

Problem Set #1 - *Answers*
International Transactions
And Exchange Rates

1. On page 2 is the structure of the balance of payments accounts for a country, Wonkland, whose currency is the policio, denoted P, and whose capital city is Bene Costa. Suppose that during the year 1999, all of the international transactions of Wonkland were those listed below. Enter them into the country's balance of payments accounts on page 2, identifying each with its ID, the letter next to which it appears below.
 - a) A Wonkish corporation sells a shipment of hot gas to France, accepting as payment P750 worth of shares in a Chinese laundry in Paris.
 - b) A group of Wonklander children collects P140 worth of canned vegetables which they send to a group of undernourished fashion models in New York City.
 - c) A Wonk father orders Ned Gramlich's book on Benefit-Cost Analysis as a birthday gift for his 12-year old daughter, charging it to his Visa card issued by Citibank in New York. The price of the book is P0.15.
 - d) The Wonkian president, Susan Columns, buys an Exocet missile from a French firm for P3,000,000, promising that the next administration will pay for it. She then contributes the missile to the government of an unnamed country as "humanitarian aid."
 - e) Russ Parrot, a wealthy Wonknavian businessperson, withdraws DM 10,000,000 from his Swiss bank account, exchanges it for P2,340,000 in the foreign exchange market, and deposits the proceeds into his campaign fund where they are used to purchase Wonkovian treasury bills from a resident of Hong Kong.
 - f) Karenthian Columns, daughter of Susan, is paid royalties of P1,740 on sales of a book that she had previously ghost-written in the name of the family cat and published with a Japanese publisher. The royalties arrive from the publisher as a packet of small-denomination policio notes in a plain brown wrapper.
 - g) The national treasury of Wonkland makes interest payments on its national debt, including a check for P3,178 to U.S. resident Mary Corcoran. Corcoran mislays it and does not cash it until year 2000.
 - h) The Ford School of the University of Michigan, having commissioned construction of a subsidiary in Bene Costa, purchases architectural drawings of the building from a Wonkese firm. It pays P450,000 for these, writing a check on the School's account in the Bank of Bene Costa.
 - i) The Bank of Bene Costa reports an increase of P42,000 in its deposits. The deposit was in fact made by the American rock star once known as Prince, but because the deposit slip bore no name, the bank does not know where this money came from.
 - j) The Wonkeral Reserve Bank, which is the central bank of Wonkland, uses part of its reserves of Canadian dollars to purchase P815,000 from a Canadian student who wishes to liquidate her deposits in the Bank of Bene Costa out of fear of a policio devaluation.

Balance of Payments of Wonkland, 1999
(P)

	Credits (+)	ID	Debits (-)	ID
Current Account				
Merchandise	750	a	0.15	c
	140	b	3,000,000	d
	3,000,000	d		
Services	1740	f		
Investment Income			3178	g
Unilateral Transfers			140	b
Private				
Government			3,000,000	d
Financial Account				
Wonk Assets Abroad				
Wonk Official Reserves and Other Assets	815,000	j		
Wonk Private Assets				
Direct Investment Abroad				
Foreign Securities			750	a
Bank & Nonbank Claims & Currency	2,340,000	e		
Foreign Assets in Wonkland				
Foreign Official Assets in Wonkland				
Foreign Private Assets in Wonkland				
Direct Investment in Wonkland	450,000	h		
Wonk Securities			2,340,000	e
Bank & Nonbank Claims & Currency	0.15	c	1740	f
	3,000,000	d	450,000	h
	3178	g	815,000	j
	42,000	i		
Statistical Discrepancy			42,000	i

Calculate the following for Wonkland for 1999:

Memoranda

Balance on Merchandise Trade	+889.85
Balance on Goods, Services, and Income	<u>-548.15</u>
Balance on Current Account	<u>-3,000,688.15</u>
Balance on Financial Account	<u>+3,000,688.15</u>
Change in Reserves	<u>-815,000</u>

2. During the late 1990s (believe it or not), the U.S. government budget turned from deficit to surplus. Meanwhile, the U.S. current account deficit continued to grow. What does that tell you about private investment and/or private savings in the United States in that period?

Using the definition of GDP

$$Y = C + I + G + EX - IM$$

and that of the current account

$$CA = EX - IM$$

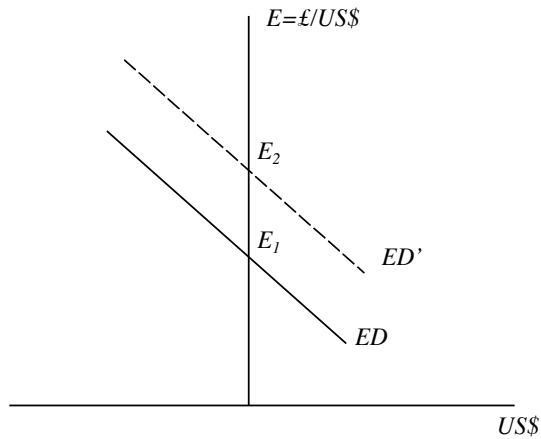
we can obtain

$$CA = (T - G) + (Y - T - C) - I$$

which says that the current account surplus is the government budget surplus plus private savings minus investment. Since the budget surplus turned from negative to positive while CA remained negative and growing, it must be true either that private savings was falling and/or that investment was increasing.

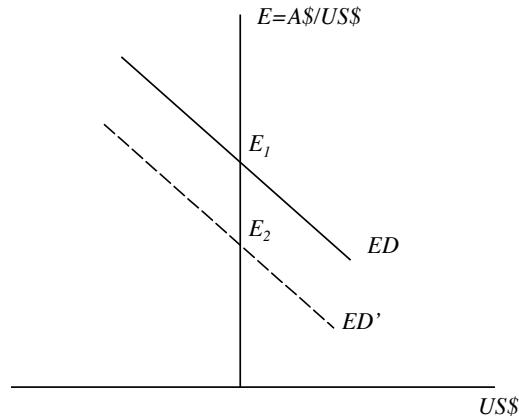
3. For each of the following events, determine how you would expect them to affect the exchange value of the indicated currency using a conventional exchange market analysis with downward sloping excess demand for foreign currency.
- The British pound: The Bank of England conducts expansionary monetary policy that lowers British interest rates.

This makes British assets, which yield this lower interest rate, less attractive, inducing both British and foreign holders of British bonds to cash them in and buy foreign currency (\$) in order to buy bonds outside Britain. Thus the excess demand for foreign currency shifts to the right, causing its price to rise and the pound to depreciate.



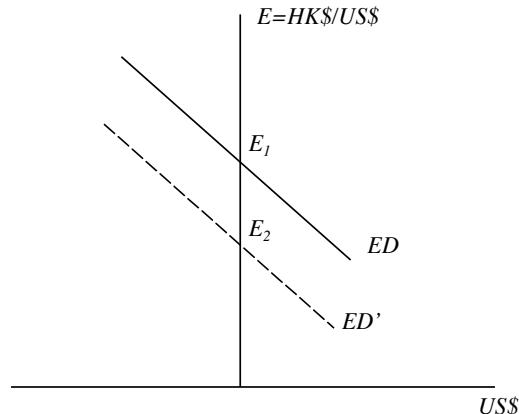
- The Australian dollar: World fashion turns toward a major Australian export, wool.

This increases Australian exports, reducing the excess demand for foreign currency (the US\$) and shifting the ED curve to the left. This causes a fall in the exchange rate expressed as the price of foreign currency, which is an appreciation of the Australian dollar.



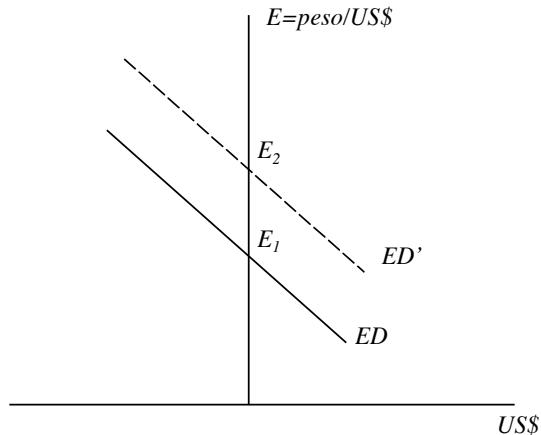
- c. The Hong Kong dollar: Speculative expectations of rising real estate prices attract foreign buyers to Hong Kong properties.

This foreign direct investment into Hong Kong increases the supply of foreign exchange, shifting the ED curve to the left and causing the HK\$ to appreciate.



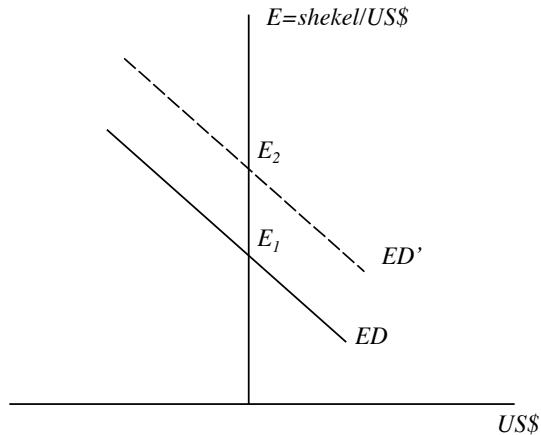
- d. The Mexican peso: Unionization of the Mexican workforce raises wages there.

Rising wages in Mexico push up Mexican prices, reducing Mexican exports and increasing imports. Both changes increase the excess demand for foreign exchange, shifting the ED curve to the right and causing the peso to depreciate.



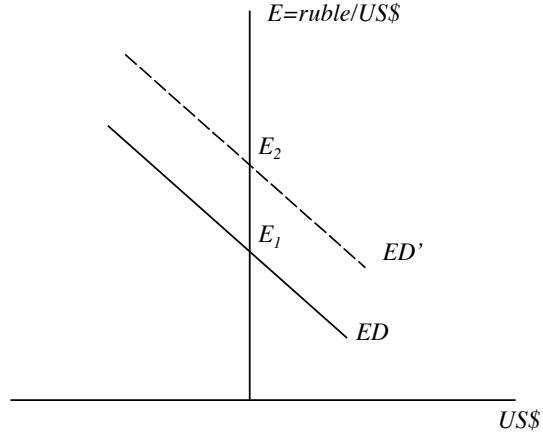
- e. Israeli shekel: The United States cuts in half its foreign aid to Israel.

This reduced supply of US\$ appears as a rightward shift in ED, which causes the shekel to depreciate.



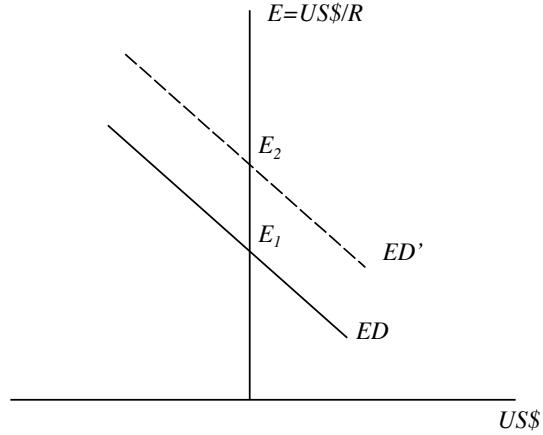
- f. Russian ruble: An illness suffered by Russian president Putin creates expectations that the value of the ruble will fall.

Fearing a falling ruble, investors withdraw their funds from Russia and convert them to foreign exchange, increasing excess demand for dollars. This causes the ruble to depreciate, just as expected.



- g. U.S. dollar: A new fad leads most American girls and young women to wear saris from India.

The increased imports of saris from India increase the demand for Indian Rupees, shifting the excess demand for them (in exchange for US\$) to the right. The Rupee rises in value, which means that the US\$ depreciates.



4. For each of the events that you examined in questions 3, indicate how, if at all, your answer would change if the exchange rate were completely and only determined by

a. Purchasing power parity

PPP says that only prices matter. Therefore the changes in question 3 will matter for exchange rates only if they affect prices:

- a) *British interest rates won't matter for the exchange rate under PPP. However, if the expansionary monetary policy pushes up British prices, then the pound will depreciate for that reason.*
- b) *If the increased demand for wool does not raise its price, then this will not change exchange rates under PPP. And if it does push up the price of wool, then PPP will predict that the Australian dollar depreciates instead of appreciating.*
- c) *The expectation will not matter under PPP, but the real estate prices themselves might. Again, the rising prices suggest a depreciation of the HK\$.*
- d) *Higher wages mean higher prices and peso depreciation under PPP, the same as using excess demand.*
- e) *Foreign aid should not matter at all under PPP.*
- f) *Expectations do not matter under PPP.*
- g) *Since the fad does not seem to affect prices in the U.S., PPP will not predict any change in the value of the US\$. (Except perhaps vis a vis the rupee, if demands for saris drive up prices there.)*

b. The asset theory of the exchange rate

The asset theory depends entirely on expectations, but these in turn can depend on anything else. In particular, each of the changes in question 3 could alter expectations of exchange rates exactly as described there, in which case the changes predicted would still occur. The only difference might be that they would happen sooner, as soon as the market learns of the change and before it actually happens.