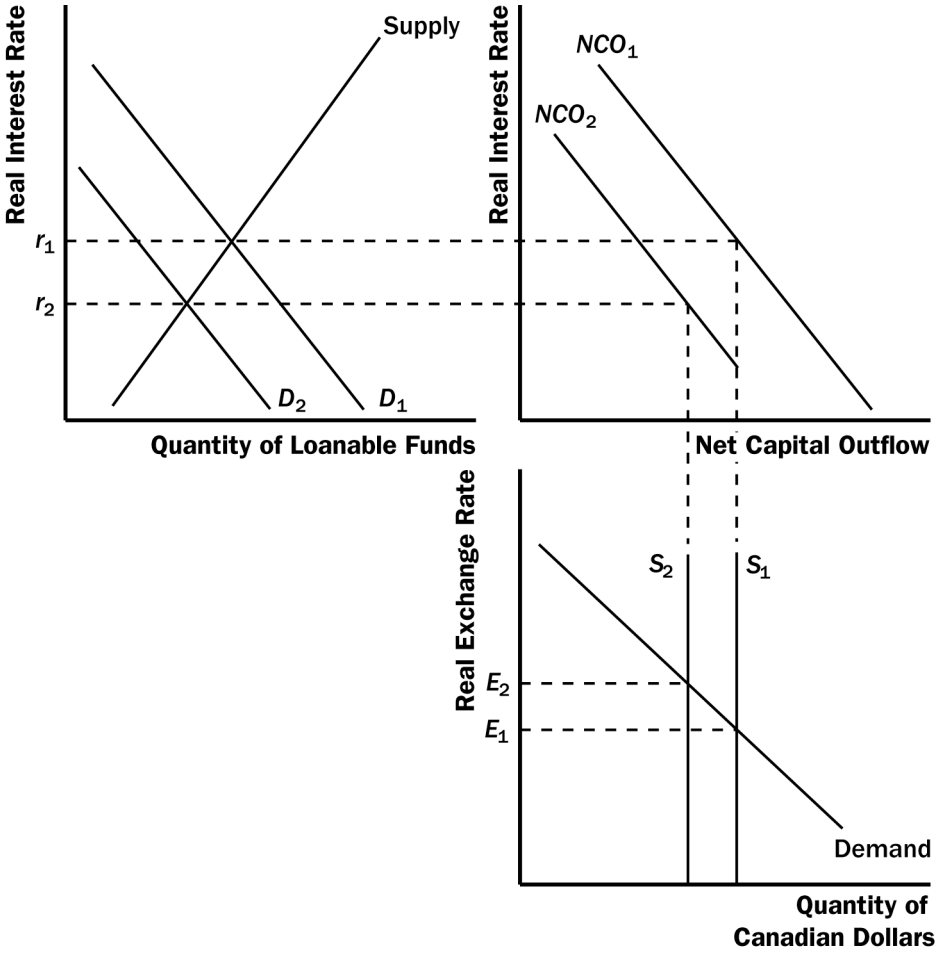

Figure 10

14. True or false? Low saving impedes growth in capital, productivity, and living standards for a closed economy, but not for an open economy. You'd better explain by a graph.

False. In the market for loanable funds, an open economy has a demand/supply curve (NCO+I/S-NCO) with the elasticity higher, yet not perfect, than one in a closed economy. A lower savings does raise the interest and reduce the investment, but less than its counterpart. (*Any one* of the two graphs below is correct.)